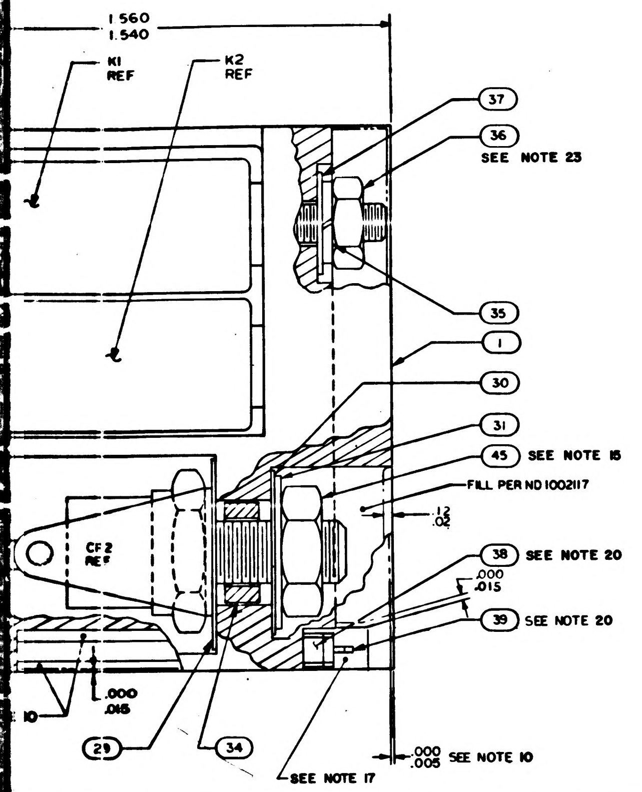
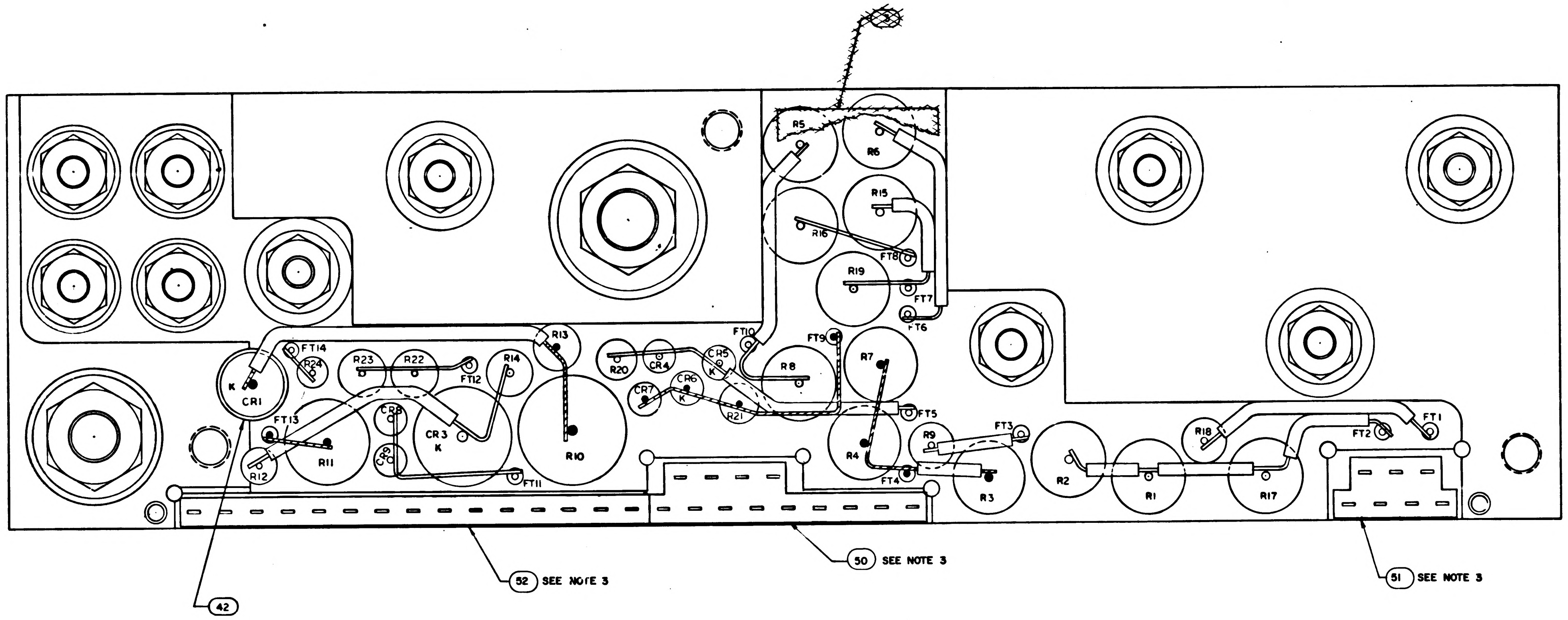
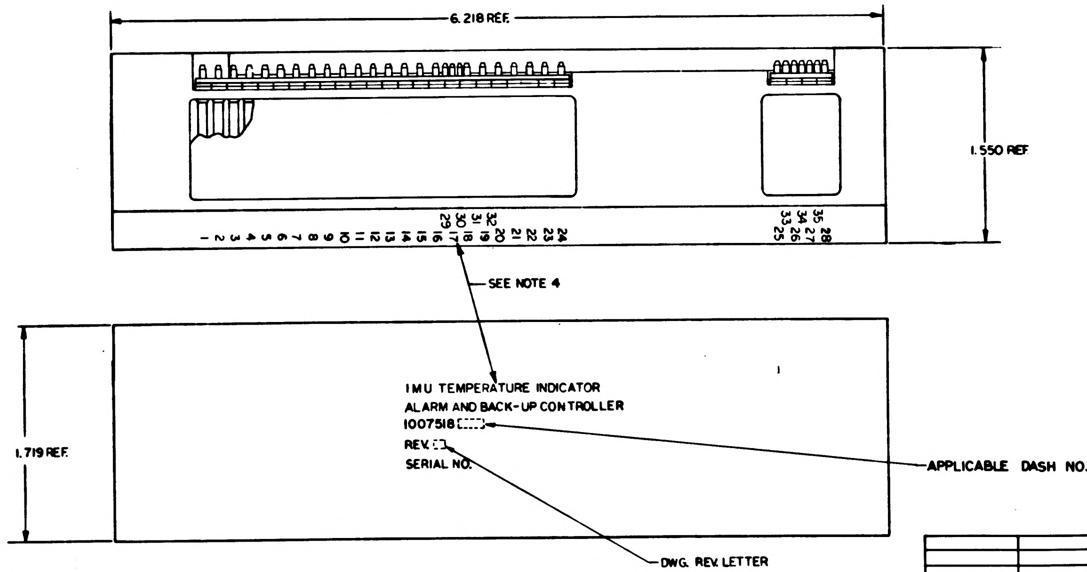

1.560
1.540
K1 REF
K2 REF
37
36 SEE NOTE 23
35
1
30
31
45 SEE NOTE 15
FILL PER ND 1002117
.12
.02
CF2 REF
38 SEE NOTE 20
.000
.015
39 SEE NOTE 20
10
.000
.015
29
34
SEE NOTE 17
.000
.005 SEE NOTE 10


R5
R6
R15
R16
FT8
R19
FT7
FT6
FT10
FT9
R7
R8
CR5 K
CR6 K
R20
CR4
CR7
R21
FT5
R13
FT14
R24
R23
R22
FT12
R14
K CR1
FT13
CR8
CR3 K
R11
R12
R10
FT11
R9
FT3
FT4
R4
R3
R2
R1
R18
FT2
FT1
R17
42
52 SEE NOTE 3
50 SEE NOTE 3
51 SEE NOTE 3

R13				R14		R9 AND R18					
ER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE
113	15	1010377-164	117	1010377-141	71	1010311-126	1000	1010311-177	3400	1010311-228	11500
114	17	-165	119	-142	73	-127	1020	-178	3480	-229	11800
115	19	-166	121	-143	75	-128	1050	-179	3570	-230	12100
116	21	-167	123	-144	77	-129	1070	-180	3650	-231	12400
117	23	-168	125	-145	79	-130	1100	-181	3740	-232	12700
118	25	-169	127	-146	81	-131	1130	-182	3830	-233	13000
119	27	-170	129	-147	83	-132	1150	-183	3920	-234	13300
120	29	-171	131	-148	85	-133	1180	-184	4020	-235	13700
121	31	-172	133	-149	87	-134	1210	-185	4120	-236	14000
122	33	-173	135	-150	89	-135	1240	-186	4220	-237	14300
123	35	-174	137	-151	91	-136	1270	-187	4320	-238	14700
124	37	-175	139	-152	93	-137	1300	-188	4420	-239	15000
125	39	-176	141	-153	95	-138	1330	-189	4530	-240	15400
126	41	-177	143	-154	97	-139	1370	-190	4640	-241	15800
127	43	-178	145	-155	99	-140	1400	-191	4750	-242	16200
128	45	-179	147	-156	101	-141	1430	-192	4870	-243	16500
129	47	-180	149	-157	103	-142	1470	-193	4990	-244	16900
130	49	-181	151	-158	105	-143	1500	-194	5110	-245	17400
131	51	-182	153	-159	107	-144	1540	-195	5230	-246	17800
132	53	-183	155	-160	109	-145	1580	-196	5360	-247	18200
133	55	-184	157	-161	111	-146	1620	-197	5490	-248	18700
134	57	-185	159	-162	113	-147	1650	-198	5620	-249	19100
135	59	-186	161	-163	115	-148	1690	-199	5760	-250	19600
136	61	-187	163	-164	117	-149	1740	-200	5900	-251	20000
137	63	-188	165	-165	119	-150	1780	-201	6040	-252	20500
138	65	-189	167	-166	121	-151	1820	-202	6190	-253	21000
139	67	-190	169	-167	123	-152	1870	-203	6340	-254	21500
140	69	-191	171	-168	125	-153	1910	-204	6490	-255	22100
141	71	-192	173	-169	127	-154	1960	-205	6650	-256	22600
142	73	-193	175	-170	129	-155	2000	-206	6810	-257	23200
143	75	-194	177	-171	131	-156	2050	-207	6980	-258	23700
144	77	-195	179	-172	133	-157	2100	-208	7150	-259	24300
145	79	-196	181	-173	135	-158	2150	-209	7320	-260	24900
146	81	-197	183	-174	137	-159	2210	-210	7500	-261	25500
147	83	-198	185	-175	139	-160	2260	-211	7680	-262	26100
148	85	-199	187	-176	141	-161	2320	-212	7870	-263	26700
149	87	-200	189	-177	143	-162	2370	-213	8060	-264	27400
150	89	-201	191	-178	145	-163	2430	-214	8250	-265	28000
151	91	-202	193	-179	147	-164	2490	-215	8450	-266	28700
152	93	-203	195	-180	149	-165	2550	-216	8660	-267	29400
153	95	-204	197	-181	151	-166	2610	-217	8870	-268	30100
154	97	-205	199	-182	153	-167	2670	-218	9090		
155	99	-206	201	-183	155	-168	2740	-219	9310		
156	101			-184	157	-169	2800	-220	9530		
157	103			-185	159	-170	2870	-221	9760		
158	105			-186	161	-171	2940	-222	10000		
159	107			-187	163	-172	3010	-223	10200		
160	109			-188	165	-173	3090	-224	10500		
161	111			-189	167	-174	3160	-225	10700		
162	113			-190	169	-175	3240	-226	11000		
163	115			-191	171	-176	3320	-227	11300		

TABLE I

CONFIGURATION	~~MATERIAL~~	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	~~ADHESIVE~~	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE / 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	~~ADHESIVE~~	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	~~PRIMER~~	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE


6.218 REF.
1.550 REF
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
29 30 31 32
33 34 35
25 26 27 28
SEE NOTE 4
1.719 REF.
IMU TEMPERATURE INDICATOR
ALARM AND BACK-UP CONTROLLER
1007518
REV.
SERIAL NO.
APPLICABLE DASH NO.
DWG. REV. LETTER

MARKING VIEW
SCALE 2:1

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007577		
APPLICATION		

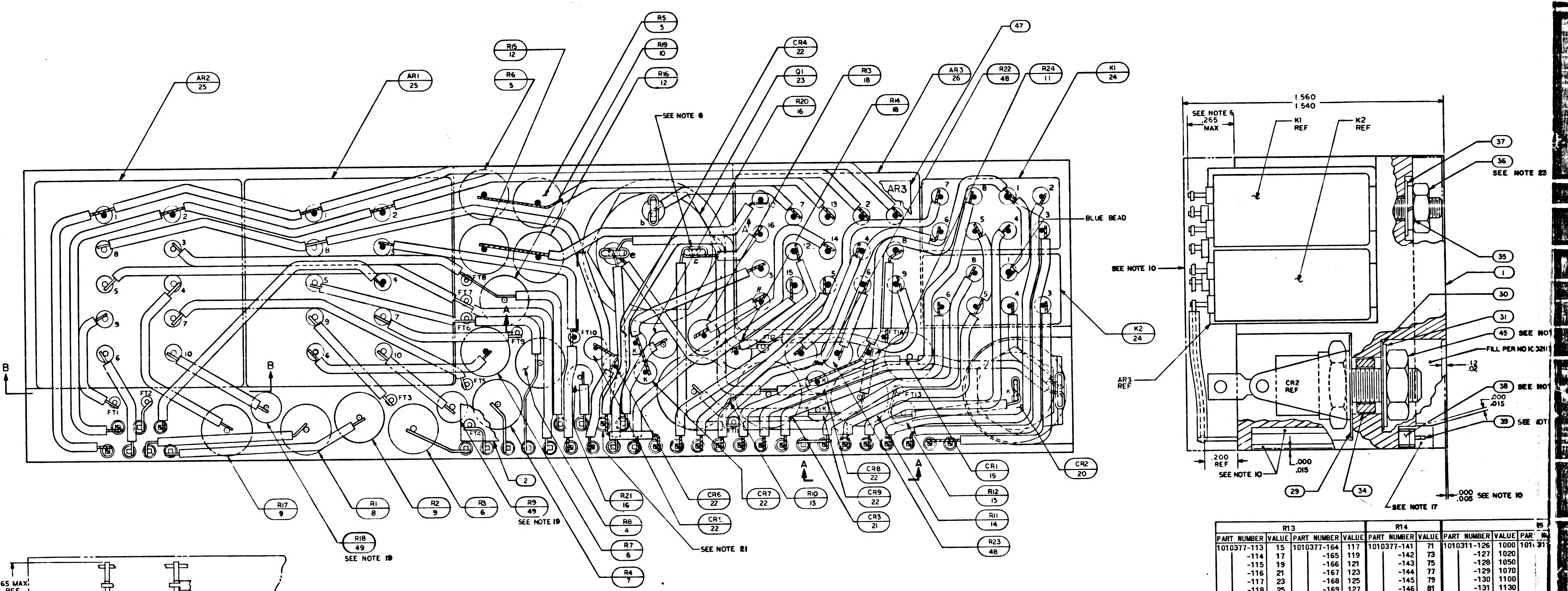
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

QUANTITY REQUIRED

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS
X XX ±.02
.XXX ±.005
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

1007518 REV E

2/1007518


AR2 25
AR1 25
R15 12
R6 5
R5 5
R19 10
R16 12
CR4 22
Q1 23
R20 16
R13 18
R14 18
AR3 26
R22 48
R24 11
K1 24
47
SEE NOTE 6
BLUE BEAD
SEE NOTE 10
K2 24
AR3
FT1
FT2
FT3
FT4
FT5
FT6
FT7
FT8
FT9
FT10
FT12
FT13
FT14
B
A
K
R17 9
R18 49
SEE NOTE 19
R1 8
R2 9
R3 6
R9 49
SEE NOTE 19
2
R21 16
R8 4
R7 6
R4 7
CR6 22
CR5 22
SEE NOTE 21
CR7 22
R10 13
CR8 22
CR9 22
CR3 21
CR1 19
R12 15
R11 14
R23 48
CR2 20
1.560
1.540
SEE NOTE 6
.265 MAX
K1 REF
K2 REF
37
36
SEE NOTE 23
35
1
30
31
45 SEE NOTE
FILL PER ND 10
.12 .02
38 SEE NOTE
.000 .015
39 SEE NOTE
AR3 REF
CR2 REF
.200 REF
SEE NOTE 10
.000 .015
29
34
SEE NOTE 17
.000 .005 SEE NOTE 10

R13				R14				
PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PAR
1010377-113	15	1010377-164	117	1010377-141	71	1010311-126	1000	101 31
-114	17	-165	119	-142	73	-127	1020	
-115	19	-166	121	-143	75	-128	1050	
-116	21	-167	123	-144	77	-129	1070	
-117	23	-168	125	-145	79	-130	1100	
-118	25	-169	127	-146	81	-131	1130	
-119	27	-170	129	-147	83	-132	1150	
-120	29	-171	131	-148	85	-133	1180	
-121	31	-172	133	-149	87	-134	1210	
-122	33	-173	135	-150	89	-135	1240	
-123	35	-174	137	-151	91	-136	1270	
-124	37	-175	139	-152	93	-137	1300	
-125	39	-176	141	-153	95	-138	1330	
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-127	43	-178	145	-155	99	-140	1400	
-128	45	-179	147	-156	101	-141	1430	
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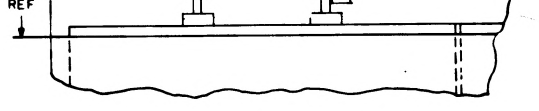
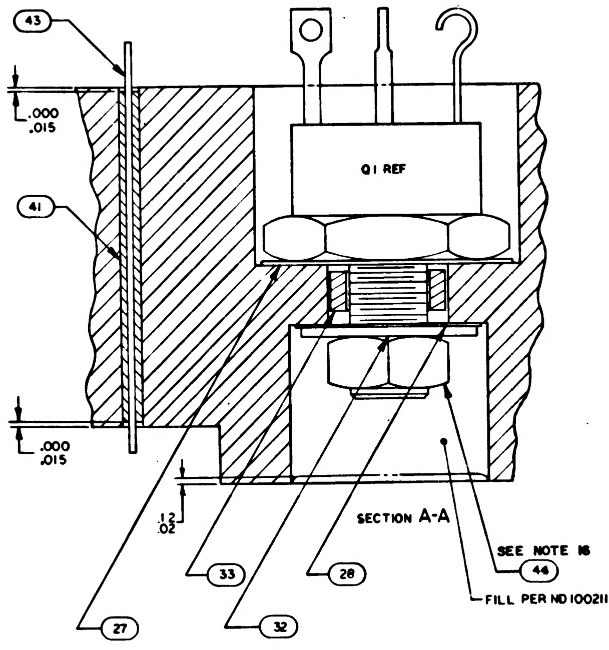
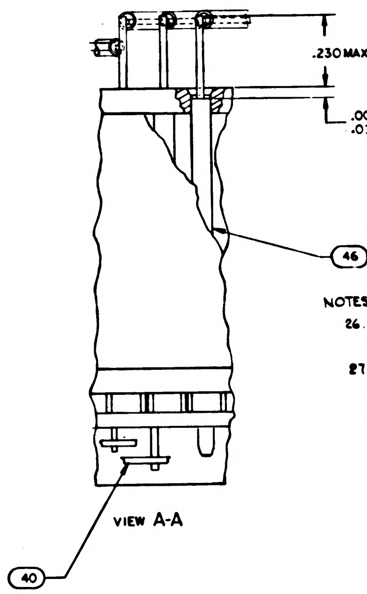
-130	49	-181	151	-158	105	-143	1500	
-131	51	-182	153	-159	107	-144	1540	
-132	53	-183	155	-160	109	-145	1580	
-133	55	-184	157	-161	111	-146	1620	
-134	57	-185	159	-162	113	-147	1650	
-135	59	-186	161	-163	115	-148	1690	
-136	61	-187	163	-164	117	-149	1740	
-137	63	-188	165	-165	119	-150	1780	
-138	65	-189	167	-166	121	-151	1820	
-139	67	-190	169	-167	123	-152	1870	
-140	69	-191	171	-168	125	-153	1910	
-141	71	-192	173	-169	127	-154	1960	
-142	73	-193	175	-170	129	-155	2000	
-143	75	-194	177	-171	131	-156	2050	
-144	77	-195	179	-172	133	-157	2100	
-145	79	-196	181	-173	135	-158	2150	
-146	81	-197	183	-174	137	-159	2210	
-147	83	-198	185	-175	139	-160	2260	
-148	85	-199	187	-176	141	-161	2320	
-149	87	-200	189	-177	143	-162	2370	
-150	89	-201	191	-178	145	-163	2430	
-151	91	-202	193	-179	147	-164	2490	
-152	93	-203	195	-180	149	-165	2550	
-153	95	-204	197	-181	151	-166	2610	
-154	97	-205	199	-182	153	-167	2670	
-155	99	-206	201	-183	155	-168	2740	
-156	101			-184	157	-169	2800	
-157	103			-185	159	-170	2870	
-158	105			-186	161	-171	2940	
-159	107			-187	163	-172	3010	
-160	109			-188	165	-173	3090	
-161	111			-189	167	-174	3160	
-162	113			-190	169	-175	3240	
-163	115			-191	171	-176	3320	



SECTION B-B


43
.000 .015
41
Q1 REF
.000 .015
.12 .02
33
28
SEE NOTE 16
44
FILL PER ND 1002117
27
32

SECTION A-A


.230 MAX. SEE NOTE 7
.000 .030
46
40

VIEW A-A

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. BOND FIND NO. 50,51 & 52 TO FIND NO. 38 PER ND1002237.
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) AND ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. ALL CONNECTIONS MADE BY WELDING TO BE PER ND 1002005.
6. SOLDER PER ND 1002071.
7. CHECKERED INDICATES INTERMEDIATE LEVEL WIRING
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
10. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE. THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
11.
12. PROCURE PER PS 1007162.
13. AR DENOTES AS REQUIRED
14. K DENOTES CATHODE SIDE OF DIODE
15. MOUNTING TORQUE FOR FIND NO. 20 TO BE 10/15 INCH POUNDS
16. MOUNTING TORQUE FOR FIND NO. 23 TO BE 22/26 INCH POUNDS
17. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND
18. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007162 PART TO BE SELECTED FROM CHART.
19. R9 AND R18 TO BE SELECTED AT ASSEMBLY, PART NO. AND DASH NO. AS MARKED ON AMPLIFIER. RANGE OF VALUES (OHMS) SHOWN ON CHART.
20. ASSEMBLE FIND NO. 38 AND 39 PER ND 1002136
21. LEAD FROM AR1-8 TERMINATES AT LOWER WELD CONNECTION OF PIN 30. UPPER LEAD TIES PINS 15 AND 30 TO FT12
22. ALL ELECTRICAL COMPONENTS WHICH ARE NOT STUD MOUNTED AND ALL FEED THRUS TO BE CENTRALIZED AND CEMENTED PER ND 1002009. METHOD H.
23. TORQUE TO 4 ± 1 IN. LB. FOR ASSY OF ITEM 24, 25, AND 26.
24. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS & APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON & ISO PROPYL ALCOHOL. ADHESIVE & COATING MATERIAL PER ND 1002187 TYPE II APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~

NOTES:
26. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
27 EXCEPT FOR HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 19584	11-8-64	[illegible]
B	REVISED PER TDRR 17336	12 MAR 65	GM / EF
C	REVISED PER TDRR 19396	2 JUNE 65	LGC / MEM
D	REVISED PER TDRR 19434	3 JUN 65	[illegible]
E	REVISED PER TDRR 19501	[illegible]	[illegible]
F	REVISED PER TDRR 20143	5 JUN 65	[illegible]

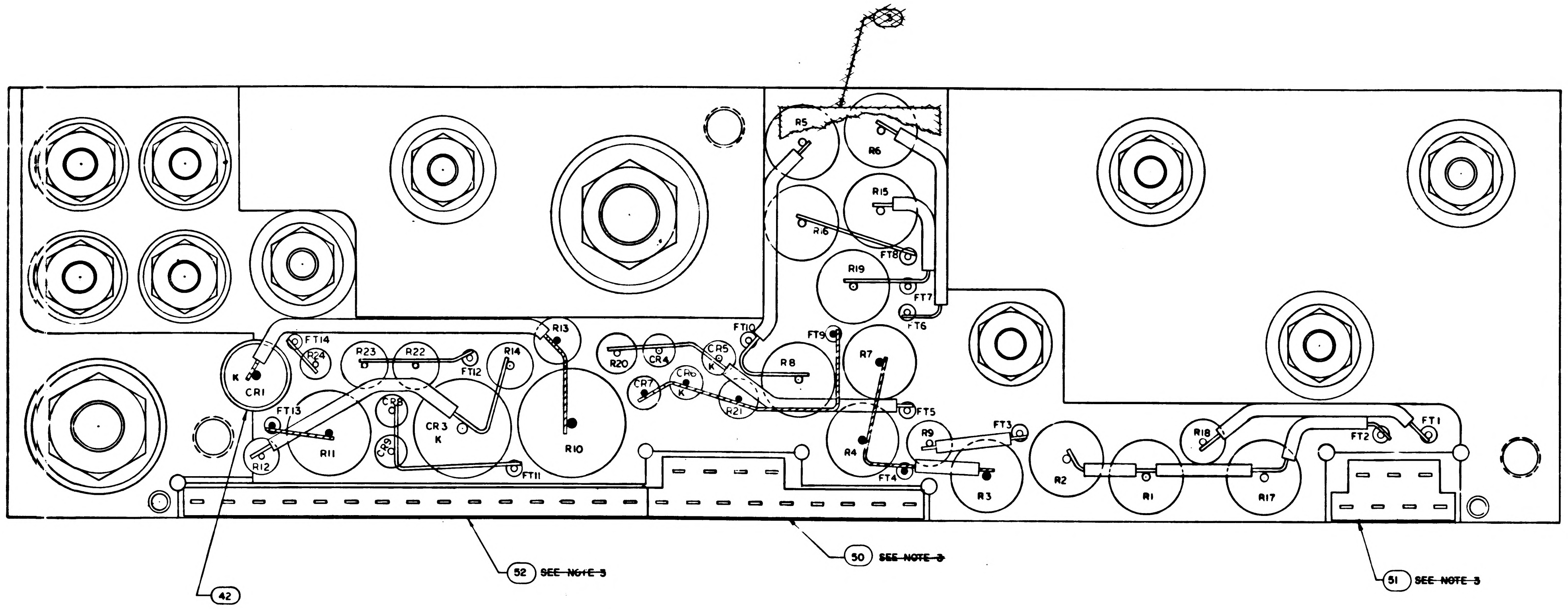
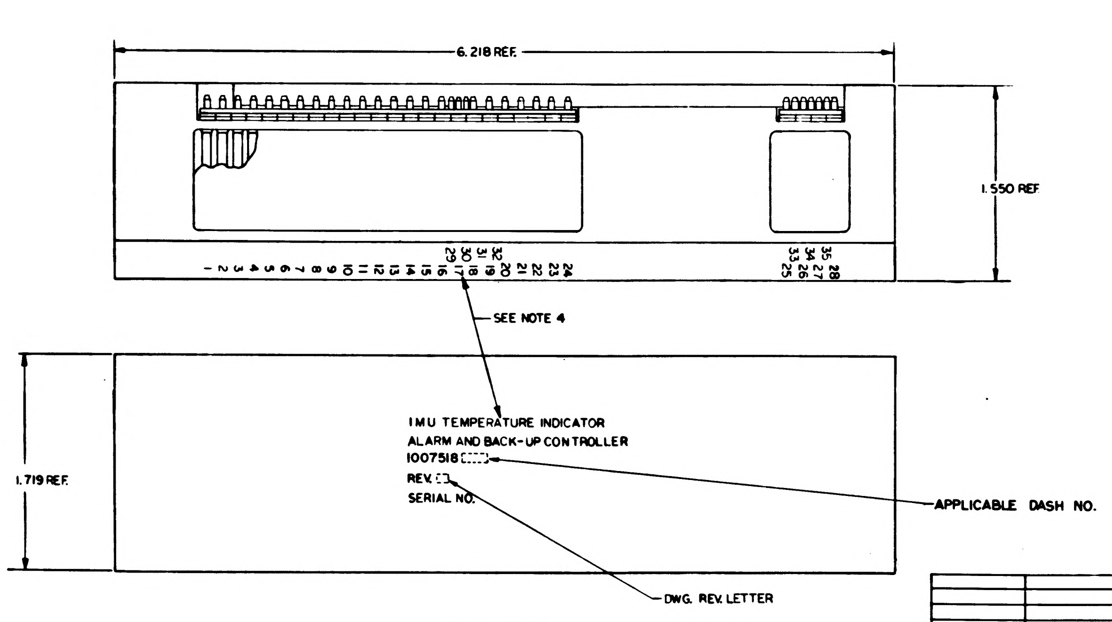

R5
R6
R15
R16
FT8
R19
FT7
FT6
FT14
R24
R23
R22
R14
R13
FT12
CR1
K
FT13
R11
CR9
CR3
K
R12
CR6
R10
FT11
R20
CR4
CR7
CR5
K
CR8
K
R21
FT10
FT9
R8
R7
FT5
R4
FT4
R9
FT3
R3
R2
R1
R18
R17
FT2
FT1
42
52 ~~SEE NOTE 3~~
50 ~~SEE NOTE 3~~
51 ~~SEE NOTE 3~~

TABLE I

CONFIGURATION	~~MATERIAL~~	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	~~ADHESIVE~~	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE / 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	~~ADHESIVE~~	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	~~PRIMER~~	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE


6.218 REF.
1.550 REF
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
29 30 31 32
33 34 35
25 26 27 28
SEE NOTE 4
1.719 REF.
IMU TEMPERATURE INDICATOR
ALARM AND BACK-UP CONTROLLER
1007518
REV.
SERIAL NO.
APPLICABLE DASH NO.
DWG. REV. LETTER

MARKING VIEW
SCALE 2:1

			1		1008540-15	GASKET, CONNECTOR-MINIATURE	52
			X		1010140	SCHEMATIC, ELECTRICAL	
			1		1008545	GASKET, CONNECTOR MINIATURE	51
			1		1008546	GASKET, CONNECTOR MINIATURE	50
			2		1010311- SEE NOTE 19	RESISTOR	49
			2		1010377-237	RESISTOR	48
			1		1008185	INSULATOR TOP, AMPL	47
			AR		1006776-20	INSULATION SLEEVING	46
			1		MS20341-10B	NUT HEX	45
			1		MS20341-416B	NUT HEX	44
			AR		1006757-8	WIRE ELECTRICAL .020 DIA.	43
			AR		MIL-I-23053-8	INSULATION SLEEVING	42
			AR		1006776-21	INSULATION SLEEVING	41
			AR		1006757-1	WIRE ELECT. .010 X .020	40
			35		1006782-5	CONTACT WRAPOST MALE	39
			35		1006775	INSULATOR WRAPOST MALE	38
			10		1008070-5	WASHER, FLAT	37
			10		MS20341-4A	NUT-HEX	36
			10		MS35338-78	WASHER, LOCK	35
			1		1008021-1	BUSHING INSULATOR	34
			1		1008021-2	BUSHING INSULATOR	33
			1		1008020-2	WASHER FLAT	32
			1		1008020-1	WASHER FLAT	31
			1		1008024-1	WASHER INSULATOR	30
			1		1008024-2	WASHER INSULATOR	29
			1		1008024-4	WASHER INSULATOR	28
			1		1008024-3	WASHER INSULATOR	27
			1		1018900-011	AMPLIFIER	26
			2		1000284	AMPLIFIER	25
			2		1010353-1	RELAY	24
			1		1010273-1	TRANSISTOR	23
			6		1010362-3	DIODE	22
			1		1010441-2	DIODE	21
			1		1010331-20	DIODE	20
			1		1010440-1	DIODE	19
			X		1010377 SEE NOTE 18	RESISTOR	18
							17
			2		1010364-368	RESISTOR	16
			1		1010364-44	RESISTOR	15
			1		1010361-112	RESISTOR	14
			1		1010452-167	RESISTOR	13
			1		1010450-9	RESISTOR	12
			1		1010604-22	RESISTOR	11
			1		1010450-10	RESISTOR	10
			2		1010450-12	RESISTOR	9
			1		1010450-13	RESISTOR	8
			1		1010450-14	RESISTOR	7
			2		1010450-3	RESISTOR	6
			2		1010450-2	RESISTOR	5
			1		1010450-11	RESISTOR	4
			~~1~~		~~1008074~~	~~INSULATOR BOTTOM~~	3
			1		1008186	INSULATOR TOP	2
			1		1007072	HEAT SINK	1
			011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
QUANTITY REQUIRED					LIST OF MATERIALS		

1007518 F

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007577		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS X
DECIMALS .XX ± .02 .XXX ± .005
ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
Contract NAS 9-497
DRAWN S Agne DATE 1 SEP 64
CHECKED A Udond 4 SEP 64
APPROVAL
APPROVAL D. B. Test 10/5/64
NASA APPROVAL 10-6-64
MIT APPROVAL W Kupfer 6 Oct 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

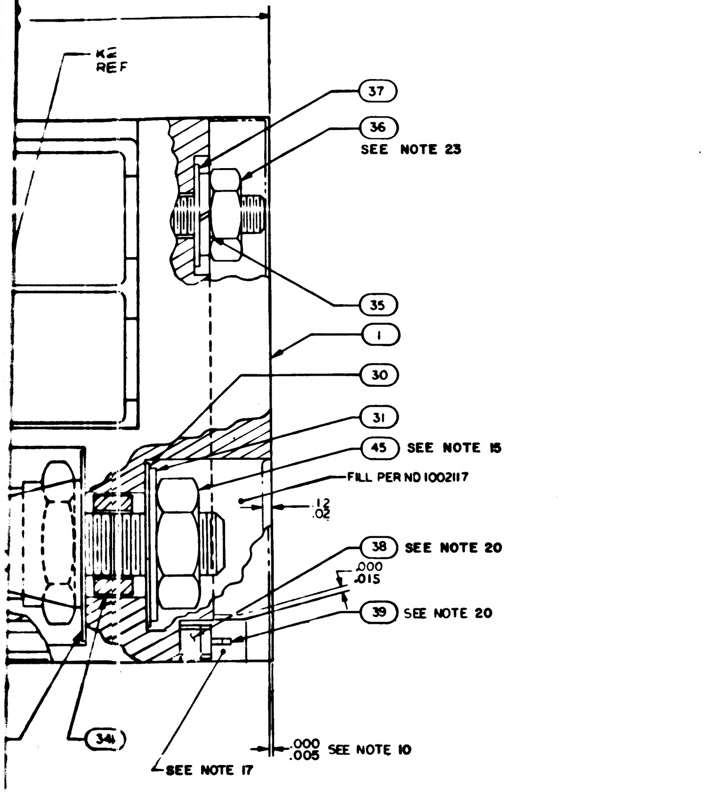
IMU TEMP INDICATOR ALARM AND BACK-UP CONTROLLER ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007518
SCALE 5:1
WT
SHEET 1 OF 1

3#

1007518 REV F

3/1007518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SEE NOTE 23
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SEE NOTE 15
FILL PER ND 1002117
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SEE NOTE 20
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SEE NOTE 20
34
SEE NOTE 17
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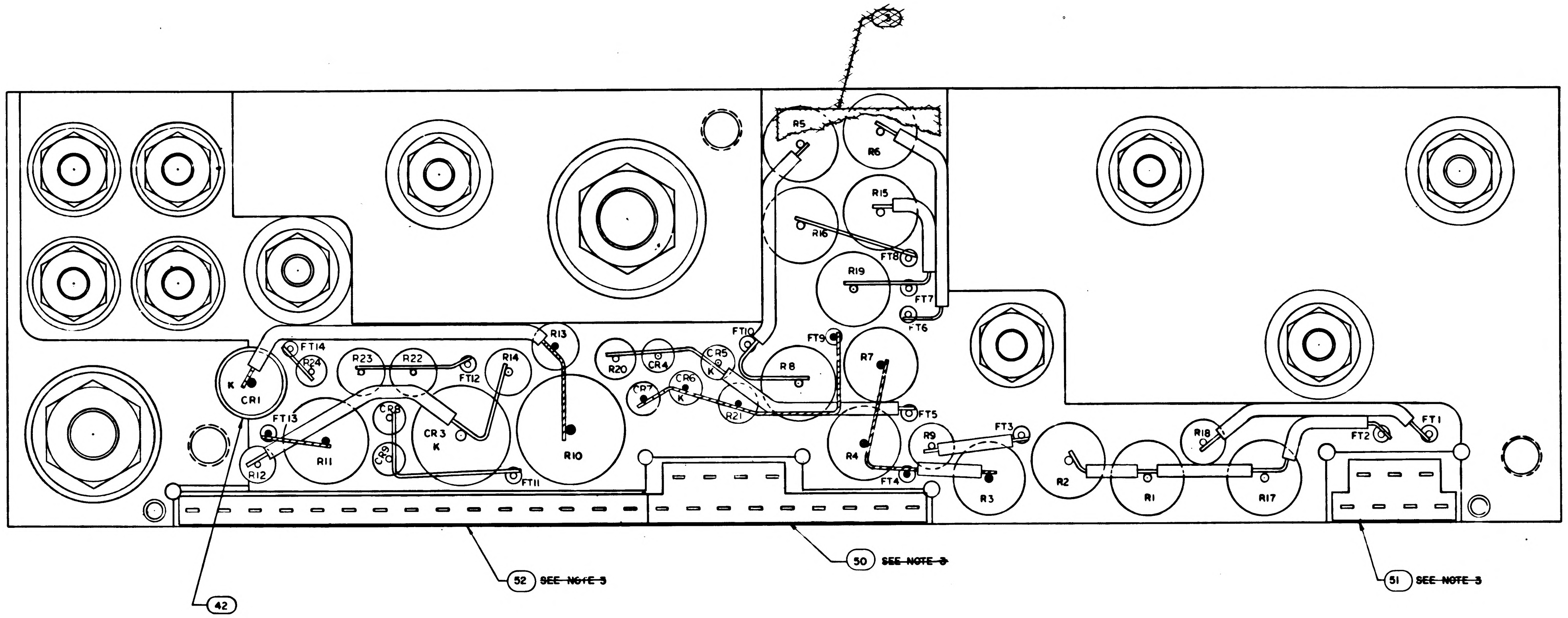
.005
SEE NOTE 10


R5
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R12
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R18
R17
FT2
FT1
52
~~SEE NOTE 3~~
50
~~SEE NOTE 3~~
51
~~SEE NOTE 3~~
42

		R14		R9 AND R18					
NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE
377-164	117	1010377-141	71	1010311-126	1000	1010311-177	3400	1010311-228	11500
-165	119	-142	73	-127	1020	-178	3480	-229	11800
-166	121	-143	75	-128	1050	-179	3570	-230	12100
-167	123	-144	77	-129	1070	-180	3650	-231	12400
-168	125	-145	79	-130	1100	-181	3740	-232	12700
-169	127	-146	81	-131	1130	-182	3830	-233	13000
-170	129	-147	83	-132	1150	-183	3920	-234	13300
-171	131	-148	85	-133	1180	-184	4020	-235	13700
-172	133	-149	87	-134	1210	-185	4120	-236	14000
-173	135	-150	89	-135	1240	-186	4220	-237	14300
-174	137	-151	91	-136	1270	-187	4320	-238	14700
-175	139	-152	93	-137	1300	-188	4420	-239	15000
-176	141	-153	95	-138	1330	-189	4530	-240	15400
-177	143	-154	97	-139	1370	-190	4640	-241	15800
-178	145	-155	99	-140	1400	-191	4750	-242	16200
-179	147	-156	101	-141	1430	-192	4870	-243	16500
-180	149	-157	103	-142	1470	-193	4990	-244	16900
-181	151	-158	105	-143	1500	-194	5110	-245	17400
-182	153	-159	107	-144	1540	-195	5230	-246	17800
-183	155	-160	109	-145	1580	-196	5360	-247	18200
-184	157	-161	111	-146	1620	-197	5490	-248	18700
-185	159	-162	113	-147	1650	-198	5620	-249	19100
-186	161	-163	115	-148	1690	-199	5760	-250	19600
-187	163	-164	117	-149	1740	-200	5900	-251	20000
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-191	171	-168	125	-153	1910	-204	6490	-255	22100
-192	173	-169	127	-154	1960	-205	6650	-256	22600
-193	175	-170	129	-155	2000	-206	6810	-257	23200
-194	177	-171	131	-156	2050	-207	6980	-258	23700
-195	179	-172	133	-157	2100	-208	7150	-259	24300
-196	181	-173	135	-158	2150	-209	7320	-260	24900
-197	183	-174	137	-159	2210	-210	7500	-261	25500
-198	185	-175	139	-160	2260	-211	7680	-262	26100
-199	187	-176	141	-161	2320	-212	7870	-263	26700
-200	189	-177	143	-162	2370	-213	8060	-264	27400
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-205	199	-182	153	-167	2670	-218	9090		
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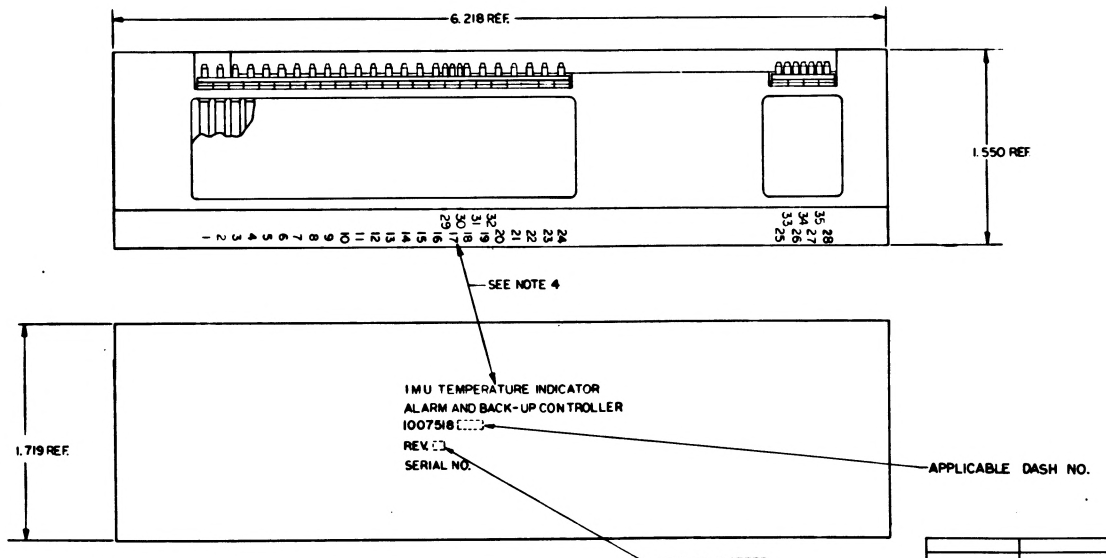
		-184	157	-169	2800	-220	9530		
		-185	159	-170	2870	-221	9760		
		-186	161	-171	2940	-222	10000		
		-187	163	-172	3010	-223	10200		
		-188	165	-173	3090	-224	10500		
		-189	167	-174	3160	-225	10700		
		-190	169	-175	3240	-226	11000		
		-191	171	-176	3320	-227	11300		

TABLE I

CONFIGURATION	~~MATERIAL~~	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	~~ADHESIVE~~	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE, 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	~~ADHESIVE~~	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	~~PRIMER~~	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE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1.550 REF.
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29 30 31 32
25 26 27 28
33 34 35
SEE NOTE 4
1.719 REF.
IMU TEMPERATURE INDICATOR
ALARM AND BACK-UP CONTROLLER
1007518
REV.
SERIAL NO.
APPLICABLE DASH NO.
DWG. REV. LETTER

MARKING VIEW
SCALE 2:1

			1		1006
			╳		1010
			1		1008
			1		100
			2		101
			2		1010
			1		1008
			AR		1006
			1		MS2
			1		MS2
			AR		100
			AR		M
			AR		100
			AR		100
			35		100
			35		100
			10		100
			10		MS2
			10		MS3
			1		100
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			011	SPEC-ITY	
QUANTITY REQUIRED					

1007577		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

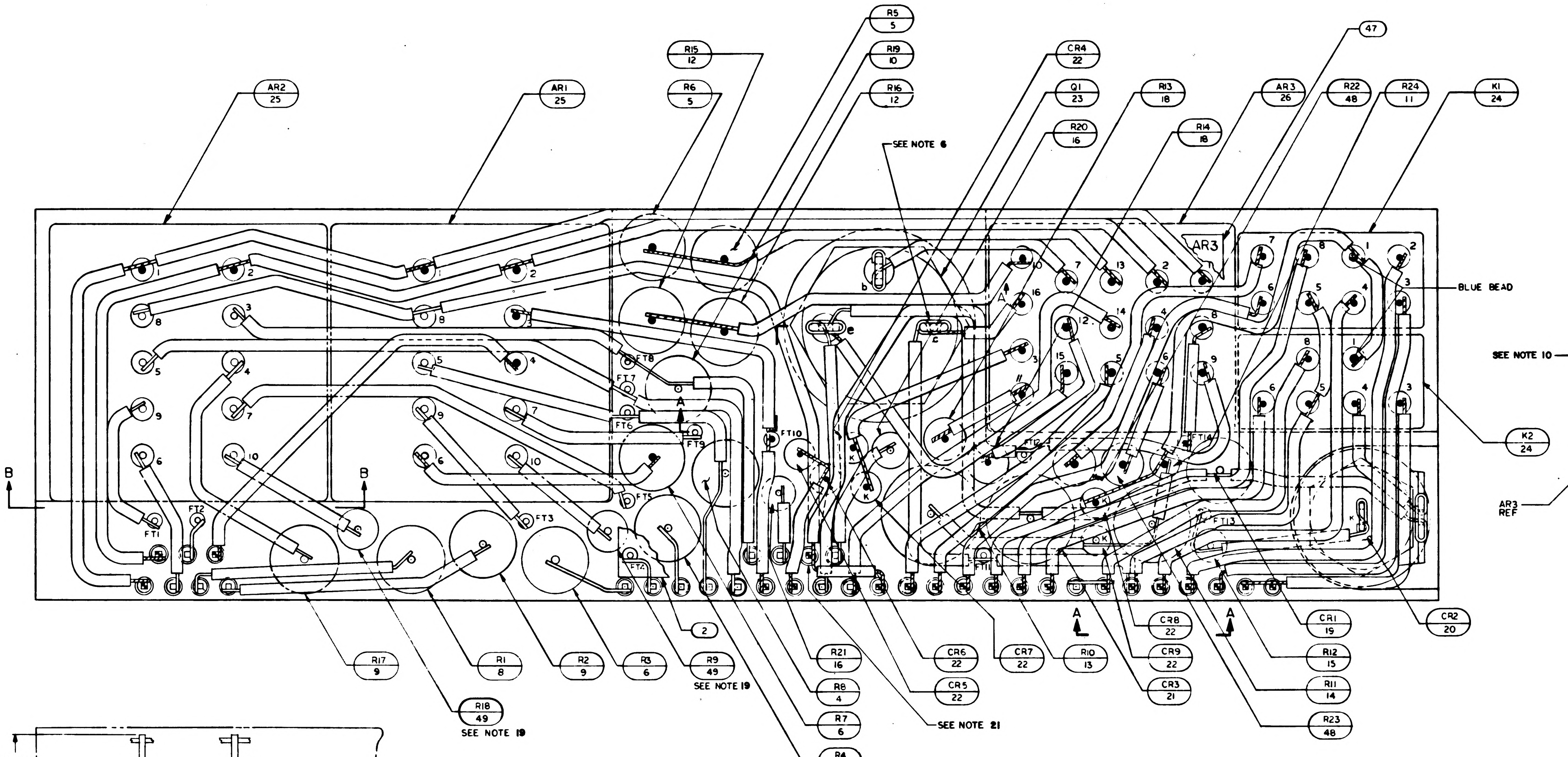
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS X
DECIMALS XX ± .02 .XXX ± .005
ANGLES
DO NOT SCALE THIS DRAWING

MATERIAL

HEAT TREATMENT

FINAL FINISH

DRAWN
CHECKED
APPROVAL
APPROVAL
NASA APPR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AR2
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CR4
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Q1
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R20
16
R13
18
R14
18
47
AR3
26
R22
48
R24
11
K1
24
SEE NOTE 6
AR3
BLUE BEAD
K2
24
B
B
A
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CR8
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CR9
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CR3
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R10
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CR7
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CR6
22
CR5
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SEE NOTE 21
R21
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R8
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R18
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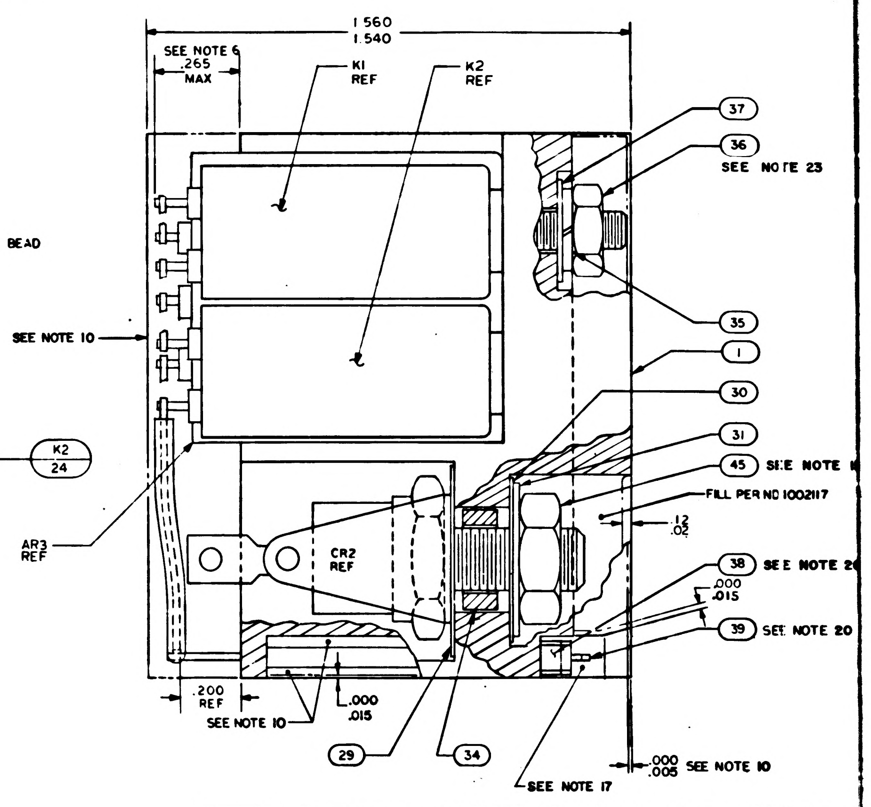
SEE NOTE 19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MAX
K1
REF
K2
REF
37
36
SEE NOTE 23
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SEE NOTE 10
1
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31
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SEE NOTE 16
FILL PER ND 1002117
.12
.02
38
SEE NOTE 20
.000
.015
39
SEE NOTE 20
AR3
REF
CR2
REF
.200
REF
SEE NOTE 10
.000
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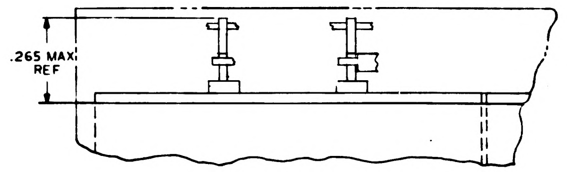
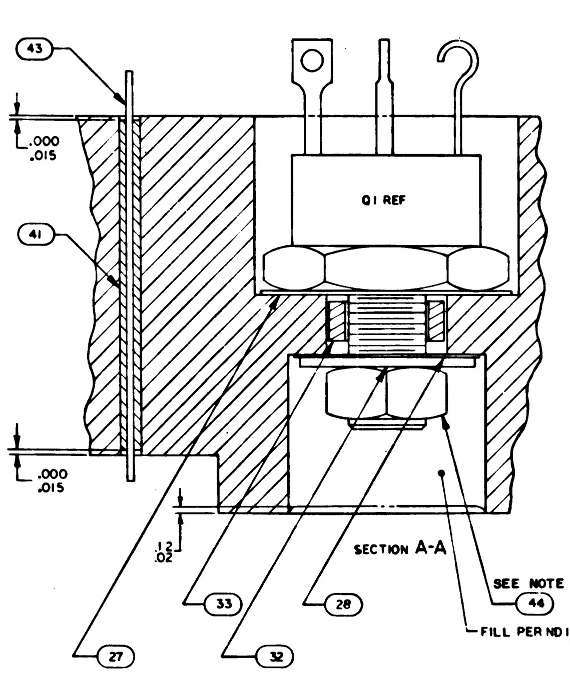
SEE NOTE 17
.000
.005
SEE NOTE 10



SECTION B-B

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. ~~BOND FIND NO. 50,51 & 52 TO FIND NO. 38 PER ND 1002237~~.
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) AND ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. ALL CONNECTIONS MADE BY WELDING TO BE PER ND 1002005.
6. SOLDER PER ND 1002071.
7. CHECKERED INDICATES INTERMEDIATE LEVEL WIRING
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
10. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE. THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
11.
12. PROCURE PER PS 1007162.
13. AR DENOTES AS REQUIRED
14. K DENOTES CATHODE SIDE OF DIODE
15. MOUNTING TORQUE FOR FIND NO. 20 TO BE 10/15 INCH POUNDS
16. MOUNTING TORQUE FOR FIND NO. 23 TO BE 22/26 INCH POUNDS
17. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND
18. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007162 PART TO BE SELECTED FROM CHART.
19. R9 AND R18 TO BE SELECTED AT ASSEMBLY, PART NO. AND DASH NO. AS MARKED ON AMPLIFIER. RANGE OF VALUES (OHMS) SHOWN ON CHART.
20. ASSEMBLE FIND NO. 38 AND 39 PER ND 1002136
21. LEAD FROM AR1-8 TERMINATES AT LOWER WELD CONNECTION OF PIN 30. UPPER LEAD TIES PINS 15 AND 30 TO FT12
22. ALL ELECTRICAL COMPONENTS WHICH ARE NOT STUD MOUNTED AND ALL FEED THRUS TO BE CENTRALIZED AND CEMENTED PER ND 1002009. METHOD H.
23. TORQUE TO 4 ± 1 IN. LB. FOR ASSY OF ITEM 24, 25, AND 26.
24. ~~BOND A .25 MIN WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS & APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON & ISO-PROPYL ALCOHOL. ADHESIVE & COATING MATERIAL PER ND 1002187 TYPE II APPLY MATERIAL AND COATING AS INDICATED IN TABLE I~~.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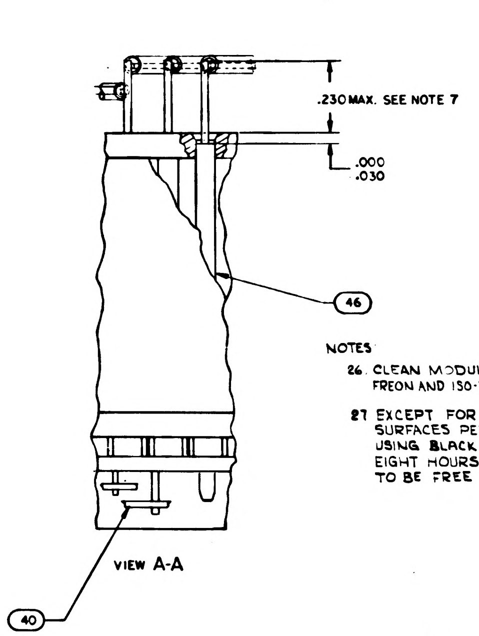
SEE NOTE 16
44
FILL PER ND 1002117

SECTION A-A


.230 MAX. SEE NOTE 7
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VIEW A-A

NOTES

26. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

27. EXCEPT FOR HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

R13				R14		R9 AND R		
PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER
1010377-113	15	1010377-164	117	1010377-141	71	1010311-126	1000	10 0311-177
-114	17	-165	119	-142	73	-127	1020	-178
-115	19	-166	121	-143	75	-128	1050	-179
-116	21	-167	123	-144	77	-129	1070	-180
-117	23	-168	125	-145	79	-130	1100	-181
-118	25	-169	127	-146	81	-131	1130	-182
-119	27	-170	129	-147	83	-132	1150	-183
-120	29	-171	131	-148	85	-133	1180	-184
-121	31	-172	133	-149	87	-134	1210	-185
-122	33	-173	135	-150	89	-135	1240	-186
-123	35	-174	137	-151	91	-136	1270	-187
-124	37	-175	139	-152	93	-137	1300	-188
-125	39	-176	141	-153	95	-138	1330	-189
-126	41	-177	143	-154	97	-139	1370	-190
-127	43	-178	145	-155	99	-140	1400	-191
-128	45	-179	147	-156	101	-141	1430	-192
-129	47	-180	149	-157	103	-142	1470	-193
-130	49	-181	151	-158	105	-143	1500	-194
-131	51	-182	153	-159	107	-144	1540	-195
-132	53	-183	155	-160	109	-145	1580	-196
-133	55	-184	157	-161	111	-146	1620	-197
-134	57	-185	159	-162	113	-147	1650	-198
-135	59	-186	161	-163	115	-148	1690	-199
-136	61	-187	163	-164	117	-149	1740	-200
-137	63	-188	165	-165	119	-150	1780	-201
-138	65	-189	167	-166	121	-151	1820	-202
-139	67	-190	169	-167	123	-152	1870	-203
-140	69	-191	171	-168	125	-153	1910	-204
-141	71	-192	173	-169	127	-154	1960	-205
-142	73	-193	175	-170	129	-155	2000	-206
-143	75	-194	177	-171	131	-156	2050	-207
-144	77	-195	179	-172	133	-157	2100	-208
-145	79	-196	181	-173	135	-158	2150	-209
-146	81	-197	183	-174	137	-159	2210	-210
-147	83	-198	185	-175	139	-160	2260	-211
-148	85	-199	187	-176	141	-161	2320	-212
-149	87	-200	189	-177	143	-162	2370	-213
-150	89	-201	191	-178	145	-163	2430	-214
-151	91	-202	193	-179	147	-164	2490	-215
-152	93	-203	195	-180	149	-165	2550	-216
-153	95	-204	197	-181	151	-166	2610	-21
-154	97	-205	199	-182	153	-167	2670	-21
-155	99	-206	201	-183	155	-168	2740	-21
-156	101			-184	157	-169	2800	-22
-157	103			-185	159	-170	2870	-22
-158	105			-186	161	-171	2940	-222
-159	107			-187	163	-172	3010	-22
-160	109			-188	165	-173	3090	-224
-161	111			-189	167	-174	3160	-22
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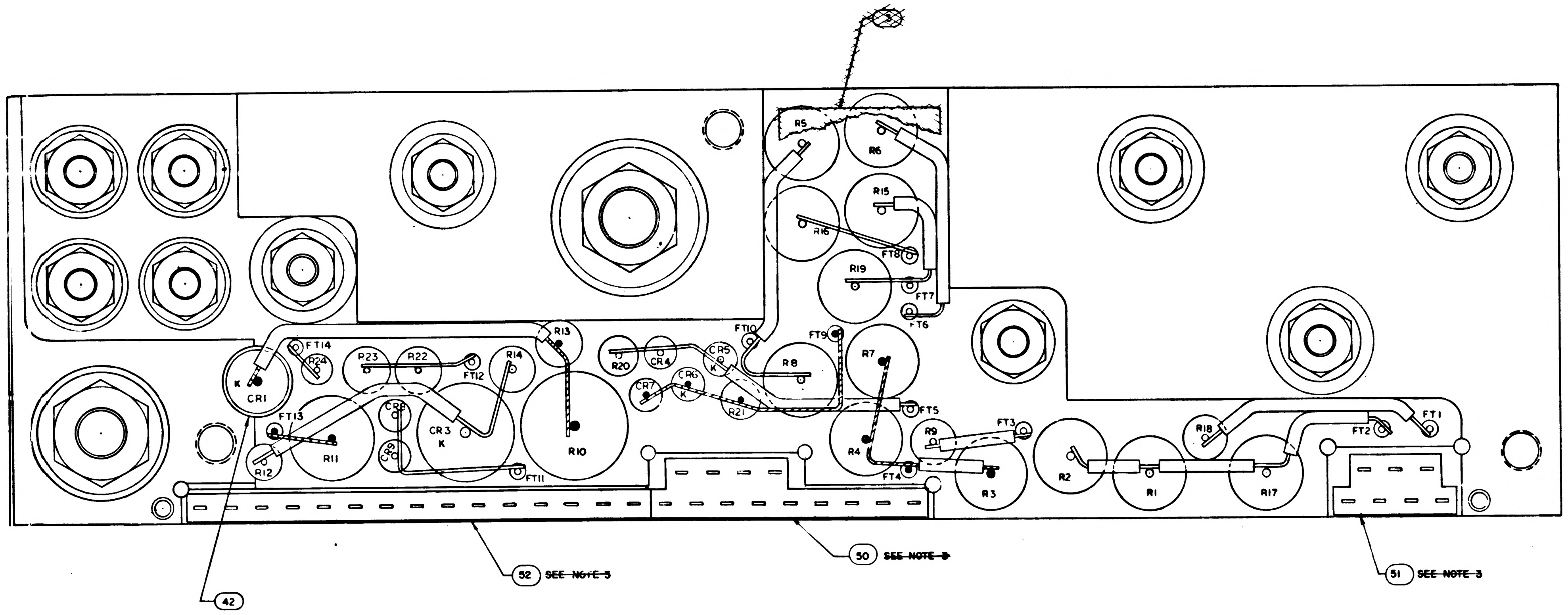
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 9584	[illegible]	[illegible]
B	REVISED PER TDRR 17336	12 MAR 65	GM EF
C	REVISED PER TDRR 9396	2 JUNE 65	[illegible]
D	REVISED PER TDRR 19434	3 JUN 65	[illegible]
E	REVISED PER TDRR 9501	[illegible]	[illegible]
F	REVISED PER TDRR 20143	3 JUN 65	[illegible]
G	REVISED PER TDRR 20718	[illegible] 65	[illegible]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CR6
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CR7
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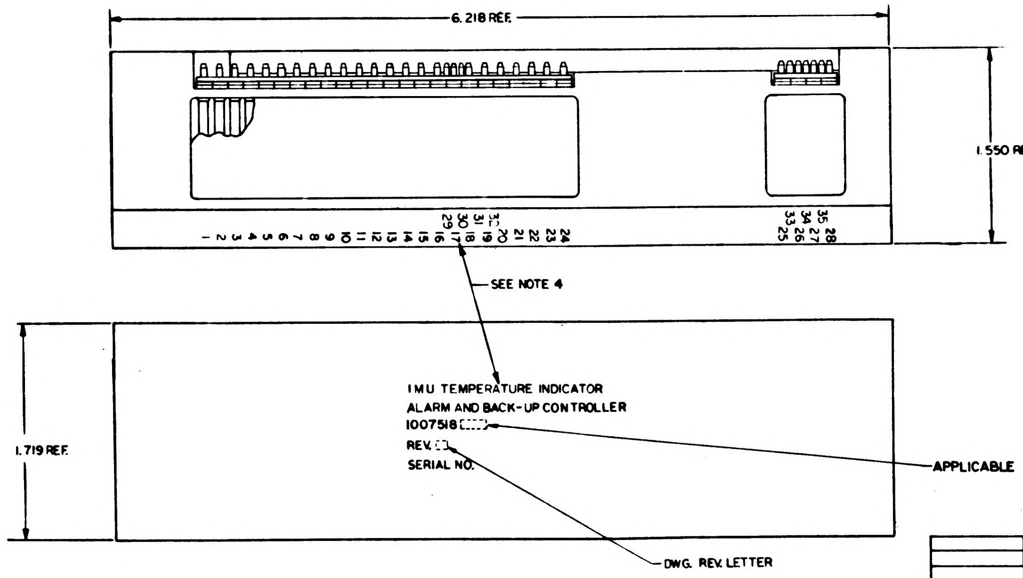
42
52 ~~SEE NOTE 3~~
50 ~~SEE NOTE 3~~
51 ~~SEE NOTE 3~~

TABLE I

CONFIGURATION	~~MATERIAL~~	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	~~ADHESIVE~~	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE / 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	~~ADHESIVE~~	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	~~PRIMER~~	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE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1.550 REF
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
29 30 31 32
25 26 27 28
33 34 35
SEE NOTE 4
1.719 REF.
IMU TEMPERATURE INDICATOR
ALARM AND BACK-UP CONTROLLER
1007518
REV.
SERIAL NO.
APPLICABLE DASH NO.
DWG. REV. LETTER

MARKING VIEW
SCALE 2:1

QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		021	011				
		1	–		1018900-021	AMPLIFIER	53
		1	1		1008540-15	GASKET, CONNECTOR-MINIATURE	52
		X	X		1010140	SCHEMATIC, ELECTRICAL	
		1	1		1008545	GASKET, CONNECTOR MINIATURE	51
		1	1		1008546	GASKET, CONNECTOR MINIATURE	50
		2	2		1010311- SEE NOTE 19	RESISTOR	49
		2	2		1010377-237	RESISTOR	48
		1	1		1008185	INSULATOR TOP, AMPL	47
		AR	AR		1006776-20	INSULATION SLEEVING	46
		1	1		MS20341-10B	NUT HEX	45
		1	1		MS20341-416B	NUT HEX	44
		AR	AR		1006757-8	WIRE ELECTRICAL .020 DIA.	43
		AR	AR		MIL-I-23053-8	INSULATION SLEEVING	42
		AR	AR		1006776-21	INSULATION SLEEVING	41
		AR	AR		1006757-1	WIRE ELECT. .010 X .020	40
		35	35		1006782-5	CONTACT WRAPOST MALE	39
		35	35		1006775	INSULATOR WRAPOST MALE	38
		10	10		1008070-5	WASHER, FLAT	37
		10	10		MS20341-4A	NUT-HEX	36
		10	10		MS35338-78	WASHER, LOCK	35
		1	1		1008021-1	BUSHING INSULATOR	34
		1	1		1008021-2	BUSHING INSULATOR	33
		1	1		1008020-2	WASHER FLAT	32
		1	1		1008020-1	WASHER FLAT	31
		1	1		1008024-1	WASHER INSULATOR	30
		1	1		1008024-2	WASHER INSULATOR	29
		1	1		1008024-4	WASHER INSULATOR	28
		1	1		1008024-3	WASHER INSULATOR	27
		–	1		1018900-011	AMPLIFIER	26
		2	2		1000284-011	AMPLIFIER	25
		2	2		1010353-1	RELAY	24
		1	1		1010273-1	TRANSISTOR	23
		6	6		1010362-3	DIODE	22
		1	1		1010441-2	DIODE	21
		1	1		1010331-20	DIODE	20
		1	1		1010440-1	DIODE	19
		X	X		1010377 SEE NOTE 18	RESISTOR	18
							17
		2	2		1010364-368	RESISTOR	16
		1	1		1010364-44	RESISTOR	15
		1	1		1010361-112	RESISTOR	14
		1	1		1010452-167	RESISTOR	13
		1	1		1010450-9	RESISTOR	12
		1	1		1010604-22	RESISTOR	11
		1	1		1010450-10	RESISTOR	10
		2	2		1010450-12	RESISTOR	9
		1	1		1010450-13	RESISTOR	8
		1	1		1010450-14	RESISTOR	7
		2	2		1010450-3	RESISTOR	6
		2	2		1010450-2	RESISTOR	5
		1	1		1010450-11	RESISTOR	4
		–	~~1~~		~~1000074~~	~~INSULATOR BOTTOM~~	3
		1	1		1008186	INSULATOR TOP	2
		1	1		1007072	HEAT SINK	1

LIST OF MATERIALS

1007518 G

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007577		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS X
DECIMALS .XX ± .02 .XXX ± .005
ANGLES ± 1°
DO NOT SCALE THIS DRAWING

MATERIAL

HEAT TREATMENT

FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DWG NO

DRAWN S Agne DATE 1 SEP 64
CHECKED W Udond 4 SEP 64
APPROVAL
APPROVAL 10/5/64
NASA APPROVAL
MIT APPROVAL 6 Oct 64

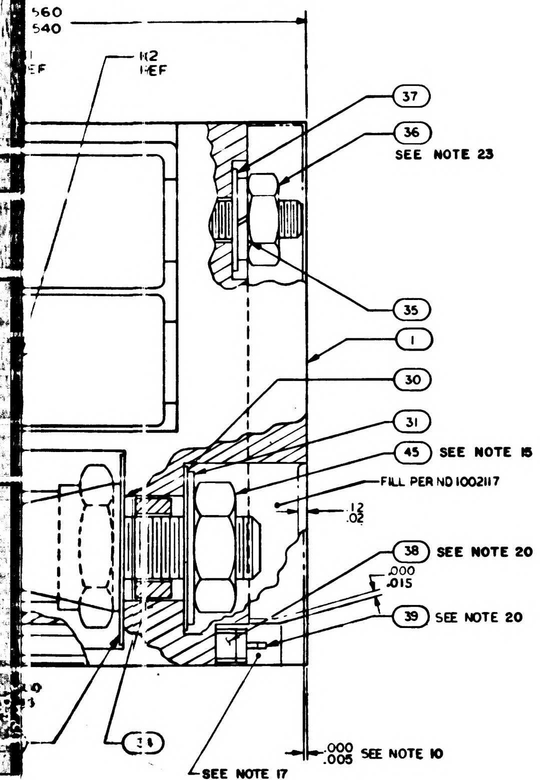
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

IMU TEMP INDICATOR ALARM AND BACK-UP CONTROLLER ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO 1007518
SCALE 5:1
WT
SHEET 1 OF 1

1007518 REV G

1007518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SEE NOTE 23
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SEE NOTE 15
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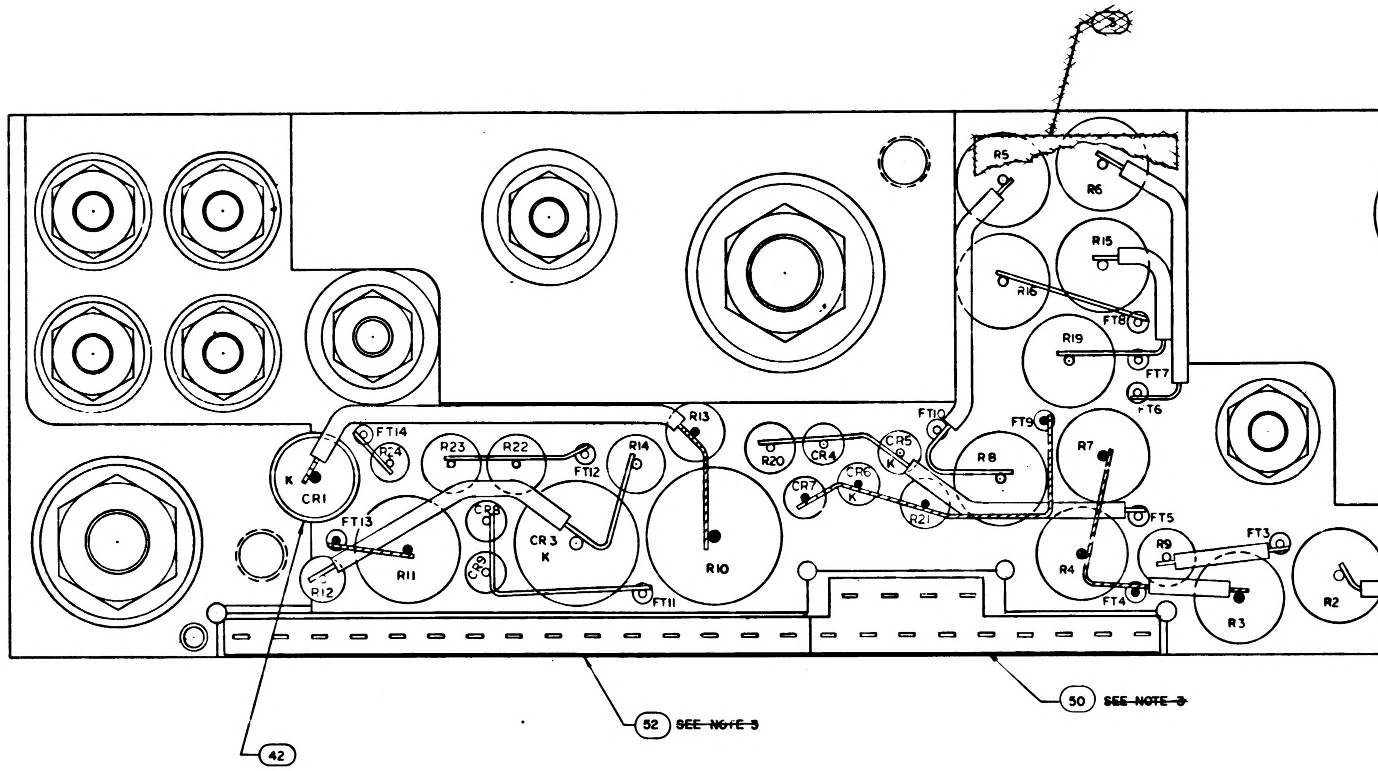
.02
38
SEE NOTE 20
.000
.015
39
SEE NOTE 20
SEE NOTE 17
.000
.005
SEE NOTE 10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R6
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R16
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R13
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FT11
R20
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CR7
CR6
K
CR5
K
R21
R9
FT3
R4
FT4
R3
R2
R1
R18
FT2
FT1
R17
52
~~SEE NOTE 3~~
50
~~SEE NOTE 3~~
51
~~SEE NOTE 3~~
42

		R14		R9 AND R18					
NUMBER	VALU	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE
0377-164	117	1010377-141	71	1010311-126	1000	1010311-177	3400	1010311-228	11500
-165	119	-142	73	-127	1020	-178	3480	-229	11800
-166	121	-143	75	-128	1050	-179	3570	-230	12100
-167	123	-144	77	-129	1070	-180	3650	-231	12400
-168	125	-145	79	-130	1100	-181	3740	-232	12700
-169	127	-146	81	-131	1130	-182	3830	-233	13000
-170	129	-147	83	-132	1150	-183	3920	-234	13300
-171	131	-148	85	-133	1180	-184	4020	-235	13700
-172	133	-149	87	-134	1210	-185	4120	-236	14000
-173	135	-150	89	-135	1240	-186	4220	-237	14300
-174	137	-151	91	-136	1270	-187	4320	-238	14700
-175	139	-152	93	-137	1300	-188	4420	-239	15000
-176	141	-153	95	-138	1330	-189	4530	-240	15400
-177	143	-154	97	-139	1370	-190	4640	-241	15800
-178	145	-155	99	-140	1400	-191	4750	-242	16200
-179	147	-156	101	-141	1430	-192	4870	-243	16500
-180	149	-157	103	-142	1470	-193	4990	-244	16900
-181	151	-158	105	-143	1500	-194	5110	-245	17400
-182	153	-159	107	-144	1540	-195	5230	-246	17800
-183	155	-160	109	-145	1580	-196	5360	-247	18200
-184	157	-161	111	-146	1620	-197	5490	-248	18700
-185	159	-162	113	-147	1650	-198	5620	-249	19100
-186	161	-163	115	-148	1690	-199	5760	-250	19600
-187	163	-164	117	-149	1740	-200	5900	-251	20000
-188	165	-165	119	-150	1780	-201	6040	-252	20500
-189	167	-166	121	-151	1820	-202	6190	-253	21000
-190	169	-167	123	-152	1870	-203	6340	-254	21500
-191	171	-168	125	-153	1910	-204	6490	-255	22100
-192	173	-169	127	-154	1960	-205	6650	-256	22600
-193	175	-170	129	-155	2000	-206	6810	-257	23200
-194	177	-171	131	-156	2050	-207	6980	-258	23700
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-197	183	-174	137	-159	2210	-210	7500	-261	25500
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-199	187	-176	141	-161	2320	-212	7870	-263	26700
-200	189	-177	143	-162	2370	-213	8060	-264	27400
-201	191	-178	145	-163	2430	-214	8250	-265	28000
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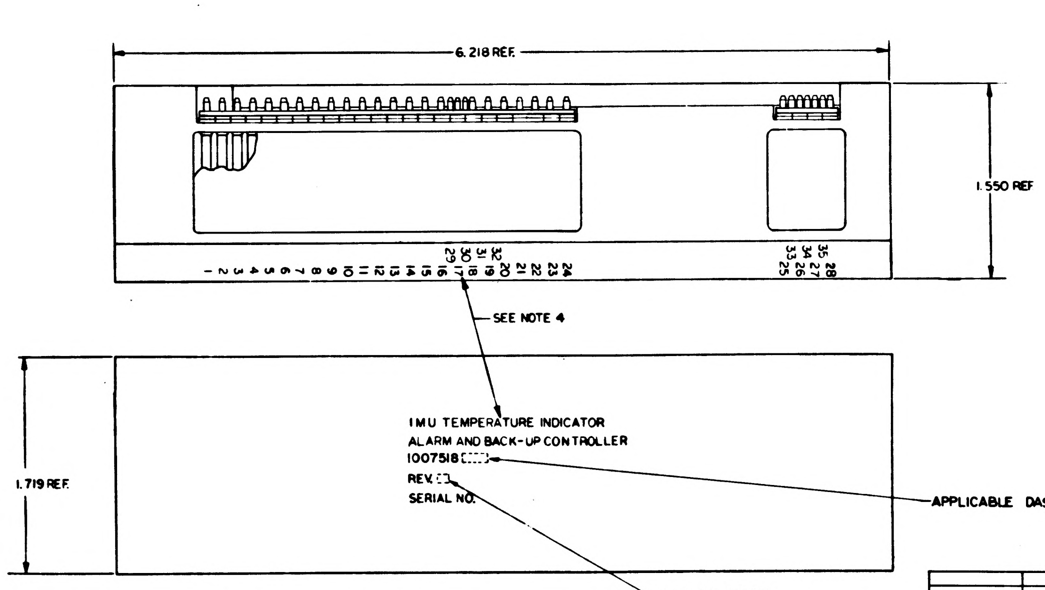
-204	197	-181	151	-166	2610	-217	8870	-268	30100
-205	199	-182	153	-167	2670	-218	9090		
-206	201	-183	155	-168	2740	-219	9310		
		-184	157	-169	2800	-220	9530		
		-185	159	-170	2870	-221	9760		
		-186	161	-171	2940	-222	10000		
		-187	163	-172	3010	-223	10200		
		-188	165	-173	3090	-224	10500		
		-189	167	-174	3160	-225	10700		
		-190	169	-175	3240	-226	11000		
		-191	171	-176	3320	-227	11300		

TABLE I

CONFIGURATION	~~MATERIAL~~	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	~~ADHESIVE~~	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	~~ADHESIVE~~	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	~~PRIMER~~	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE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1.550 REF
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29 30 31 32
25 26 27 28
33 34 35
SEE NOTE 4
1.719 REF.
IMU TEMPERATURE INDICATOR
ALARM AND BACK-UP CONTROLLER
1007518
REV.
SERIAL NO.
APPLICABLE DASH NO.
DWG. REV. LETTER

MARKING VIEW
SCALE 2:1

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		1	1
		1	1
		AR	AR
		AR	AR
		AR	AR
		AR	AR
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		021	ON
QUANTITY REQUIRED			

EFFECTIVITY

1007577		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

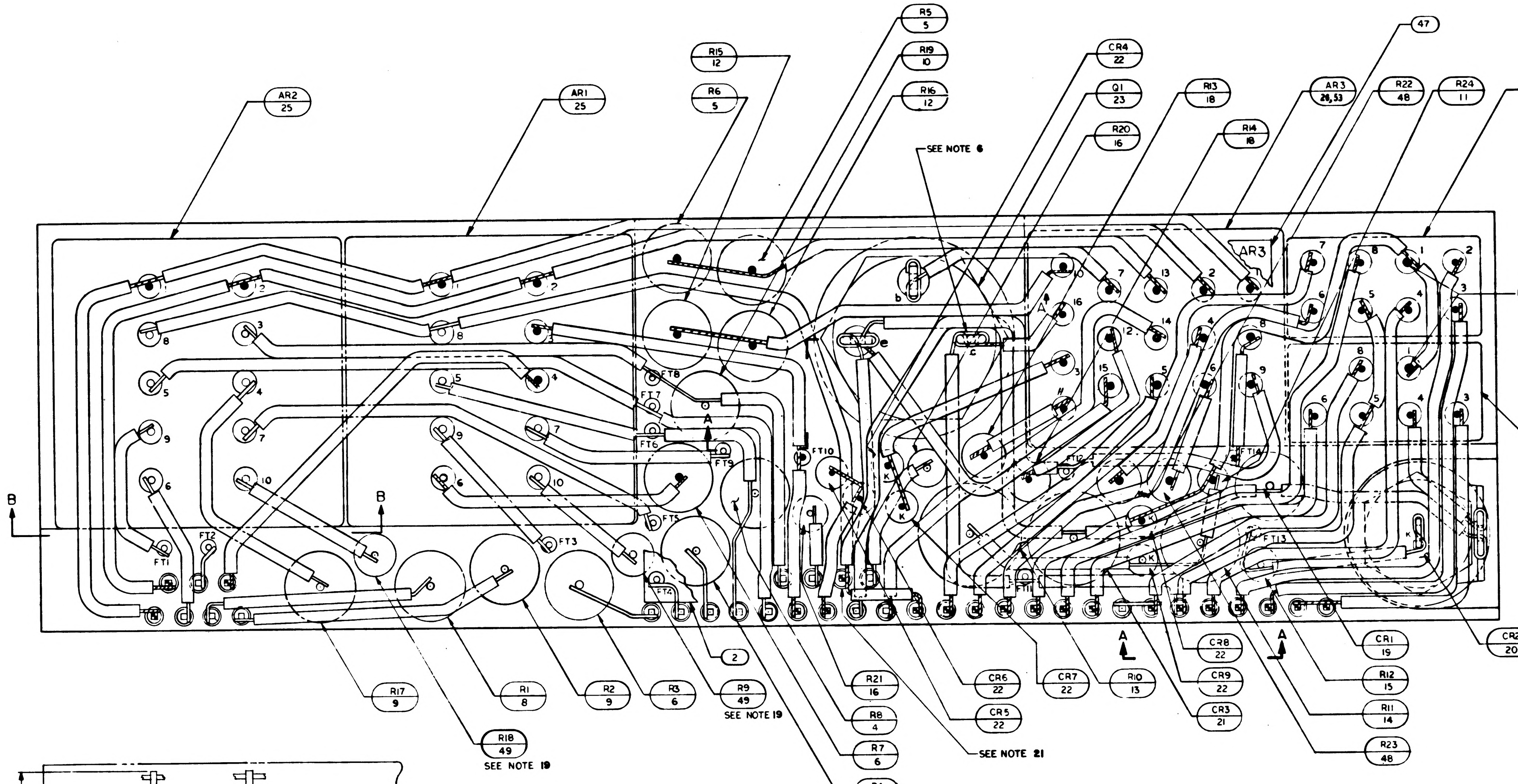
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
X XX ± .02 ± 1°
.XXX ± .005
DO NOT SCALE THIS DRAWING

MATERIAL

HEAT TREATMENT

FINAL FINISH

DRAWN
CHECKED
APPROVED
APPROVED
NASA APP
MIT APP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AR1 25
R6 5
R15 12
R5 5
R19 10
R16 12
R20 16
CR4 22
Q1 23
R13 18
R14 18
AR3 26,53
47
R22 48
R24 11
K1 24
SEE NOTE 6
BLUE BEAD
SEE NOTE 10
K2 24
B
B
A
A
FT1
FT2
FT3
FT4
FT5
FT6
FT7
FT8
FT9
FT10
FT11
FT12
FT13
FT14
R17 9
R18 49
SEE NOTE 19
R1 8
R2 9
R3 6
R9 49
SEE NOTE 19
2
R21 16
R8 4
R7 6
R4 7
CR6 22
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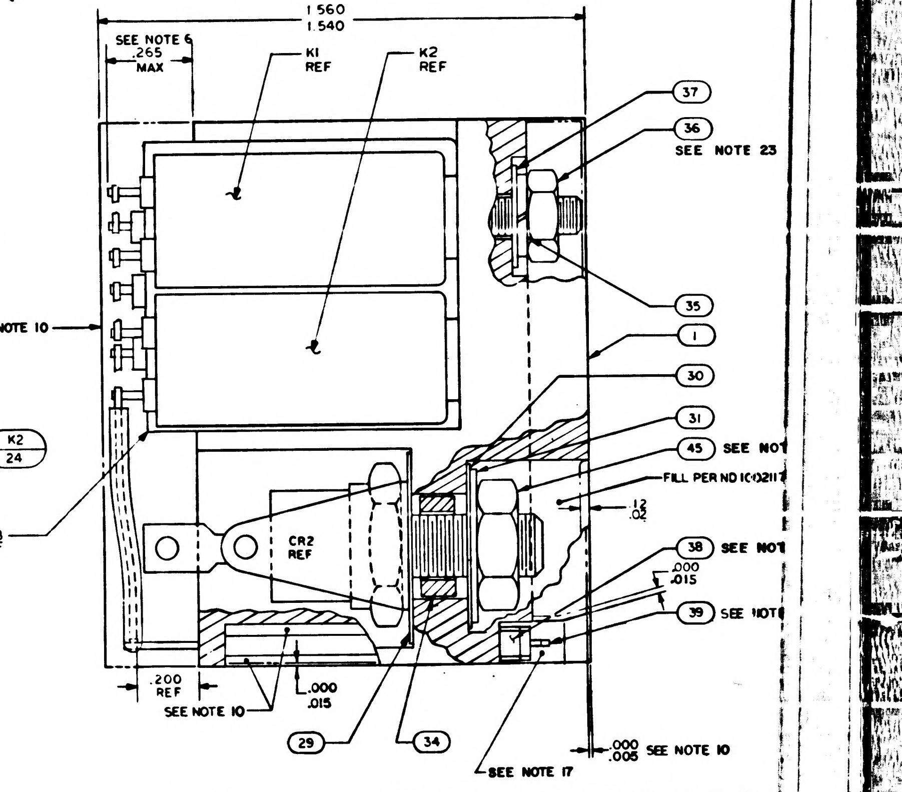
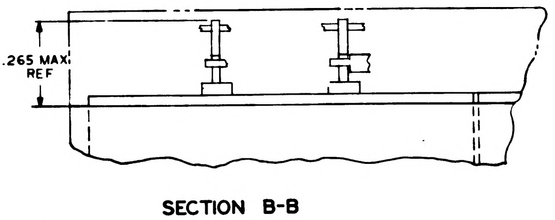
R23 48
CR2 20

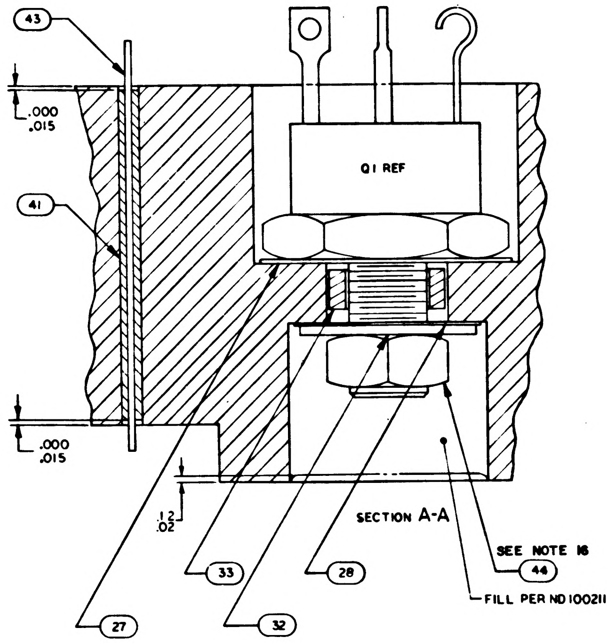

1.560
1.540
SEE NOTE 6
.265 MAX
K1 REF
K2 REF
37
36 SEE NOTE 23
35
1
30
31
45 SEE NOTE
FILL PER ND 1002117
.12 .02
38 SEE NOTE
.000 .015
39 SEE NOTE
AR3 REF
CR2 REF
.200 REF
SEE NOTE 10
.000 .015
29
34
.000 .005 SEE NOTE 10
SEE NOTE 17



SECTION B-B

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. ~~BOND FIND NO. 50,51 & 52 TO FIND NO. 38 PER ND 1002237.~~
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) AND ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. ALL CONNECTIONS MADE BY WELDING TO BE PER ND 1002005.
6. SOLDER PER ND 1002071.
7. CHECKERED INDICATES INTERMEDIATE LEVEL WIRING
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
10. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE. THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
11.
12. PROCURE PER PS 1007162.
13. AR DENOTES AS REQUIRED
14. K DENOTES CATHODE SIDE OF DIODE
15. MOUNTING TORQUE FOR FIND NO. 20 TO BE 10/15 INCH POUNDS
16. MOUNTING TORQUE FOR FIND NO. 23 TO BE 22/26 INCH POUNDS
17. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND
18. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007162 PART TO BE SELECTED FROM CHART.
19. R9 AND R18 TO BE SELECTED AT ASSEMBLY, PART NO. AND DASH NO. AS MARKED ON AMPLIFIER. RANGE OF VALUES (OHMS) SHOWN ON CHART.
20. ASSEMBLE FIND NO. 38 AND 39 PER ND 1002136
21. LEAD FROM AR1-8 TERMINATES AT LOWER WELD CONNECTION OF PIN 30. UPPER LEAD TIES PINS 15 AND 30 TO FT12
22. ALL ELECTRICAL COMPONENTS WHICH ARE NOT STUD MOUNTED AND ALL FEED THRUS TO BE CENTRALIZED AND CEMENTED PER ND 1002009. METHOD H.
23. TORQUE TO 4 ± 1 IN. LB. FOR ASSY OF ITEM 24, 25, AND 26.
24. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS & APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON & ISO-PROPYL ALCOHOL. ADHESIVE & COATING MATERIAL PER ND 1002187 TYPE II APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~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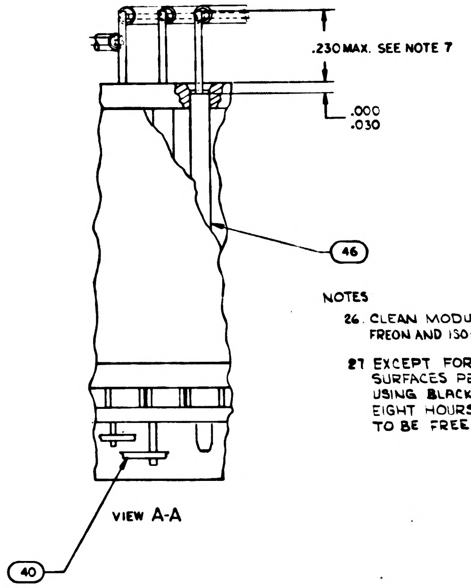
41
Q1 REF
.000 .015
.12 .02
27
33
32
28
44
SEE NOTE 16
FILL PER ND 1002117

SECTION A-A


.230 MAX. SEE NOTE 7
.000 .030
46
40

VIEW A-A

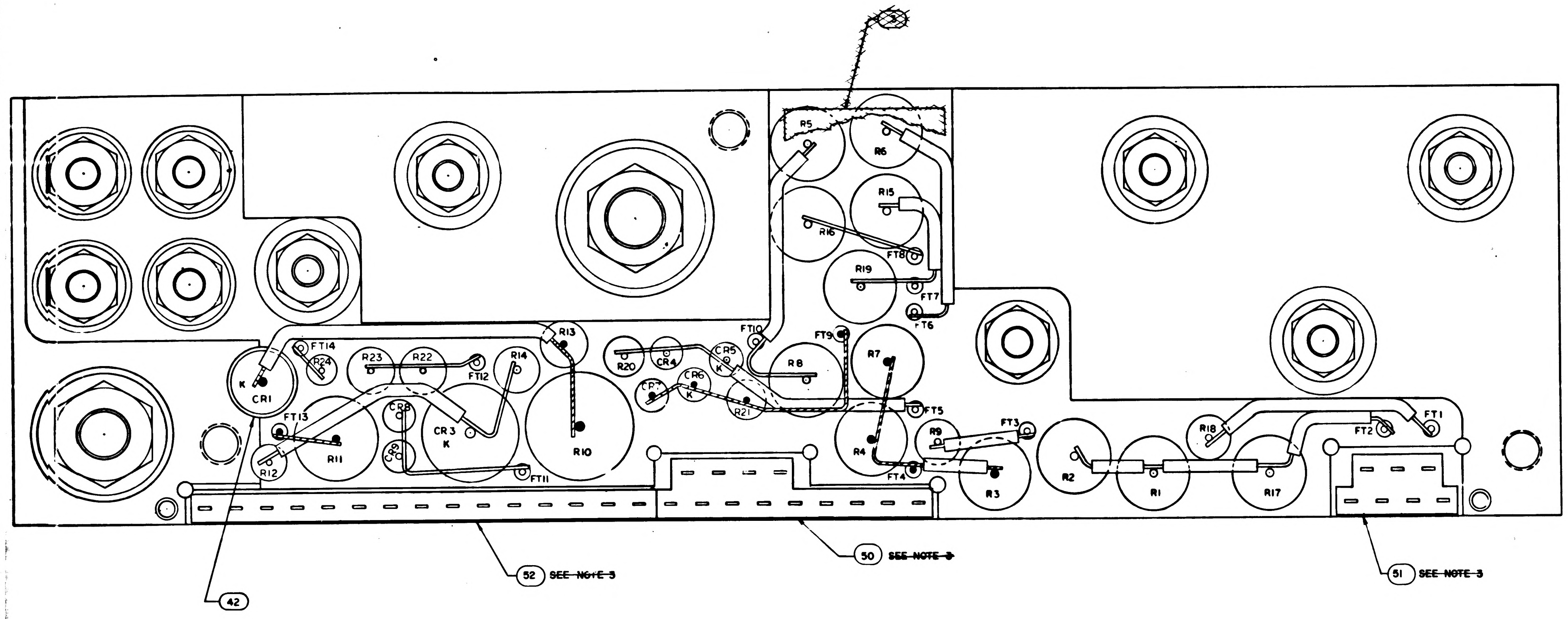
NOTES

26. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

27. EXCEPT FOR HELICOIL MOUNTING SURFACE PAINT ALL SURFACES PER ND 1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

R13				R14		R9		
PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NU
1010377-113	15	1010377-164	117	1010377-141	71	1010311-126	1000	1010311
-114	17	-165	119	-142	73	-127	1020	
-115	19	-166	121	-143	75	-128	1050	
-116	21	-167	123	-144	77	-129	1070	
-117	23	-168	125	-145	79	-130	1100	
-118	25	-169	127	-146	81	-131	1130	
-119	27	-170	129	-147	83	-132	1150	
-120	29	-171	131	-148	85	-133	1180	
-121	31	-172	133	-149	87	-134	1210	
-122	33	-173	135	-150	89	-135	1240	
-123	35	-174	137	-151	91	-136	1270	
-124	37	-175	139	-152	93	-137	1300	
-125	39	-176	141	-153	95	-138	1330	
-126	41	-177	143	-154	97	-139	1370	
-127	43	-178	145	-155	99	-140	1400	
-128	45	-179	147	-156	101	-141	1430	
-129	47	-180	149	-157	103	-142	1470	
-130	49	-181	151	-158	105	-143	1500	
-131	51	-182	153	-159	107	-144	1540	
-132	53	-183	155	-160	109	-145	1580	
-133	55	-184	157	-161	111	-146	1620	
-134	57	-185	159	-162	113	-147	1650	
-135	59	-186	161	-163	115	-148	1690	
-136	61	-187	163	-164	117	-149	1740	
-137	63	-188	165	-165	119	-150	1780	
-138	65	-189	167	-166	121	-151	1820	
-139	67	-190	169	-167	123	-152	1870	
-140	69	-191	171	-168	125	-153	1910	
-141	71	-192	173	-169	127	-154	1960	
-142	73	-193	175	-170	129	-155	2000	
-143	75	-194	177	-171	131	-156	2050	
-144	77	-195	179	-172	133	-157	2100	
-145	79	-196	181	-173	135	-158	2150	
-146	81	-197	183	-174	137	-159	2210	
-147	83	-198	185	-175	139	-160	2260	
-148	85	-199	187	-176	141	-161	2320	
-149	87	-200	189	-177	143	-162	2370	
-150	89	-201	191	-178	145	-163	2430	
-151	91	-202	193	-179	147	-164	2490	
-152	93	-203	195	-180	149	-165	2550	
-153	95	-204	197	-181	151	-166	2610	
-154	97	-205	199	-182	153	-167	2670	
-155	99	-206	201	-183	155	-168	2740	
-156	101			-184	157	-169	2800	
-157	103			-185	159	-170	2870	
-158	105			-186	161	-171	2940	
-159	107			-187	163	-172	3010	
-160	109			-188	165	-173	3090	
-161	111			-189	167	-174	3160	
-162	113			-190	169	-175	3240	
-163	115			-191	171	-176	3320	

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 9584	1-8-65	[illegible]
B	REVISED PER TDRR 17356	12 MAR 65	GM EF
C	REVISED PER TDRR 19396	2 JUNE 65	LGC MEN
D	REVISED PER TDRR 19434	3 JUN 65	[illegible]
E	REVISED PER TDRR 19501	JUN 65	[illegible]
F	REVISED PER TDRR 20143	JUN 65	[illegible]
G	REVISED PER TDRR 20718	65	SRA WI
H	REVISED PER TDRR 21285	31 JUL 65	WJR PT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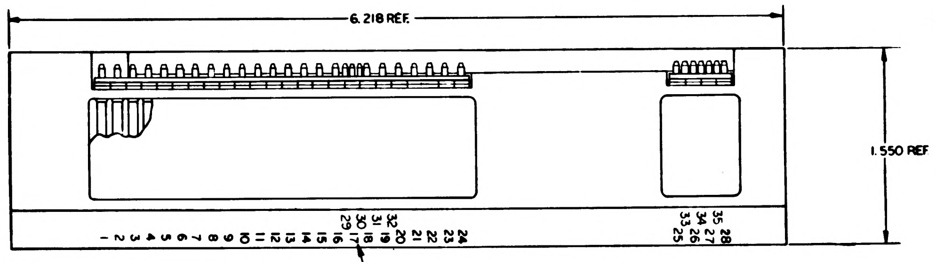
FT14
42
50 ~~SEE NOTE 3~~
51 ~~SEE NOTE 3~~
52 ~~SEE NOTE 3~~

TABLE I

CONFIGURATION	~~MATERIAL~~	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	~~ADHESIVE~~	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE, 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	~~ADHESIVE~~	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	~~PRIMER~~	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE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1.550 REF
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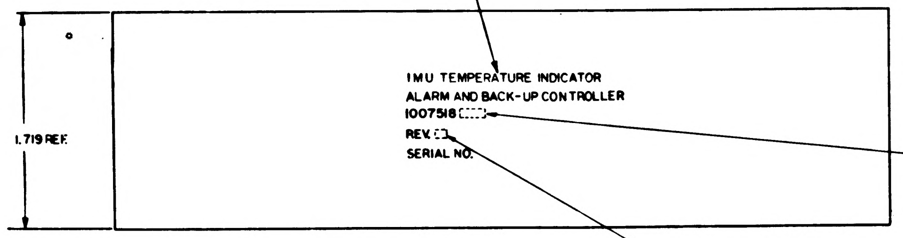
29 30 31 32
25 26 27 28
33 34 35
SEE NOTE 4


1.719 REF.
IMU TEMPERATURE INDICATOR
ALARM AND BACK-UP CONTROLLER
1007518-[ ]
REV. [ ]
SERIAL NO.
APPLICABLE DASH NO.
DWG. REV. LETTER

MARKING VIEW
SCALE 2:1

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		1	—		1018900-021	AMPLIFIER	53
		1	1		1008540-15	GASKET, CONNECTOR-MINIATURE	52
		X	X		1010140	SCHEMATIC, ELECTRICAL	
		1	1		1008545	GASKET, CONNECTOR MINIATURE	51
		1	1		1008546	GASKET, CONNECTOR MINIATURE	50
		2	2		1010311- SEE NOTE 19	RESISTOR	49
		2	2		1010377-237	RESISTOR	48
		1	1		1008185	INSULATOR TOP, AMPL	47
		AR	AR		1006776-20	INSULATION SLEEVING	46
		1	1		MS20341-10B	NUT HEX	45
		1	1		MS20341-416B	NUT HEX	44
		AR	AR		1006757-8	WIRE ELECTRICAL .020 DIA.	43
		AR	AR		MIL-I-23053-8	INSULATION SLEEVING	42
		AR	AR		1006776-21	INSULATION SLEEVING	41
		AR	AR		1006757-1	WIRE ELECT. .010 X .020	40
		35	35		1006782-5	CONTACT WRAPOST MALE	39
		35	35		1006775	INSULATOR WRAPOST MALE	38
		10	10		1008070-5	WASHER, FLAT	37
		10	10		MS20341-4A	NUT-HEX	36
		10	10		MS35338-78	WASHER, LOCK	35
		1	1		1008021-1	BUSHING INSULATOR	34
		1	1		1008021-2	BUSHING INSULATOR	33
		1	1		1008020-2	WASHER FLAT	32
		1	1		1008020-1	WASHER FLAT	31
		1	1		1008024-1	WASHER INSULATOR	30
		1	1		1008024-2	WASHER INSULATOR	29
		1	1		1008024-4	WASHER INSULATOR	28
		1	1		1008024-3	WASHER INSULATOR	27
		—	1		1018900-011	AMPLIFIER	26
		2	2		1000284-011	AMPLIFIER	25
		2	2		1010353-1	RELAY	24
		1	1		1010273-1	TRANSISTOR	23
		6	6		1010362-3	DIODE	22
		1	1		1010441-2	DIODE	21
		1	1		1010331-20	DIODE	20
		1	1		1010440-1	DIODE	19
		X	X		1010377 SEE NOTE 18	RESISTOR	18
							17
		2	2		1010364-368	RESISTOR	16
		1	1		1010364-44	RESISTOR	15
		1	1		1010361-112	RESISTOR	14
		1	1		1010452-167	RESISTOR	13
		2	2		1010450-9	RESISTOR	12
		1	1		1010604-22	RESISTOR	11
		1	1		1010450-10	RESISTOR	10
		2	2		1010450-12	RESISTOR	9
		1	1		1010450-13	RESISTOR	8
		1	1		1010450-14	RESISTOR	7
		2	2		1010450-3	RESISTOR	6
		2	2		1010450-2	RESISTOR	5
		1	1		1010450-11	RESISTOR	4
		—	~~1~~		~~1008074~~	~~INSULATOR BOTTOM~~	3
		1	1		1008186	INSULATOR TOP	2
		1	1		1007072	HEAT SINK	1

QUANTITY REQUIRED — LIST OF MATERIALS

1007518 H

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007577		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS X ± — DECIMALS .XX ± .02, .XXX ± .005 — ANGLES ± 1°
DO NOT SCALE THIS DRAWING

MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-4065

DRAWN S. Agne DATE 1 SEP 64
CHECKED A. Ulsand 4 SEP 64
APPROVAL
APPROVAL D. R. Tost 10/5/64
NASA APPROVAL
MIT APPROVAL W. Kupfer 6 Oct 64

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

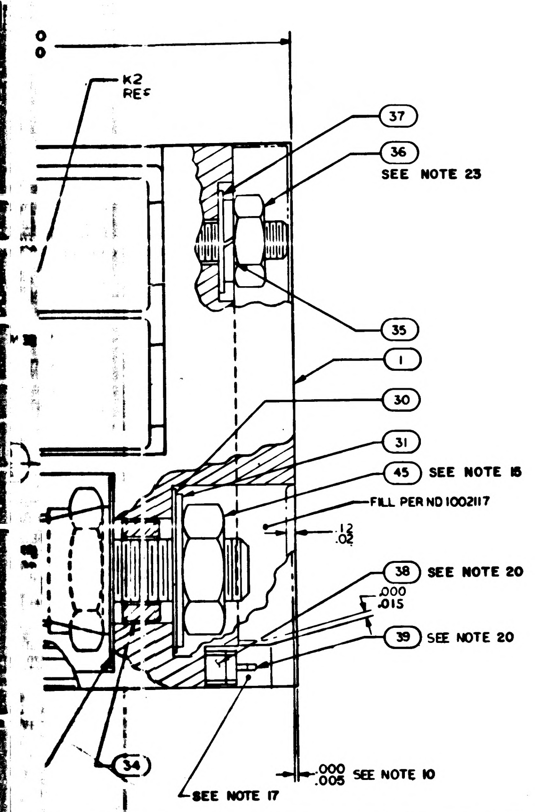
IMU TEMP INDICATOR ALARM AND BACK-UP CONTROLLER ASSEMBLY

CODE IDENT NO 80230
SIZE J
NASA DRAWING NO 1007518
SCALE 5:1
WT
SHEET 1 OF 1

1007518 REV H SH 1

(34)

3/1007518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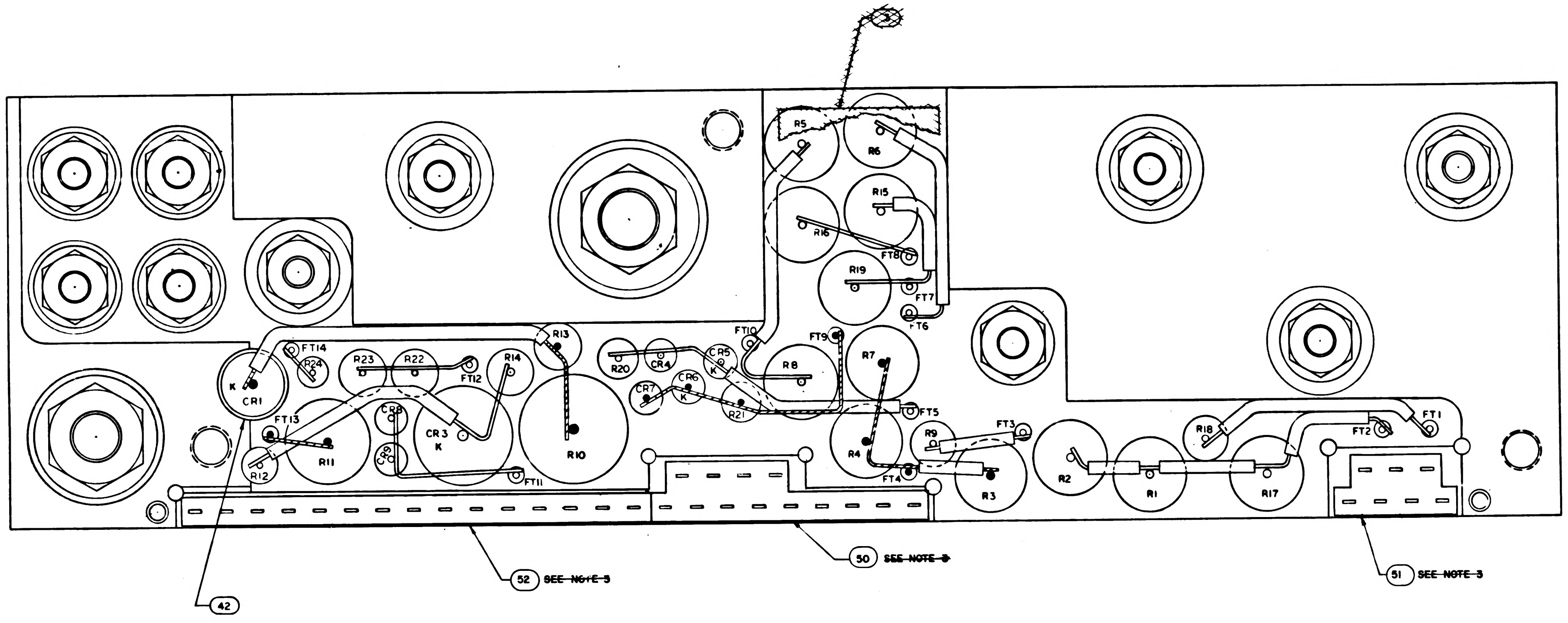
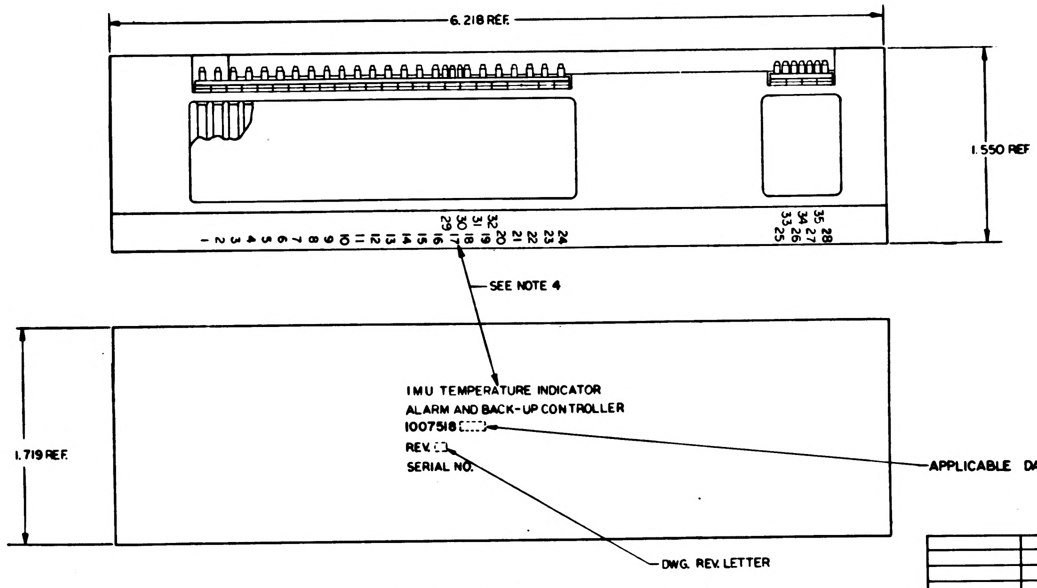
SEE NOTE 23
35
1
30
31
45 SEE NOTE 16
FILL PER ND 1002117
.12
.02
38 SEE NOTE 20
.000
.015
39 SEE NOTE 20
34
SEE NOTE 17
.000
.005 SEE NOTE 10


R5
R6
R15
R16
R19
FT8
FT7
FT6
FT10
FT9
R8
R7
CR5
CR6
K
CR7
CR4
R20
R13
R14
R23
R22
FT12
FT14
R24
K
CR1
FT13
CR8
CR9
CR3
K
R11
R12
R10
FT11
R21
FT5
R4
FT4
R9
R3
FT3
R2
R1
R18
R17
FT2
FT1
52 ~~SEE NOTE 5~~
50 ~~SEE NOTE 3~~
51 ~~SEE NOTE 3~~
42

		R14		R9 AND R18					
UMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE
7-164	117	1010377-141	71	1010311-126	1000	1010311-177	3400	1010311-228	11500
-165	119	-142	73	-127	1020	-178	3480	-229	11800
-166	121	-143	75	-128	1050	-179	3570	-230	12100
-167	123	-144	77	-129	1070	-180	3650	-231	12400
-168	125	-145	79	-130	1100	-181	3740	-232	12700
-169	127	-146	81	-131	1130	-182	3830	-233	13000
-170	129	-147	83	-132	1150	-183	3920	-234	13300
-171	131	-148	85	-133	1180	-184	4020	-235	13700
-172	133	-149	87	-134	1210	-185	4120	-236	14000
-173	135	-150	89	-135	1240	-186	4220	-237	14300
-174	137	-151	91	-136	1270	-187	4320	-238	14700
-175	139	-152	93	-137	1300	-188	4420	-239	15000
-176	141	-153	95	-138	1330	-189	4530	-240	15400
-177	143	-154	97	-139	1370	-190	4640	-241	15800
-178	145	-155	99	-140	1400	-191	4750	-242	16200
-179	147	-156	101	-141	1430	-192	4870	-243	16500
-180	149	-157	103	-142	1470	-193	4990	-244	16900
-181	151	-158	105	-143	1500	-194	5110	-245	17400
-182	153	-159	107	-144	1540	-195	5230	-246	17800
-183	155	-160	109	-145	1580	-196	5360	-247	18200
-184	157	-161	111	-146	1620	-197	5490	-248	18700
-185	159	-162	113	-147	1650	-198	5620	-249	19100
-186	161	-163	115	-148	1690	-199	5760	-250	19600
-187	163	-164	117	-149	1740	-200	5900	-251	20000
-188	165	-165	119	-150	1780	-201	6040	-252	20500
-189	167	-166	121	-151	1820	-202	6190	-253	21000
-190	169	-167	123	-152	1870	-203	6340	-254	21500
-191	171	-168	125	-153	1910	-204	6490	-255	22100
-192	173	-169	127	-154	1960	-205	6650	-256	22600
-193	175	-170	129	-155	2000	-206	6810	-257	23200
-194	177	-171	131	-156	2050	-207	6980	-258	23700
-195	179	-172	133	-157	2100	-208	7150	-259	24300
-196	181	-173	135	-158	2150	-209	7320	-260	24900
-197	183	-174	137	-159	2210	-210	7500	-261	25500
-198	185	-175	139	-160	2260	-211	7680	-262	26100
-199	187	-176	141	-161	2320	-212	7870	-263	26700
-200	189	-177	143	-162	2370	-213	8060	-264	27400
-201	191	-178	145	-163	2430	-214	8250	-265	28000
-202	193	-179	147	-164	2490	-215	8450	-266	28700
-203	195	-180	149	-165	2550	-216	8660	-267	29400
-204	197	-181	151	-166	2610	-217	8870	-268	30100
-205	199	-182	153	-167	2670	-218	9090		
-206	201	-183	155	-168	2740	-219	9310		
		-184	157	-169	2800	-220	9530		
		-185	159	-170	2870	-221	9760		
		-186	161	-171	2940	-222	10000		
		-187	163	-172	3010	-223	10200		
		-188	165	-173	3090	-224	10500		
		-189	167	-174	3160	-225	10700		
		-190	169	-175	3240	-226	11000		
		-191	171	-176	3320	-227	11300		

TABLE I

CONFIGURATION	~~MATERIAL~~	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	~~ADHESIVE~~	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	~~ADHESIVE~~	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	~~PRIMER~~	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE


6.218 REF.
1.550 REF
1.719 REF.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
29 30 31 32
33 34 35
25 26 27 28
SEE NOTE 4
IMU TEMPERATURE INDICATOR
ALARM AND BACK-UP CONTROLLER
1007518
REV.
SERIAL NO.
APPLICABLE DASH NO.
DWG. REV. LETTER

MARKING VIEW
SCALE 2:1

		1	–
		1	1
		X	X
		1	1
		1	1
		2	2
		2	2
		1	1
		AR	AR
		1	1
		1	1
		AR	AR
		AR	AR
		AR	AR
		AR	AR
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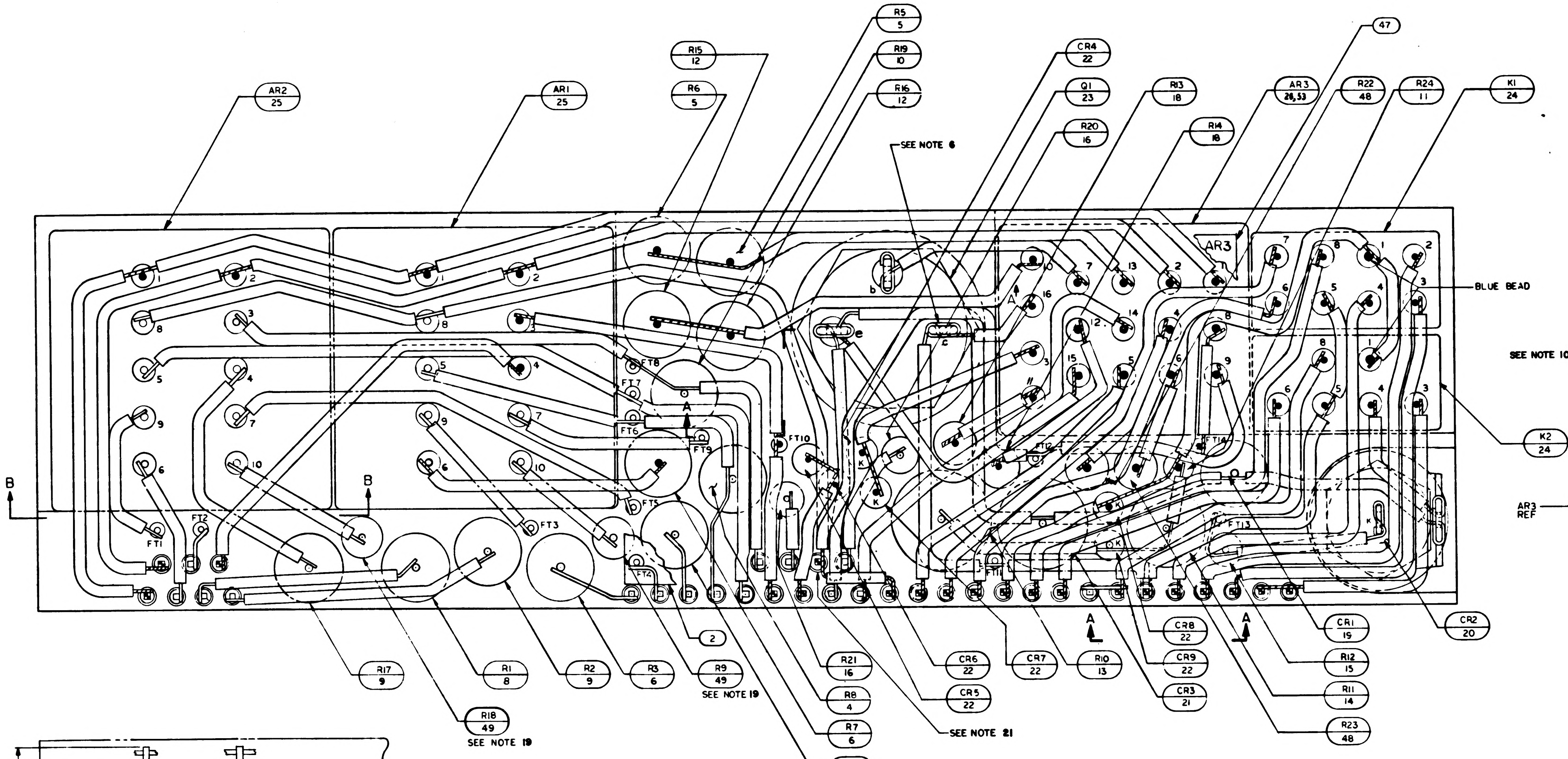
		1	1
		1	1
		2	2
		1	1
		1	1
		2	2
		2	2
		1	1
		–	+
		1	1
		1	1
		021	011
QUANTITY REQUIRED			

1007577		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS X – DECIMALS .XX ± .02 .XXX ± .005 ANGL ± 1
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH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AR1 25
R15 12
R6 5
R5 5
R19 10
R16 12
CR4 22
Q1 23
R20 16
R13 18
R14 18
AR3 26,53
R22 48
R24 11
K1 24
47
SEE NOTE 6
AR3
BLUE BEAD
SEE NOTE 10
K2 24
AR3 REF
B
A
FT1
FT2
FT3
FT4
FT5
FT6
FT7
FT8
FT9
FT10
FT12
FT13
FT14
R17 9
R18 49
SEE NOTE 19
R1 8
R2 9
R3 6
R9 49
SEE NOTE 19
2
R21 16
R8 4
R7 6
R4 7
CR6 22
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SEE NOTE 21
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CR9 22
CR3 21
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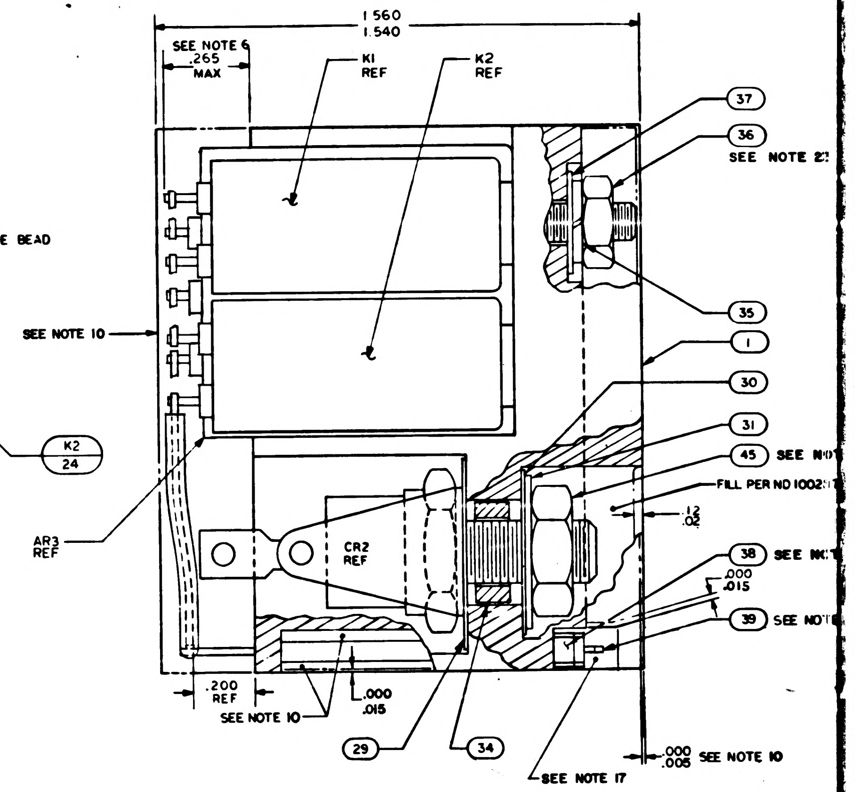
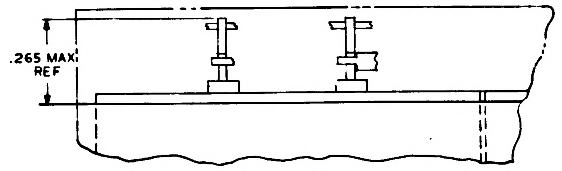
R11 14
R23 48
CR1 19
CR2 20

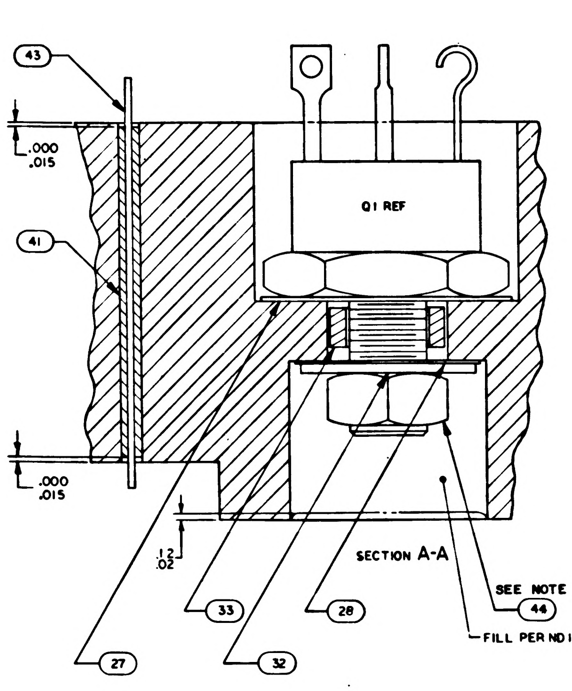

1.560
1.540
SEE NOTE 6
.265 MAX
K1 REF
K2 REF
37
36
SEE NOTE 23
35
1
30
31
45 SEE NOTE
FILL PER ND 1002
.12
.02
38 SEE NOTE
39 SEE NOTE
.000
.015
CR2 REF
.200 REF
SEE NOTE 10
.000
.015
29
34
SEE NOTE 17
.000
.005 SEE NOTE 10



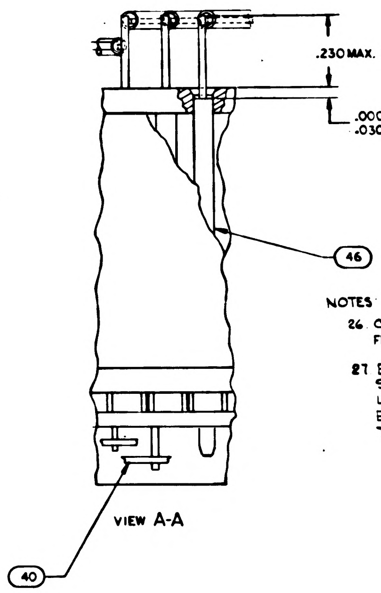
SECTION B-B

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. ~~BOND FIND NO. 50,51 & 52 TO FIND NO. 38 PER ND 1002237.~~
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) AND ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. ALL CONNECTIONS MADE BY WELDING TO BE PER ND 1002005.
6. SOLDER PER ND 1002071.
7. CHECKERED INDICATES INTERMEDIATE LEVEL WIRING
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
10. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE. THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
11.
12. PROCURE PER PS 1007162.
13. AR DENOTES AS REQUIRED
14. K DENOTES CATHODE SIDE OF DIODE
15. MOUNTING TORQUE FOR FIND NO. 20 TO BE 10/15 INCH POUNDS
16. MOUNTING TORQUE FOR FIND NO. 23 TO BE 22/26 INCH POUNDS
17. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND
18. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007162 PART TO BE SELECTED FROM CHART.
19. R9 AND R18 TO BE SELECTED AT ASSEMBLY, PART NO. AND DASH NO. AS MARKED ON AMPLIFIER. RANGE OF VALUES (OHMS) SHOWN ON CHART.
20. ASSEMBLE FIND NO. 38 AND 39 PER ND 1002136
21. LEAD FROM AR1-8 TERMINATES AT LOWER WELD CONNECTION OF PIN 30. UPPER LEAD TIES PINS 15 AND 30 TO FT12
22. ALL ELECTRICAL COMPONENTS WHICH ARE NOT STUD MOUNTED AND ALL FEED THRUS TO BE CENTRALIZED AND CEMENTED PER ND 1002009. METHOD H.
23. TORQUE TO 4 ± 1 IN. LB. FOR ASSY OF ITEM 24, 25, AND 26.
24. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS & APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON & ISO-PROPYL ALCOHOL. ADHESIVE & COATING MATERIAL PER ND 1002187 TYPE II APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~


43
41
.000
.015
Q1 REF
.000
.015
.12
.02
27
33
28
32
44
SEE NOTE 16
FILL PER ND 1002117

SECTION A-A


.230 MAX. SEE NOTE 7
.000
.030
46
40

VIEW A-A

NOTES

26. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

27. EXCEPT FOR HELICOIL MOUNTING SURFACE PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

R13				R14		R9		
PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NU
1010377-113	15	1010377-164	117	1010377-141	71	1010311-126	1000	101031
-114	17	-165	119	-142	73	-127	1020	
-115	19	-166	121	-143	75	-128	1050	
-116	21	-167	123	-144	77	-129	1070	
-117	23	-168	125	-145	79	-130	1100	
-118	25	-169	127	-146	81	-131	1130	
-119	27	-170	129	-147	83	-132	1150	
-120	29	-171	131	-148	85	-133	1180	
-121	31	-172	133	-149	87	-134	1210	
-122	33	-173	135	-150	89	-135	1240	
-123	35	-174	137	-151	91	-136	1270	
-124	37	-175	139	-152	93	-137	1300	
-125	39	-176	141	-153	95	-138	1330	
-126	41	-177	143	-154	97	-139	1370	
-127	43	-178	145	-155	99	-140	1400	
-128	45	-179	147	-156	101	-141	1430	
-129	47	-180	149	-157	103	-142	1470	
-130	49	-181	151	-158	105	-143	1500	
-131	51	-182	153	-159	107	-144	1540	
-132	53	-183	155	-160	109	-145	1580	
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-134	57	-185	159	-162	113	-147	1650	
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-137	63	-188	165	-165	119	-150	1780	
-138	65	-189	167	-166	121	-151	1820	
-139	67	-190	169	-167	123	-152	1870	
-140	69	-191	171	-168	125	-153	1910	
-141	71	-192	173	-169	127	-154	1960	
-142	73	-193	175	-170	129	-155	2000	
-143	75	-194	177	-171	131	-156	2050	
-144	77	-195	179	-172	133	-157	2100	
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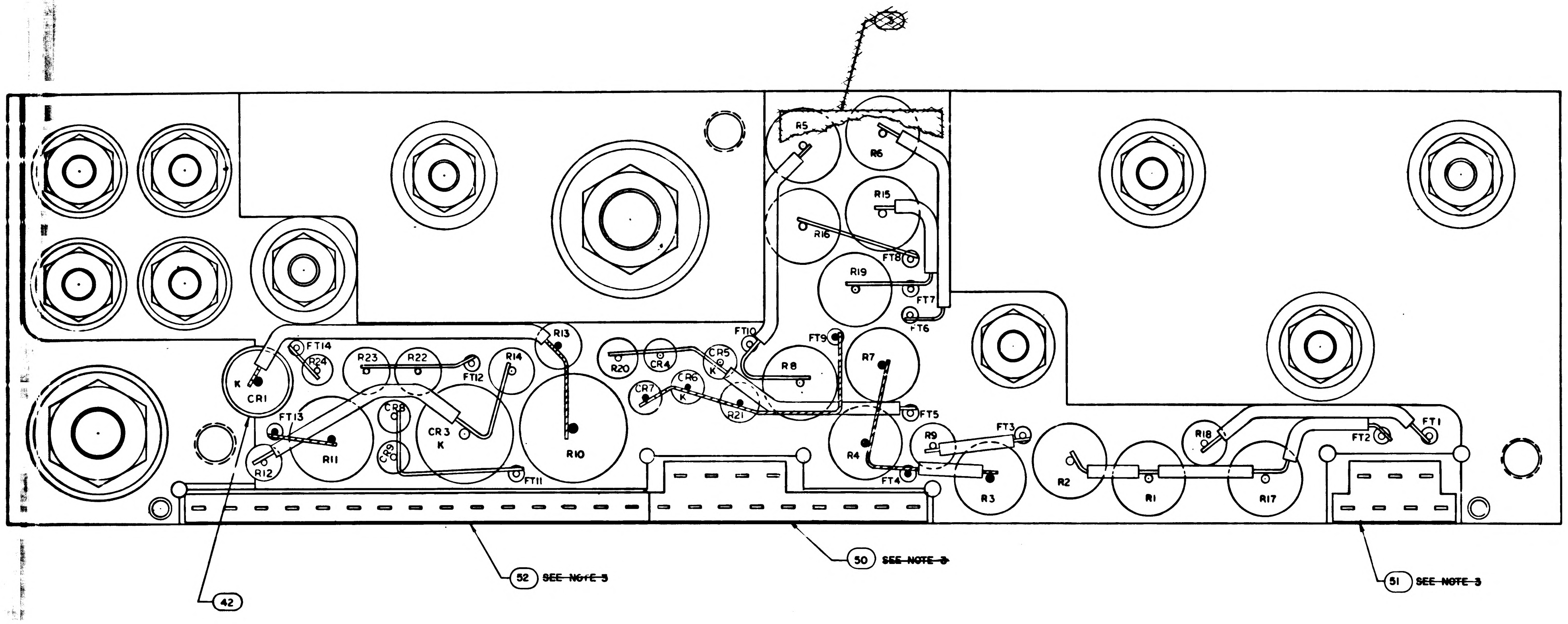
-146	81	-197	183	-174	137	-159	2210	
-147	83	-198	185	-175	139	-160	2260	
-148	85	-199	187	-176	141	-161	2320	
-149	87	-200	189	-177	143	-162	2370	
-150	89	-201	191	-178	145	-163	2430	
-151	91	-202	193	-179	147	-164	2490	
-152	93	-203	195	-180	149	-165	2550	
-153	95	-204	197	-181	151	-166	2610	
-154	97	-205	199	-182	153	-167	2670	
-155	99	-206	201	-183	155	-168	2740	
-156	101			-184	157	-169	2800	
-157	103			-185	159	-170	2870	
-158	105			-186	161	-171	2940	
-159	107			-187	163	-172	3010	
-160	109			-188	165	-173	3090	
-161	111			-189	167	-174	3160	
-162	113			-190	169	-175	3240	
-163	115			-191	171	-176	3320	

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 9584	[illegible]	[illegible]
B	REVISED PER TDRR 17336	12 MAR 65	GM EF
C	REVISED PER TDRR 19396	2 JUNE 65	LSC MEM
D	REVISED PER TDRR 19434	3 JUN 65	[illegible]
E	REVISED PER TDRR 19501	[illegible]	[illegible]
F	REVISED PER TDRR 20143	[illegible] 65	[illegible]
G	REVISED PER TDRR 20718	[illegible] 65	SRA
H	REVISED PER TDRR 21285	31 JUL 65	WJR
J	REVISED PER TDRR 21514	18 AUG 65	[illegible]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CR9
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FT1
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FT3
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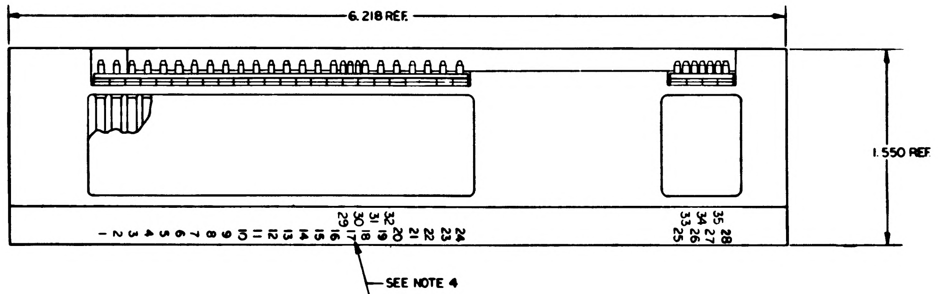
FT14
42
52 ~~SEE NOTE 3~~
50 ~~SEE NOTE 3~~
51 ~~SEE NOTE 3~~

TABLE I

CONFIGURATION	~~MATERIAL~~	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	~~ADHESIVE~~	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE, 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	~~ADHESIVE~~	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	~~PRIMER~~	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE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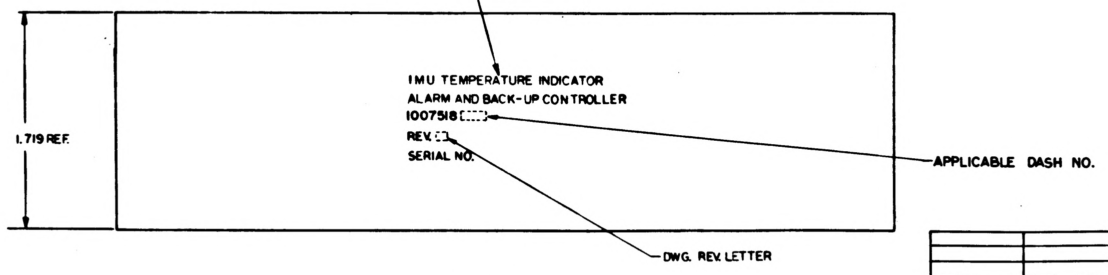
SEE NOTE 4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IMU TEMPERATURE INDICATOR
ALARM AND BACK-UP CONTROLLER
1007518
REV.
SERIAL NO.
APPLICABLE DASH NO.
DWG. REV. LETTER

MARKING VIEW
SCALE 2:1

		QUANTITY REQUIRED 021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		1	1		2008013-4	TERMINAL LUG, SOLDER-FLAT	54
		1	—		1018900-021	AMPLIFIER	53
		1	1		1008540-15	GASKET, CONNECTOR-MINIATURE	52
		╳	╳		1010140	SCHEMATIC, ELECTRICAL	
		1	1		1008545	GASKET, CONNECTOR MINIATURE	51
		1	1		1008546	GASKET, CONNECTOR MINIATURE	50
		2	2		1010311- SEE NOTE 19	RESISTOR	49
		2	2		1010377-237	RESISTOR	48
		1	1		1008185	INSULATOR TOP, AMPL	47
		AR	AR		1006776-20	INSULATION SLEEVING	46
		1	1		MS20341-10B	NUT HEX	45
		1	1		MS20341-416B	NUT HEX	44
		AR	AR		1006757-8	WIRE ELECTRICAL .020 DIA.	43
		AR	AR		MIL-I-23053-8	INSULATION SLEEVING	42
		AR	AR		1006776-21	INSULATION SLEEVING	41
		AR	AR		1006757-1	WIRE ELECT. .010 X .020	40
		35	35		1006782-5	CONTACT WRAPOST MALE	39
		35	35		1006775	INSULATOR WRAPOST MALE	38
		10	10		1008070-5	WASHER, FLAT	37
		10	10		MS20341-4A	NUT-HEX	36
		10	10		MS35338-78	WASHER, LOCK	35
		1	1		1008021-1	BUSHING INSULATOR	34
		1	1		1008021-2	BUSHING INSULATOR	33
		1	1		1008020-2	WASHER FLAT	32
		1	1		1008020-1	WASHER FLAT	31
		1	1		1008024-1	WASHER INSULATOR	30
		1	1		1008024-2	WASHER INSULATOR	29
		1	1		1008024-4	WASHER INSULATOR	28
		1	1		1008024-3	WASHER INSULATOR	27
		–	1		1018900-011	AMPLIFIER	26
		2	2		1000284-011	AMPLIFIER	25
		2	2		1010353-1	RELAY	24
		1	1		1010273-1	TRANSISTOR	23
		6	6		1010362-3	DIODE	22
		1	1		1010441-2	DIODE	21
		1	1		1010331-20	DIODE	20
		1	1		1010440-1	DIODE	19
		╳	╳		1010377 SEE NOTE 18	RESISTOR	18
							17
		2	2		1010364-368	RESISTOR	16
		1	1		1010364-44	RESISTOR	15
		1	1		1010361-112	RESISTOR	14
		1	1		1010452-167	RESISTOR	13
		2	2		1010450-9	RESISTOR	12
		1	1		1010604-22	RESISTOR	11
		1	1		1010450-10	RESISTOR	10
		2	2		1010450-12	RESISTOR	9
		1	1		1010450-13	RESISTOR	8
		1	1		1010450-14	RESISTOR	7
		2	2		1010450-3	RESISTOR	6
		2	2		1010450-2	RESISTOR	5
		1	1		1010450-11	RESISTOR	4
		–	~~1~~		~~1008074~~	~~INSULATOR BOTTOM~~	3
		1	1		1008186	INSULATOR TOP	2
		1	1		1007072	HEAT SINK	1

LIST OF MATERIALS

1007518 J

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007577		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS X - DECIMALS .XX ± .02 .XXX ± .005 ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN S. Agne DATE 1 SEP 64
CHECKED A. Allard 4 SEP 64
APPROVAL
APPROVAL 10/5/64
NASA APPROVAL
MIT APPROVAL W. Kupfer 6 Oct 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

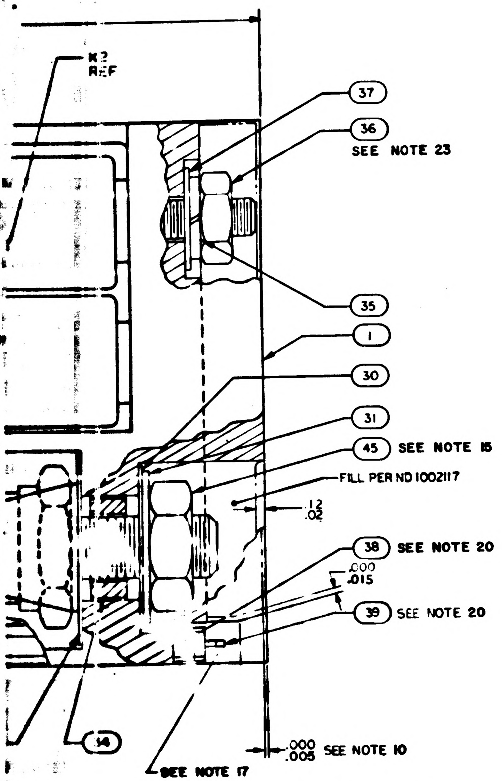
IMU TEMP INDICATOR ALARM
AND BACK-UP CONTROLLER
ASSEMBLY

CODE IDENT NO 80230
SIZE J
NASA DRAWING NO 1007518
SCALE 5:1
WT
SHEET 1 OF 1

1007518 REV J SH 1

3H

3/1007518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.12
.02
38 SEE NOTE 20
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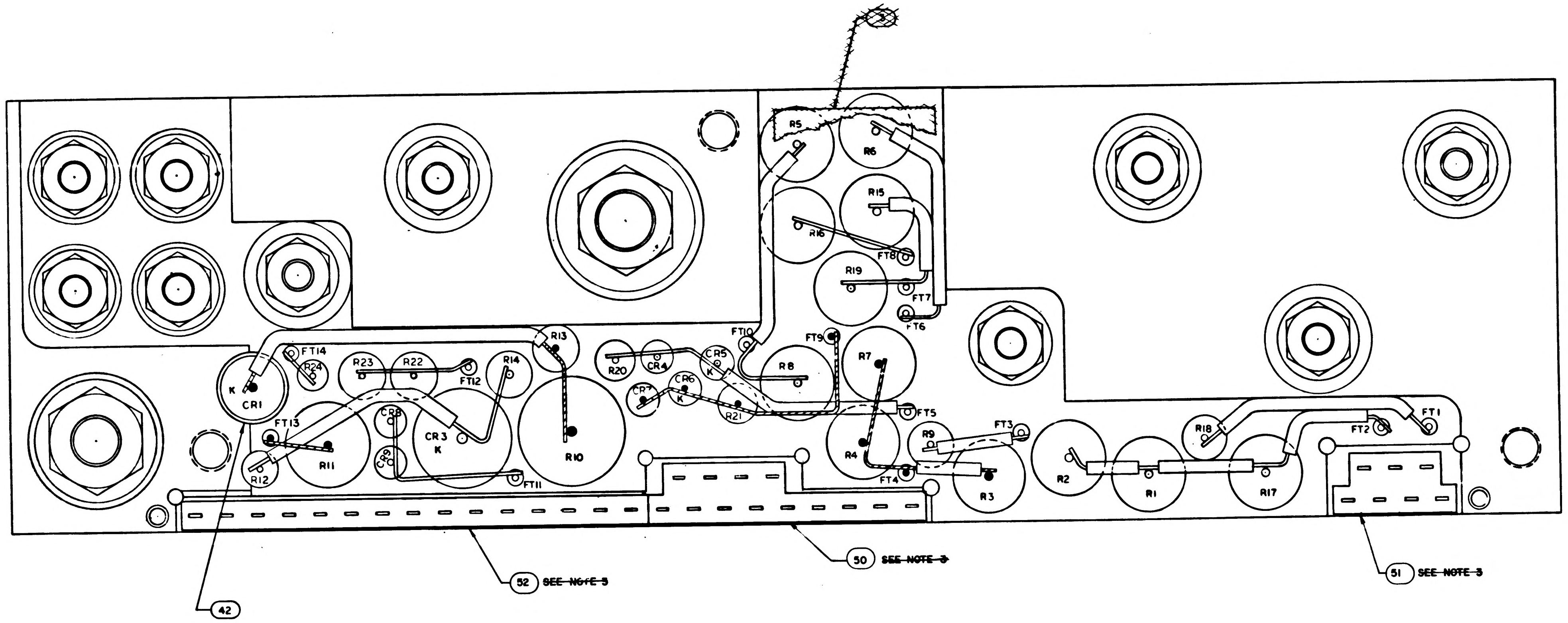
39 SEE NOTE 20
14
SEE NOTE 17
.000
.005 SEE NOTE 10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R11
R12
R10
FT11
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R18
FT2
FT1
R17
52 ~~SEE NOTE 3~~
50 ~~SEE NOTE 3~~
51 ~~SEE NOTE 3~~
42

		R14		R9 AND R18					
NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE
7-164	117	1010377-141	71	1010311-126	1000	1010311-177	3400	1010311-228	11500
-165	119	-142	73	-127	1020	-178	3480	-229	11800
-166	121	-143	75	-128	1050	-179	3570	-230	12100
-167	123	-144	77	-129	1070	-180	3650	-231	12400
-168	125	-145	79	-130	1100	-181	3740	-232	12700
-169	127	-146	81	-131	1130	-182	3830	-233	13000
-170	129	-147	83	-132	1150	-183	3920	-234	13300
-171	131	-148	85	-133	1180	-184	4020	-235	13700
-172	133	-149	87	-134	1210	-185	4120	-236	14000
-173	135	-150	89	-135	1240	-186	4220	-237	14300
-174	137	-151	91	-136	1270	-187	4320	-238	14700
-175	139	-152	93	-137	1300	-188	4420	-239	15000
-176	141	-153	95	-138	1330	-189	4530	-240	15400
-177	143	-154	97	-139	1370	-190	4640	-241	15800
-178	145	-155	99	-140	1400	-191	4750	-242	16200
-179	147	-156	101	-141	1430	-192	4870	-243	16500
-180	149	-157	103	-142	1470	-193	4990	-244	16900
-181	151	-158	105	-143	1500	-194	5110	-245	17400
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-183	155	-160	109	-145	1580	-196	5360	-247	18200
-184	157	-161	111	-146	1620	-197	5490	-248	18700
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-190	169	-167	123	-152	1870	-203	6340	-254	21500
-191	171	-168	125	-153	1910	-204	6490	-255	22100
-192	173	-169	127	-154	1960	-205	6650	-256	22600
-193	175	-170	129	-155	2000	-206	6810	-257	23200
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-195	179	-172	133	-157	2100	-208	7150	-259	24300
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-197	183	-174	137	-159	2210	-210	7500	-261	25500
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-201	191	-178	145	-163	2430	-214	8250	-265	28000
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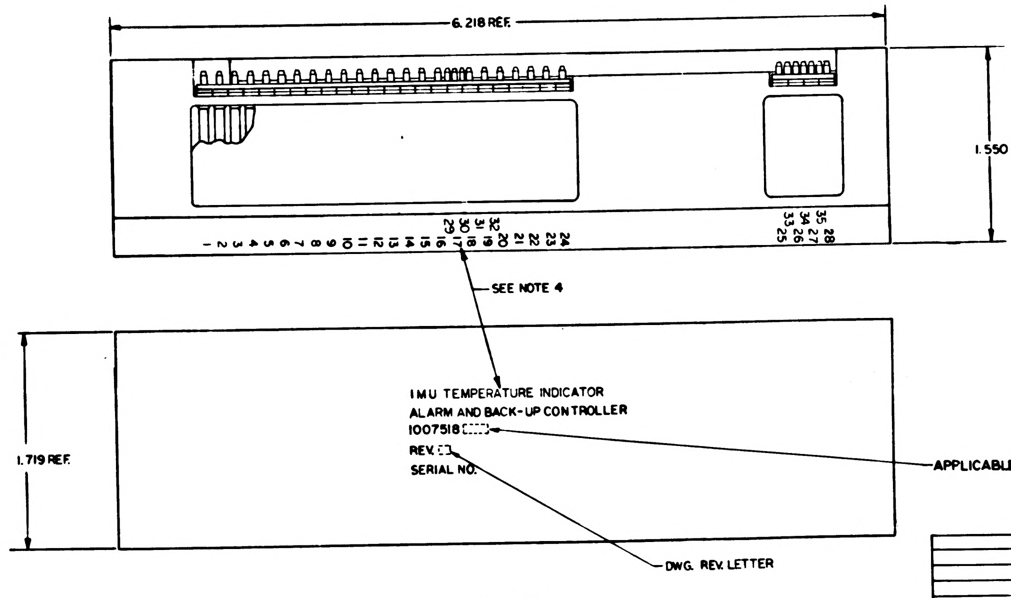
		-185	159	-170	2870	-221	9760		
		-186	161	-171	2940	-222	10000		
		-187	163	-172	3010	-223	10200		
		-188	165	-173	3090	-224	10500		
		-189	167	-174	3160	-225	10700		
		-190	169	-175	3240	-226	11000		
		-191	171	-176	3320	-227	11300		

TABLE I

CONFIGURATION	~~MATERIAL~~	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	~~ADHESIVE~~	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE / 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	~~ADHESIVE~~	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	~~PRIMER~~	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE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1.719 REF.
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SEE NOTE 4
IMU TEMPERATURE INDICATOR
ALARM AND BACK-UP CONTROLLER
1007518
REV.
SERIAL NO.
APPLICABLE DASH NO.
DWG. REV. LETTER

MARKING VIEW
SCALE 2:1

		1	1		2008
		1	—		1011
		1	1		1006
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		1	1		100
		1	1		1005
		2	2		101
		2	2		101
		1	1		100
		AR	AR		1006
		1	1		MS2
		1	1		MS2
		AR	AR		1006
		AR	AR		MIL
		AR	AR		100
		AR	AR		100
		35	35		100
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		10	10		100
		10	10		MS2
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		1	1		10
		1	1		100
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		2	2		10
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QUANTITY REQUIRE					

1007577		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS X
DECIMALS .XX ± .02 .XXX ± .005
ANGLES
DO NOT SCALE THIS DRAWING

MATERIAL

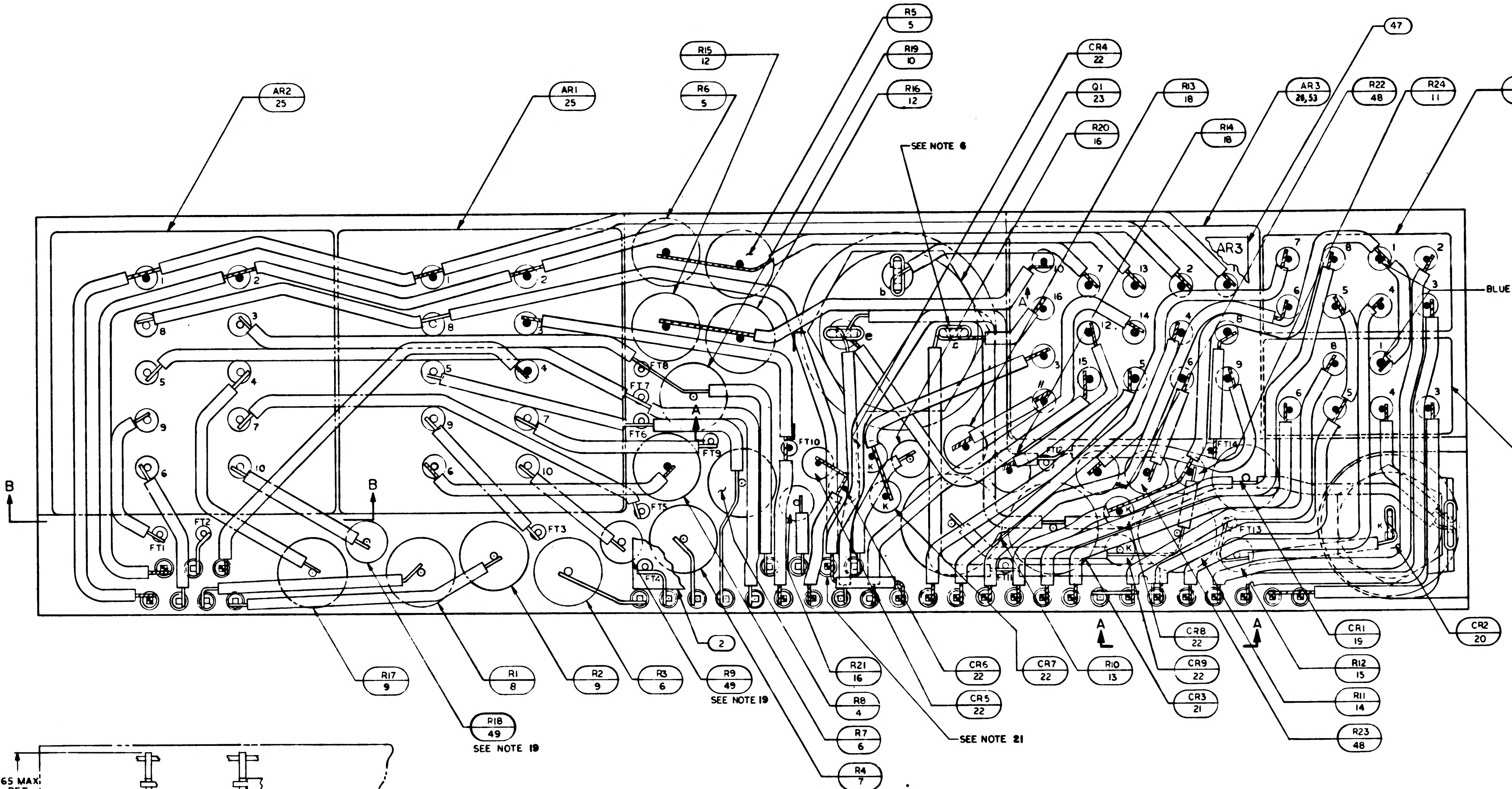
HEAT TREATMENT

FINAL FINISH

DRAWN
CHECKED
APPROVAL
APPROVAL

1007518	REV LET J	SH 1

2/1-007518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AR1 25
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R6 5
R5 5
R19 10
R16 12
CR4 22
Q1 23
R20 16
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AR3 26,53
R22 48
R24 11
K1 24
47
SEE NOTE 6
AR3
BLUE BEAD
K2 24
CR2 20
CR1 19
R12 15
R11 14
R23 48
CR8 22
CR9 22
CR3 21
R10 13
CR7 22
CR6 22
CR5 22
SEE NOTE 21
R21 16
R8 4
R7 6
R4 7
R9 49
SEE NOTE 19
R3 6
R2 9
R1 8
R18 49
SEE NOTE 19
R17 9
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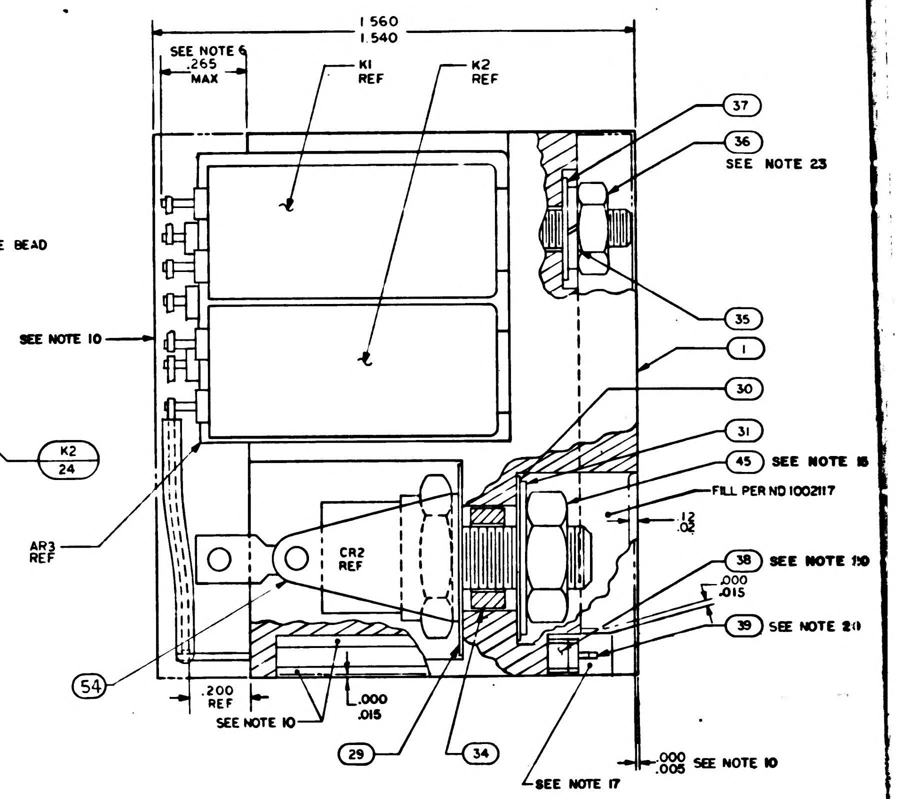
A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K2 REF
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SEE NOTE 10
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45 SEE NOTE 16
FILL PER ND 1002117
.12
.02
AR3 REF
CR2 REF
38 SEE NOTE 20
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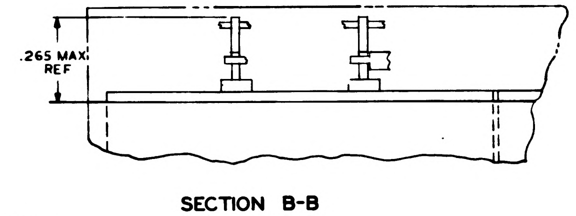
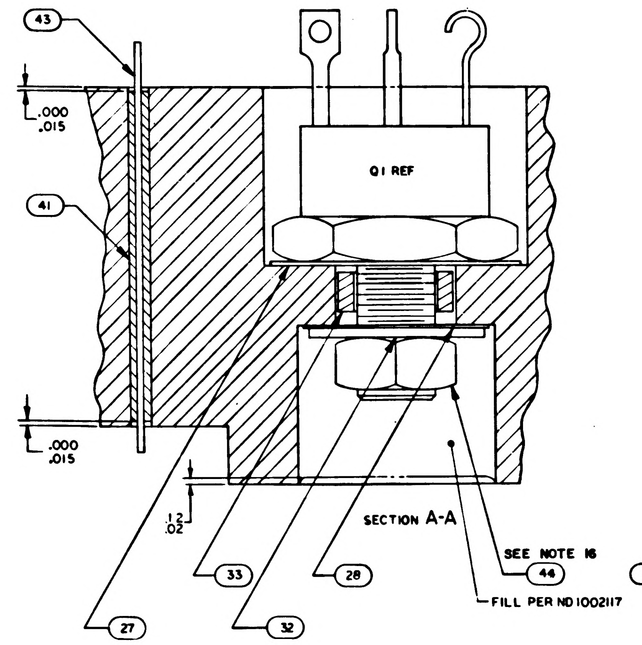
.015
39 SEE NOTE 20
54
.200 REF
SEE NOTE 10
.000
.015
29
34
.000
.005 SEE NOTE 10
SEE NOTE 17



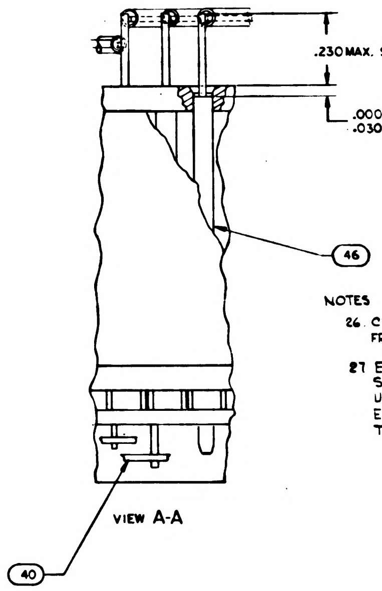
SECTION B-B

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. ~~BOND FIND NO. 50,51 & 52 TO FIND NO. 38~~ PER ND ~~1002237~~.
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) AND ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. ALL CONNECTIONS MADE BY WELDING TO BE PER ND 1002005.
6. SOLDER PER ND 1002071.
7. CHECKERED INDICATES INTERMEDIATE LEVEL WIRING
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
10. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE. THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
11.
12. PROCURE PER PS 1007162.
13. AR DENOTES AS REQUIRED
14. K DENOTES CATHODE SIDE OF DIODE
15. MOUNTING TORQUE FOR FIND NO. 20 TO BE 10/15 INCH POUNDS
16. MOUNTING TORQUE FOR FIND NO. 23 TO BE 22/26 INCH POUNDS
17. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND
18. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007162 PART TO BE SELECTED FROM CHART.
19. R9 AND R18 TO BE SELECTED AT ASSEMBLY, PART NO. AND DASH NO. AS MARKED ON AMPLIFIER. RANGE OF VALUES (OHMS) SHOWN ON CHART.
20. ASSEMBLE FIND NO. 38 AND 39 PER ND 1002136
21. LEAD FROM AR1-8 TERMINATES AT LOWER WELD CONNECTION OF PIN 30. UPPER LEAD TIES PINS 15 AND 30 TO FT12
22. ALL ELECTRICAL COMPONENTS WHICH ARE NOT STUD MOUNTED AND ALL FEED THRUS TO BE CENTRALIZED AND CEMENTED PER ND 1002009. METHOD H.
23. TORQUE TO 4 ± 1 IN. LB. FOR ASSY OF ITEM 24, 25, AND 26.
24. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS & APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON & ISO-PROPYL ALCOHOL. ADHESIVE & COATING MATERIAL PER ND 1002187 TYPE II APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~


43
41
.000
.015
Q1 REF
.000
.015
.12
.02
33
28
27
32
SEE NOTE 16
44
FILL PER ND 1002117

SECTION A-A


.230 MAX. SEE NOTE 7
.000
.030
46
40

VIEW A-A

NOTES

26. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

27. EXCEPT FOR HELICOIL MOUNTING SURFACE PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

R13				R14		R9 AND R18			
PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE
1010377-113	15	1010377-164	117	1010377-141	71	1010311-126	1000	1010311-177	[illegible]
-114	17	-165	119	-142	73	-127	1020	-178	[illegible]
-115	19	-166	121	-143	75	-128	1050	-179	[illegible]
-116	21	-167	123	-144	77	-129	1070	-180	[illegible]
-117	23	-168	125	-145	79	-130	1100	-181	[illegible]
-118	25	-169	127	-146	81	-131	1130	-182	[illegible]
-119	27	-170	129	-147	83	-132	1150	-183	[illegible]
-120	29	-171	131	-148	85	-133	1180	-184	[illegible]
-121	31	-172	133	-149	87	-134	1210	-185	[illegible]
-122	33	-173	135	-150	89	-135	1240	-186	[illegible]
-123	35	-174	137	-151	91	-136	1270	-187	[illegible]
-124	37	-175	139	-152	93	-137	1300	-188	[illegible]
-125	39	-176	141	-153	95	-138	1330	-189	[illegible]
-126	41	-177	143	-154	97	-139	1370	-190	[illegible]
-127	43	-178	145	-155	99	-140	1400	-191	[illegible]
-128	45	-179	147	-156	101	-141	1430	-192	[illegible]
-129	47	-180	149	-157	103	-142	1470	-193	[illegible]
-130	49	-181	151	-158	105	-143	1500	-194	[illegible]
-131	51	-182	153	-159	107	-144	1540	-195	[illegible]
-132	53	-183	155	-160	109	-145	1580	-196	[illegible]
-133	55	-184	157	-161	111	-146	1620	-197	[illegible]
-134	57	-185	159	-162	113	-147	1650	-198	[illegible]
-135	59	-186	161	-163	115	-148	1690	-199	[illegible]
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-137	63	-188	165	-165	119	-150	1780	-201	[illegible]
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-139	67	-190	169	-167	123	-152	1870	-203	[illegible]
-140	69	-191	171	-168	125	-153	1910	-204	[illegible]
-141	71	-192	173	-169	127	-154	1960	-205	[illegible]
-142	73	-193	175	-170	129	-155	2000	-206	[illegible]
-143	75	-194	177	-171	131	-156	2050	-207	[illegible]
-144	77	-195	179	-172	133	-157	2100	-208	[illegible]
-145	79	-196	181	-173	135	-158	2150	-209	[illegible]
-146	81	-197	183	-174	137	-159	2210	-210	[illegible]
-147	83	-198	185	-175	139	-160	2260	-211	[illegible]
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-149	87	-200	189	-177	143	-162	2370	-213	[illegible]
-150	89	-201	191	-178	145	-163	2430	-214	[illegible]
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-153	95	-204	197	-181	151	-166	2610	-217	[illegible]
-154	97	-205	199	-182	153	-167	2670	-218	[illegible]
-155	99	-206	201	-183	155	-168	2740	-219	[illegible]
-156	101			-184	157	-169	2800	-220	[illegible]
-157	103			-185	159	-170	2870	-221	[illegible]
-158	105			-186	161	-171	2940	-222	[illegible]
-159	107			-187	163	-172	3010	-223	[illegible]
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-161	111			-189	167	-174	3160	-225	[illegible]
-162	113			-190	169	-175	3240	-226	[illegible]
-163	115			-191	171	-176	3320	-227	[illegible]

SYM	REVISIONS DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 19589	1-14-64	WK
Ⓜ B	REVISED PER TDRR 17336	4 MAR 65	GM
C	REVISED PER TDRR 19396	2 JUNE 65	LGC
D	REVISED PER TDRR 19434	3 JUN 65	
Ⓜ E	REVISED PER TDRR 19501	1 JUN 65	
Ⓜ F	REVISED PER TDRR 20143	9 JUN 65	RA
Ⓜ G	REVISED PER TDRR 20718	13 JUL 65	SRA
Ⓝ H	REVISED PER TDRR 21285	31 JUL 65	WJR
Ⓜ J	REVISED PER TDRR 21514	18 AUG 65	WNP
K	REVISED PER TDRR 22951	11 OCT 65	WNP

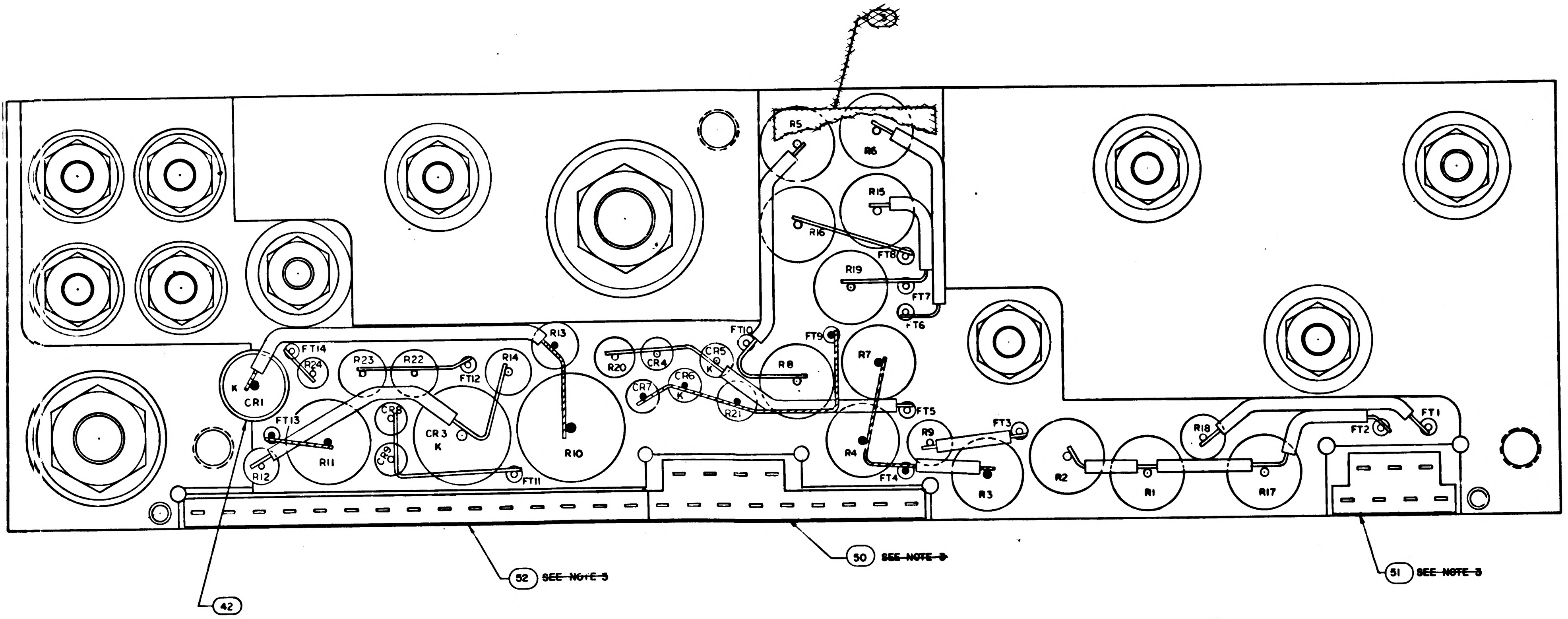
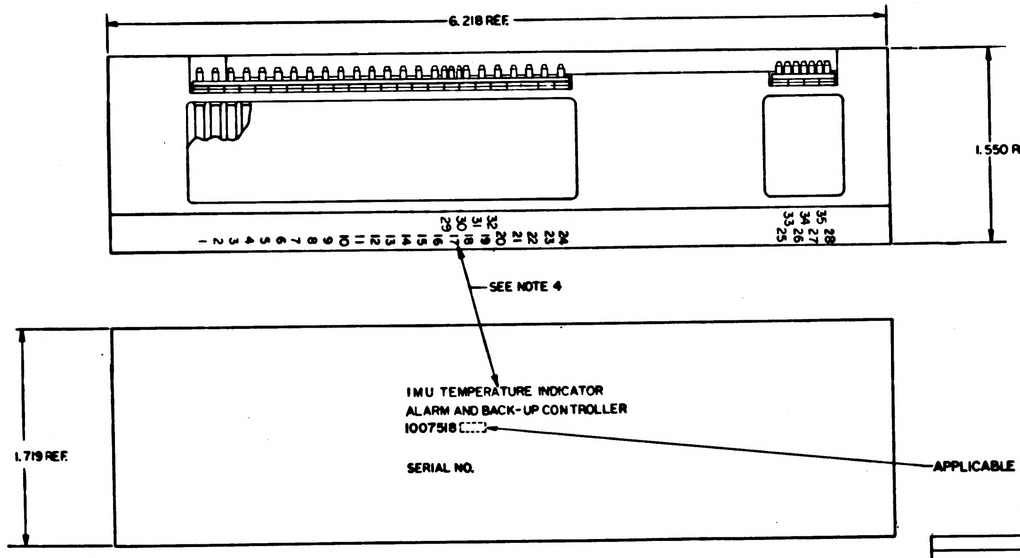


TABLE I

CONFIGURATION	~~MATERIAL~~	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	~~ADHESIVE~~	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE / 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	~~ADHESIVE~~	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	~~PRIMER~~	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE



MARKING VIEW
SCALE 2:1

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		1	1		2008013-4	TERMINAL-LUG, SOLDER-FLAT	54
		1	–		1018900-021	AMPLIFIER	53
		1	1		1008540-15	GASKET, CONNECTOR-MINIATURE	52
					1010140	SCHEMATIC, ELECTRICAL	
		1	1		1008545	GASKET, CONNECTOR MINIATURE	51
		1	1		1008546	GASKET, CONNECTOR MINIATURE	50
		2	2		1010311- SEE NOTE 19	RESISTOR	49
		2	2		1010377-237	RESISTOR	48
		1	1		1008185	INSULATOR TOP, AMPL	47
		AR	AR		1006776-20	INSULATION SLEEVING	46
		1	1		MS20341-10B	NUT HEX	45
		1	1		MS20341-416B	NUT HEX	44
		AR	AR		1006757-8	WIRE ELECTRICAL .020 DIA.	43
		AR	AR		MIL-I-23053-8	INSULATION SLEEVING	42
		AR	AR		1006776-21	INSULATION SLEEVING	41
		AR	AR		1006757-1	WIRE ELECT. .010 X .020	40
		35	35		1006782-5	CONTACT WRAPOST MALE	39
		35	35		1006775	INSULATOR WRAPOST MALE	38
		10	10		1008070-5	WASHER, FLAT	37
		10	10		MS20341-4A	NUT-HEX	36
		10	10		MS35338-78	WASHER, LOCK	35
		1	1		1008021-1	BUSHING INSULATOR	34
		1	1		1008021-2	BUSHING INSULATOR	33
		1	1		1008020-2	WASHER FLAT	32
		1	1		1008020-1	WASHER FLAT	31
		1	1		1008024-1	WASHER INSULATOR	30
		1	1		1008024-2	WASHER INSULATOR	29
		1	1		1008024-4	WASHER INSULATOR	28
		1	1		1008024-3	WASHER INSULATOR	27
		–	1		1018900-011	AMPLIFIER	26
		2	2		1000284-011	AMPLIFIER	25
		2	2		1010353-1	RELAY	24
		1	1		1010273-1	TRANSISTOR	23
		6	6		1010362-3	DIODE	22
		1	1		1010441-2	DIODE	21
		1	1		1010331-20	DIODE	20
		1	1		1010440-1	DIODE	19
					1010377 SEE NOTE 18	RESISTOR	18
							17
		2	2		1010364-368	RESISTOR	16
		1	1		1010364-44	RESISTOR	15
		1	1		1010361-112	RESISTOR	14
		1	1		1010452-167	RESISTOR	13
		2	2		1010450-9	RESISTOR	12
		1	1		1010604-22	RESISTOR	11
		1	1		1010450-10	RESISTOR	10
		2	2		1010450-12	RESISTOR	9
		1	1		1010450-13	RESISTOR	8
		1	1		1010450-14	RESISTOR	7
		2	2		1010450-3	RESISTOR	6
		2	2		1010450-2	RESISTOR	5
		1	1		1010450-11	RESISTOR	4
		–	~~1~~		~~1000874~~	~~INSULATOR BOTTOM~~	3
		1	1		1008186	INSULATOR TOP	2
		1	1		1007072	HEAT SINK	1

QUANTITY REQUIRED
LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007577		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ± .02 .XXX ± .005 ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN S. Agne DATE 1 SEP 64
CHECKED D. Uland 4 SEP 64
APPROVAL
APPROVAL 9/5/64
NASA APPROVAL 10-6-64
MIT APPROVAL W Kupfer 6 Oct 64

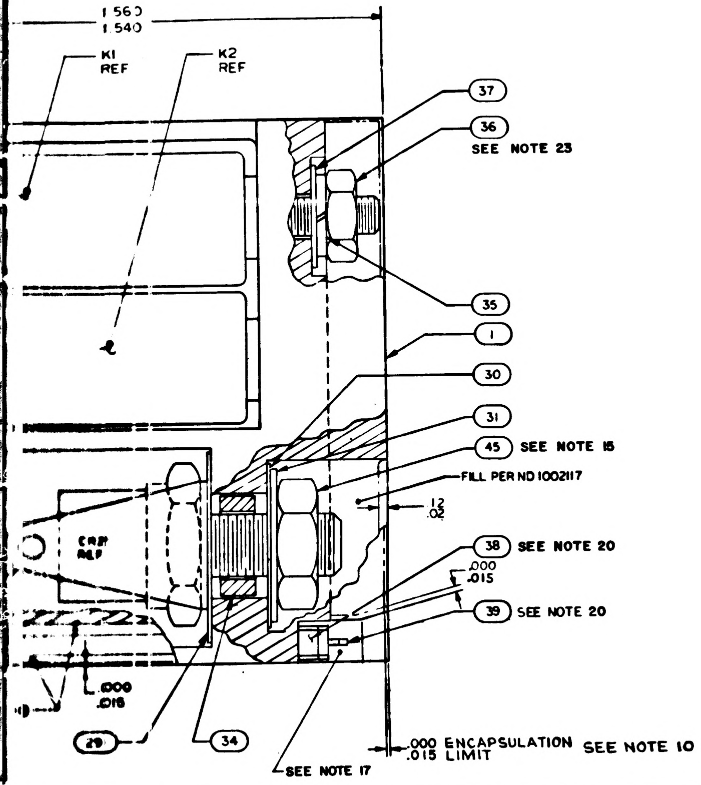
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

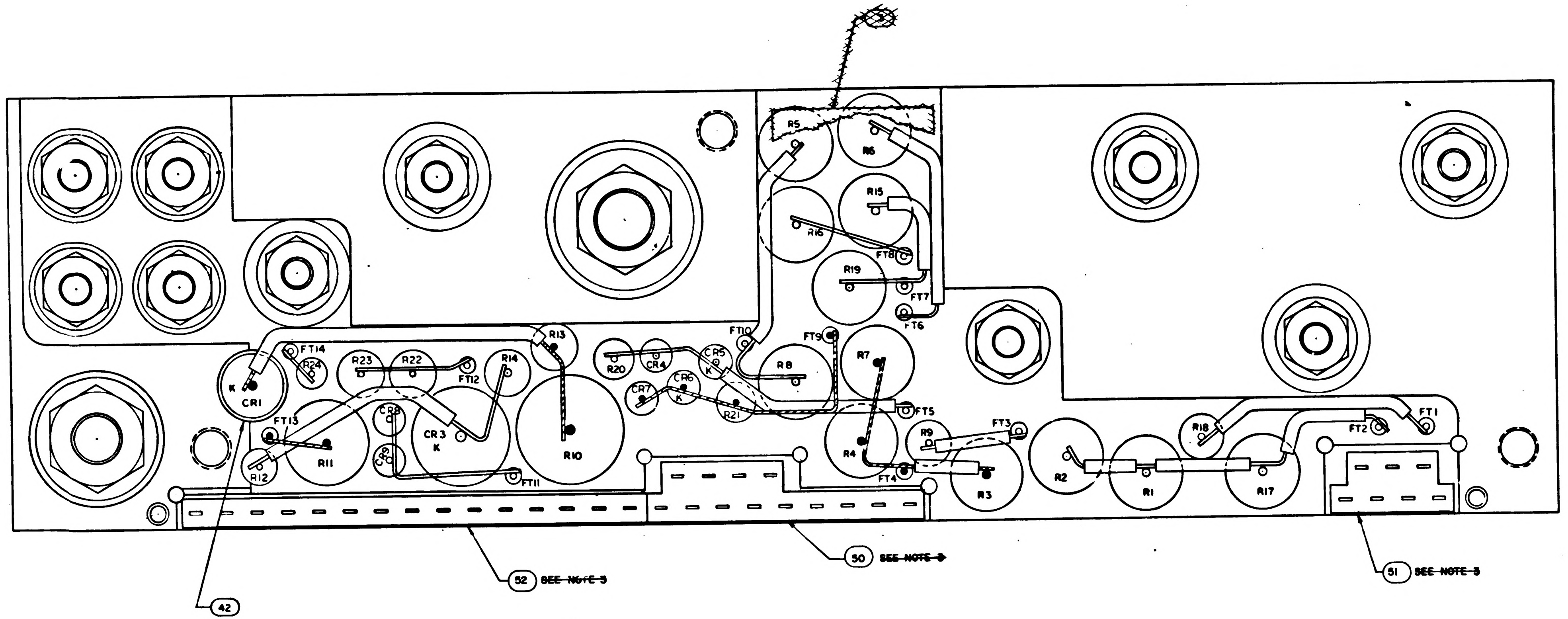
IMU TEMP INDICATOR ALARM AND BACK-UP CONTROLLER ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007518
SCALE 5:1
WT
SHEET 1 OF 1

1007518 K

3-1007518


1.560
1.540
K1
REF
K2
REF
37
36
SEE NOTE 23
35
1
30
31
45 SEE NOTE 15
FILL PER ND 1002117
.12
.02
CRP
REF
38 SEE NOTE 20
.000
.015
39 SEE NOTE 20
.000
.016
29
34
SEE NOTE 17
.000 ENCAPSULATION
.015 LIMIT
SEE NOTE 10


R5
R6
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R16
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FT7
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R13
FT10
FT9
R7
R8
CR5
K
CR6
K
CR4
R20
CR7
R21
FT5
FT3
R9
R4
FT4
R3
R2
R1
R17
R18
FT2
FT1
FT14
R24
R23
R22
FT12
R14
K
CR1
FT13
R11
CR2
CR3
K
R10
FT11
R12
42
52 ~~SEE NOTE 5~~
50 ~~SEE NOTE 5~~
51 ~~SEE NOTE 5~~

R13				R14		R9 AND R18					
R	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE
113	15	1010377-164	117	1010377-141	71	1010311-126	1000	1010311-177	3400	1010311-228	11500
114	17	-165	119	-142	73	-127	1020	-178	3480	-229	11800
115	19	-166	121	-143	75	-128	1050	-179	3570	-230	12100
116	21	-167	123	-144	77	-129	1070	-180	3650	-231	12400
117	23	-168	125	-145	79	-130	1100	-181	3740	-232	12700
118	25	-169	127	-146	81	-131	1130	-182	3830	-233	13000
119	27	-170	129	-147	83	-132	1150	-183	3920	-234	13300
120	29	-171	131	-148	85	-133	1180	-184	4020	-235	13700
121	31	-172	133	-149	87	-134	1210	-185	4120	-236	14000
122	33	-173	135	-150	89	-135	1240	-186	4220	-237	14300
123	35	-174	137	-151	91	-136	1270	-187	4320	-238	14700
124	37	-175	139	-152	93	-137	1300	-188	4420	-239	15000
125	39	-176	141	-153	95	-138	1330	-189	4530	-240	15400
126	41	-177	143	-154	97	-139	1370	-190	4640	-241	15800
127	43	-178	145	-155	99	-140	1400	-191	4750	-242	16200
128	45	-179	147	-156	101	-141	1430	-192	4870	-243	16500
129	47	-180	149	-157	103	-142	1470	-193	4990	-244	16900
130	49	-181	151	-158	105	-143	1500	-194	5110	-245	17400
131	51	-182	153	-159	107	-144	1540	-195	5230	-246	17800
132	53	-183	155	-160	109	-145	1580	-196	5360	-247	18200
133	55	-184	157	-161	111	-146	1620	-197	5490	-248	18700
134	57	-185	159	-162	113	-147	1650	-198	5620	-249	19100
135	59	-186	161	-163	115	-148	1690	-199	5760	-250	19600
136	61	-187	163	-164	117	-149	1740	-200	5900	-251	20000
137	63	-188	165	-165	119	-150	1780	-201	6040	-252	20500
138	65	-189	167	-166	121	-151	1820	-202	6190	-253	21000
139	67	-190	169	-167	123	-152	1870	-203	6340	-254	21500
140	69	-191	171	-168	125	-153	1910	-204	6490	-255	22100
141	71	-192	173	-169	127	-154	1960	-205	6650	-256	22600
142	73	-193	175	-170	129	-155	2000	-206	6810	-257	23200
143	75	-194	177	-171	131	-156	2050	-207	6980	-258	23700
144	77	-195	179	-172	133	-157	2100	-208	7150	-259	24300
145	79	-196	181	-173	135	-158	2150	-209	7320	-260	24900
146	81	-197	183	-174	137	-159	2210	-210	7500	-261	25500
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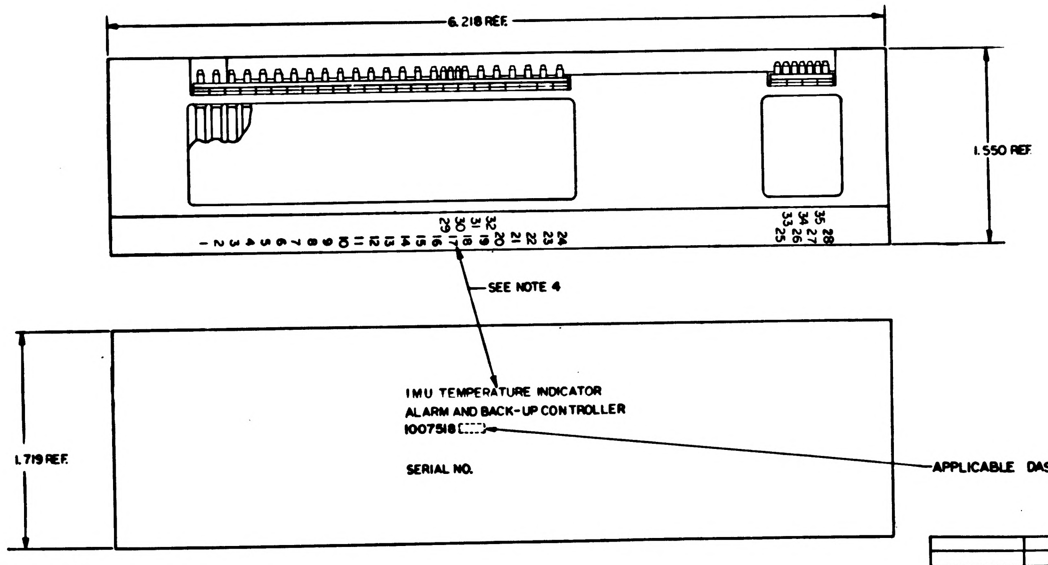
149	87	-200	189	-177	143	-162	2370	-213	8060	-264	27400
150	89	-201	191	-178	145	-163	2430	-214	8250	-265	28000
151	91	-202	193	-179	147	-164	2490	-215	8450	-266	28700
152	93	-203	195	-180	149	-165	2550	-216	8660	-267	29400
153	95	-204	197	-181	151	-166	2610	-217	8870	-268	30100
154	97	-205	199	-182	153	-167	2670	-218	9090		
155	99	-206	201	-183	155	-168	2740	-219	9310		
156	101			-184	157	-169	2800	-220	9530		
157	103			-185	159	-170	2870	-221	9760		
158	105			-186	161	-171	2940	-222	10000		
159	107			-187	163	-172	3010	-223	10200		
160	109			-188	165	-173	3090	-224	10500		
161	111			-189	167	-174	3160	-225	10700		
162	113			-190	169	-175	3240	-226	11000		
163	115			-191	171	-176	3320	-227	11300		

TABLE I

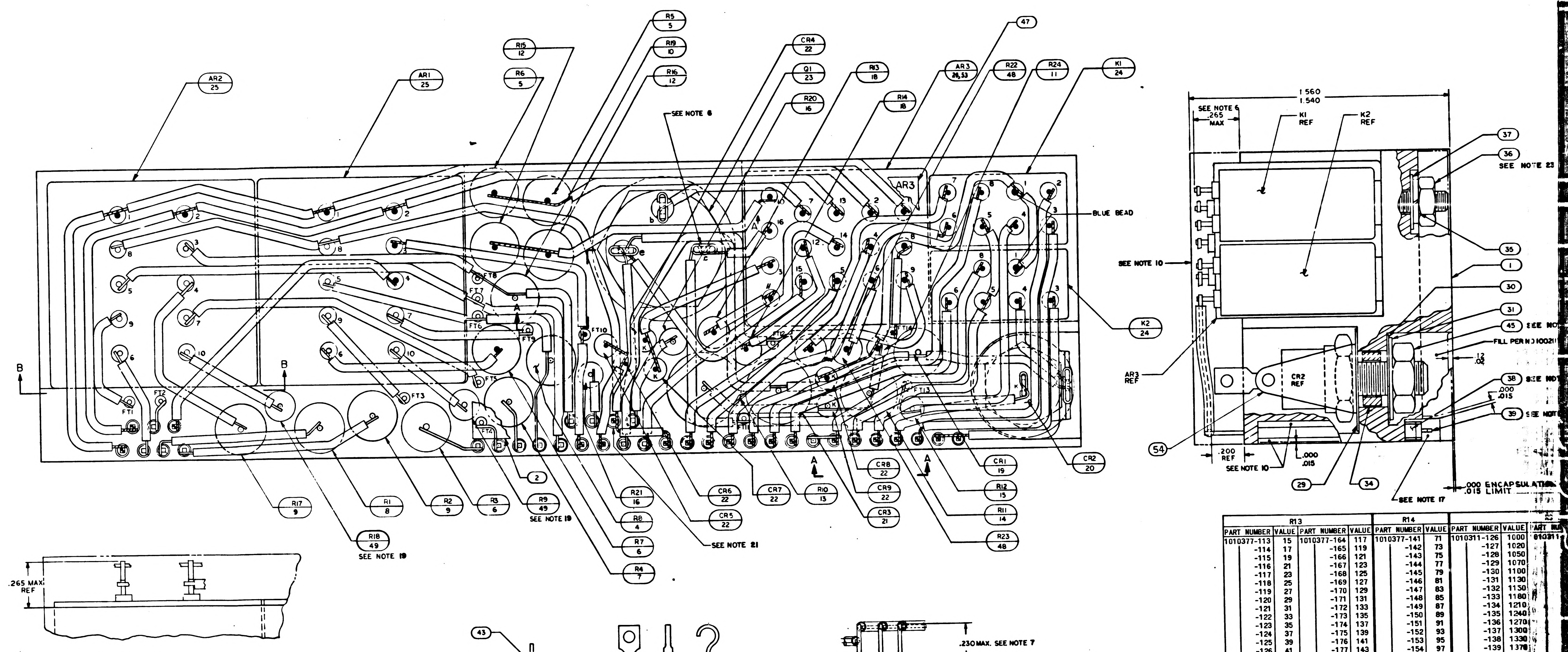
CONFIGURATION	~~MATERIAL~~	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	~~ADHESIVE~~	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE, 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	~~ADHESIVE~~	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	~~PRIMER~~	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE


6.218 REF.
1.550 REF
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
29 30 31 32
33 34 35
25 26 27 28
SEE NOTE 4
1.719 REF.
IMU TEMPERATURE INDICATOR
ALARM AND BACK-UP CONTROLLER
1007518
SERIAL NO.
APPLICABLE DASH NO.

MARKING VIEW
SCALE 2:1

1007577		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES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K1 24
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SEE NOTE 6
AR3
BLUE BEAD
SEE NOTE 10
K2 24
AR3 REF
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CR9 22
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CR6 22
CR5 22
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R1 8
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K1 REF
K2 REF
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SEE NOTE 23
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45 SEE NOTE
FILL PER ND 10021
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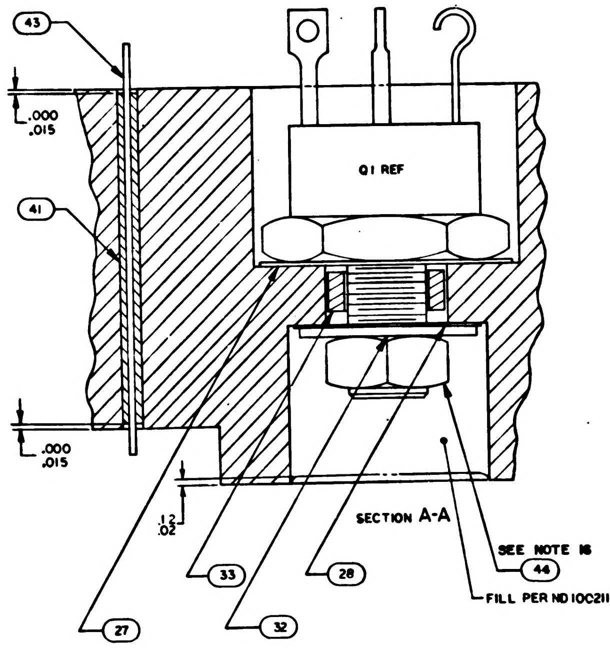
38 SEE NOTE
.000
.015
39 SEE NOTE
CR2 REF
54
.200 REF
SEE NOTE 10
.000
.015
29
34
SEE NOTE 17
.000 ENCAPSULATION
.015 LIMIT
.265 MAX. REF

SECTION B-B

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. ~~BOND FIND NO. 50,51 & 52 TO FIND NO. 38 PER ND 1002237.~~
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) AND ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. ALL CONNECTIONS MADE BY WELDING TO BE PER ND 1002005.
6. SOLDER PER ND 10C2071.
7. CHECKERED INDICATES INTERMEDIATE LEVEL WIRING
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
10. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE. THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
11.
12. PROCURE PER PS 1007162.
13. AR DENOTES AS REQUIRED
14. K DENOTES CATHODE SIDE OF DIODE
15. MOUNTING TORQUE FOR FIND NO. 20 TO BE 10/15 INCH POUNDS
16. MOUNTING TORQUE FOR FIND NO. 23 TO BE 22/26 INCH POUNDS
17. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND
18. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007162 PART TO BE SELECTED FROM CHART.
19. R9 AND R18 TO BE SELECTED AT ASSEMBLY, PART NO. AND DASH NO. AS MARKED ON AMPLIFIER. RANGE OF VALUES (OHMS) SHOWN ON CHART.
20. ASSEMBLE FIND NO. 38 AND 39 PER ND 1002136
21. LEAD FROM AR1-8 TERMINATES AT LOWER WELD CONNECTION OF PIN 30. UPPER LEAD TIES PINS 15 AND 30 TO FT12
22. ALL ELECTRICAL COMPONENTS WHICH ARE NOT STUD MOUNTED AND ALL FEED THRUS TO BE CENTRALIZED AND CEMENTED PER ND 1002009. METHOD J.
23. TORQUE TO 4 ± 1 IN. LB. FOR ASSY OF ITEM 24, 25, AND 26.
24. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS & APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON & ISO PROPYL ALCOHOL. ADHESIVE & COATING MATERIAL PER ND 1002187 TYPE II APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~


43
.000
.015
41
Q1 REF
.000
.015
.12
.02
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27
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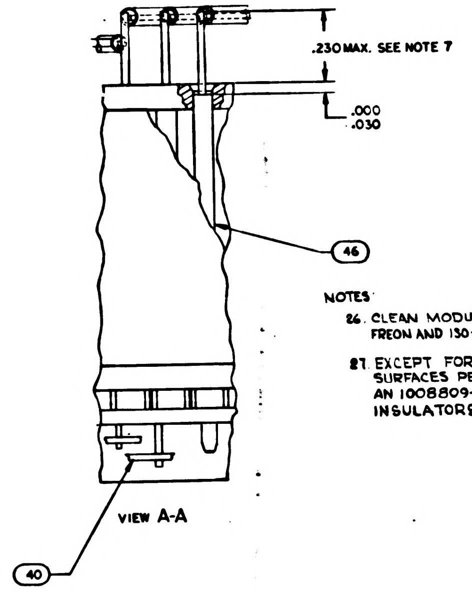
44
SEE NOTE 16
FILL PER ND 10C2117

SECTION A-A


.230 MAX. SEE NOTE 7
.000
.030
46
40

VIEW A-A

NOTES
26. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
27. EXCEPT FOR MODULE MOUNTING SURFACE PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AN 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

R13				R14			
PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE
1010377-113	15	1010377-164	117	1010377-141	71	1010311-126	1000
-114	17	-165	119	-142	73	-127	1020
-115	19	-166	121	-143	75	-128	1050
-116	21	-167	123	-144	77	-129	1070
-117	23	-168	125	-145	79	-130	1100
-118	25	-169	127	-146	81	-131	1130
-119	27	-170	129	-147	83	-132	1150
-120	29	-171	131	-148	85	-133	1180
-121	31	-172	133	-149	87	-134	1210
-122	33	-173	135	-150	89	-135	1240
-123	35	-174	137	-151	91	-136	1270
-124	37	-175	139	-152	93	-137	1300
-125	39	-176	141	-153	95	-138	1330
-126	41	-177	143	-154	97	-139	1370
-127	43	-178	145	-155	99	-140	1400
-128	45	-179	147	-156	101	-141	1430
-129	47	-180	149	-157	103	-142	1470
-130	49	-181	151	-158	105	-143	1500
-131	51	-182	153	-159	107	-144	1540
-132	53	-183	155	-160	109	-145	[illegible]
-133	55	-184	157	-161	111	-146	[illegible]
-134	57	-185	159	-162	113	-147	[illegible]
-135	59	-186	161	-163	115	-148	[illegible]
-136	61	-187	163	-164	117	-149	[illegible]
-137	63	-188	165	-165	119	-150	[illegible]
-138	65	-189	167	-166	121	-151	[illegible]
-139	67	-190	169	-167	123	-152	[illegible]
-140	69	-191	171	-168	125	-153	[illegible]
-141	71	-192	173	-169	127	-154	[illegible]
-142	73	-193	175	-170	129	-155	2000
-143	75	-194	177	-171	131	-156	2050
-144	77	-195	179	-172	133	-157	[illegible]
-145	79	-196	181	-173	135	-158	[illegible]
-146	81	-197	183	-174	137	-159	[illegible]
-147	83	-198	185	-175	139	-160	[illegible]
-148	85	-199	187	-176	141	-161	[illegible]
-149	87	-200	189	-177	143	-162	[illegible]
-150	89	-201	191	-178	145	-163	[illegible]
-151	91	-202	193	-179	147	-164	[illegible]
-152	93	-203	195	-180	149	-165	[illegible]
-153	95	-204	197	-181	151	-166	[illegible]
-154	97	-205	199	-182	153	-167	[illegible]
-155	99	-206	201	-183	155	-168	[illegible]
-156	101			-184	157	-169	[illegible]
-157	103			-185	159	-170	[illegible]
-158	105			-186	161	-171	[illegible]
-159	107			-187	163	-172	[illegible]
-160	109			-188	165	-173	[illegible]
-161	111			-189	167	-174	[illegible]
-162	113			-190	169	-175	[illegible]
-163	115			-191	171	-176	[illegible]

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 9584	[illegible]	WK
B	REVISED PER TDRR 17336	12 MAR 65	GM
C	REVISED PER TDRR 19396	2 JUNE 65	LSC
D	REVISED PER TDRR 19434	3 JUN 65	[illegible]
E	REVISED PER TDRR 19501	[illegible]	[illegible]
F	REVISED PER TDRR 20143	9 JUN 65	[illegible]
G	REVISED PER TDRR 20718	[illegible] 65	[illegible]
H	REVISED PER TDRR 21285	31 JUL 65	WJR
J	REVISED PER TDRR 21514	18 AUG 65	JWP
K	REVISED PER TDRR 22951	11 OCT 65	JWP
L	REVISED PER TDRR 25056	[illegible] JAN 66	[illegible]

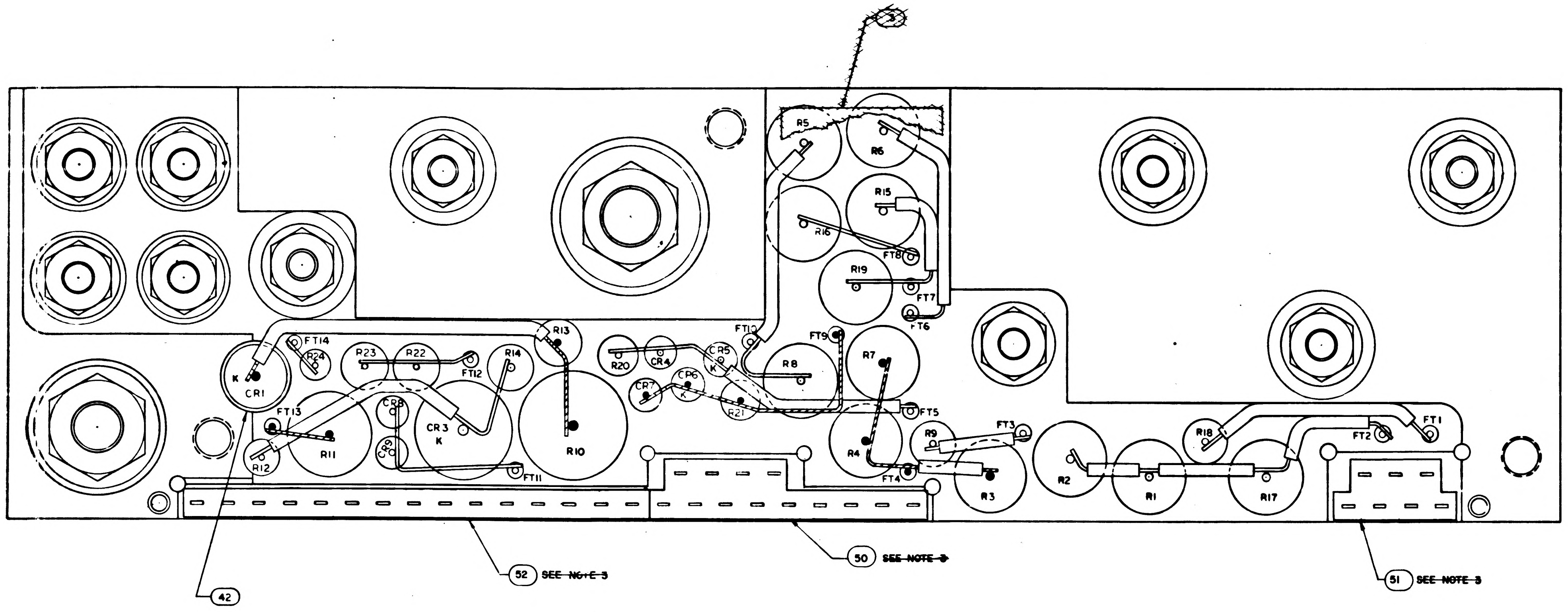
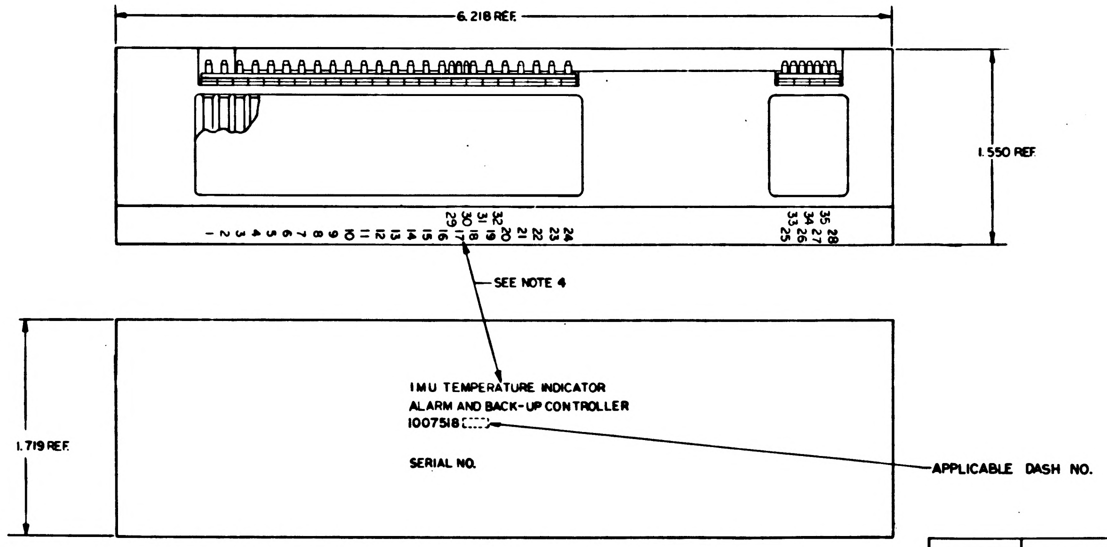

R5
R6
R15
R16
R19
FT8
FT7
FT6
FT10
FT9
R8
R7
CR5
K
CR6
CR4
CR7
R20
R21
R13
FT14
R24
R23
R22
FT12
R14
K
CR1
FT13
CR2
CR3
K
R11
R12
R10
FT11
FT5
R9
FT3
R4
FT4
R3
R2
R1
R18
R17
FT2
FT1
42
52 ~~SEE NOTE 3~~
50 ~~SEE NOTE 3~~
51 ~~SEE NOTE 3~~

TABLE I

CONFIGURATION	~~MATERIAL~~	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	~~ADHESIVE~~	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE / 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	~~ADHESIVE~~	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	~~PRIMER~~	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE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1.550 REF
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24
29 30 31 32
25 26 27 28
33 34 35
SEE NOTE 4
1.719 REF.
IMU TEMPERATURE INDICATOR
ALARM AND BACK-UP CONTROLLER
1007518-
SERIAL NO.
APPLICABLE DASH NO.

MARKING VIEW
SCALE 2:1

		QUANTITY REQUIRED 021	QUANTITY REQUIRED 011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		1	1		2008013-9	TERMINAL LUG, SOLDER-FLAT	54
		1	–		1018900-021	AMPLIFIER	53
		1	1		1008540-15	GASKET, CONNECTOR-MINIATURE	52
		X	X		1010140	SCHEMATIC, ELECTRICAL	
		1	1		1008545	GASKET, CONNECTOR MINIATURE	51
		1	1		1008546	GASKET, CONNECTOR MINIATURE	50
		2	2		1010311- SEE NOTE 19	RESISTOR	49
		2	2		1010377-237	RESISTOR	48
		1	1		1008185	INSULATOR TOP, AMPL	47
		AR	AR		1006776-20	INSULATION SLEEVING	46
		1	1		MS20341-10B	NUT HEX	45
		1	1		MS20341-416B	NUT HEX	44
		AR	AR		1006757-8	WIRE ELECTRICAL .020 DIA.	43
		AR	AR		MIL-I-23053-8	INSULATION SLEEVING	42
		AR	AR		1006776-21	INSULATION SLEEVING	41
		AR	AR		1006757-1	WIRE ELECT. .010 X .020	40
		35	35		1006782-5	CONTACT WRAPOST MALE	39
		35	35		1006775	INSULATOR WRAPOST MALE	38
		10	10		1008070-5	WASHER, FLAT	37
		10	10		MS20341-4A	NUT-HEX	36
		10	10		MS35338-78	WASHER, LOCK	35
		1	1		1008021-1	BUSHING INSULATOR	34
		1	1		1008021-2	BUSHING INSULATOR	33
		1	1		1008020-2	WASHER FLAT	32
		1	1		1008020-1	WASHER FLAT	31
		1	1		1008024-1	WASHER INSULATOR	30
		1	1		1008024-2	WASHER INSULATOR	29
		1	1		1008024-4	WASHER INSULATOR	28
		1	1		1008024-3	WASHER INSULATOR	27
		–	1		1018900-011	AMPLIFIER	26
		2	2		1000284-011	AMPLIFIER	25
		2	2		1010353-1	RELAY	24
		1	1		1010273-1	TRANSISTOR	23
		6	6		1010362-3	DIODE	22
		1	1		1010441-2	DIODE	21
		1	1		1010331-20	DIODE	20
		1	1		1010440-1	DIODE	19
		X	X		1010377 SEE NOTE 18	RESISTOR	18
							17
		2	2		1010364-368	RESISTOR	16
		1	1		1010364-44	RESISTOR	15
		1	1		1010361-112	RESISTOR	14
		1	1		1010452-167	RESISTOR	13
		2	2		1010450-9	RESISTOR	12
		1	1		1010604-22	RESISTOR	11
		1	1		1010450-10	RESISTOR	10
		2	2		1010450-12	RESISTOR	9
		1	1		1010450-13	RESISTOR	8
		1	1		1010450-14	RESISTOR	7
		2	2		1010450-3	RESISTOR	6
		2	2		1010450-2	RESISTOR	5
		1	1		1010450-11	RESISTOR	4
		–	~~1~~		~~1008074~~	~~INSULATOR BOTTOM~~	3
		1	1		1008186	INSULATOR TOP	2
		1	1		1007072	HEAT SINK	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007577		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS X
DECIMALS .XX ± .02 .XXX ± .005
ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN S Agne DATE 1 SEP 64
CHECKED A Ulsord 4 SEP 64
APPROVAL
APPROVAL D B Fost 10/5/64
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

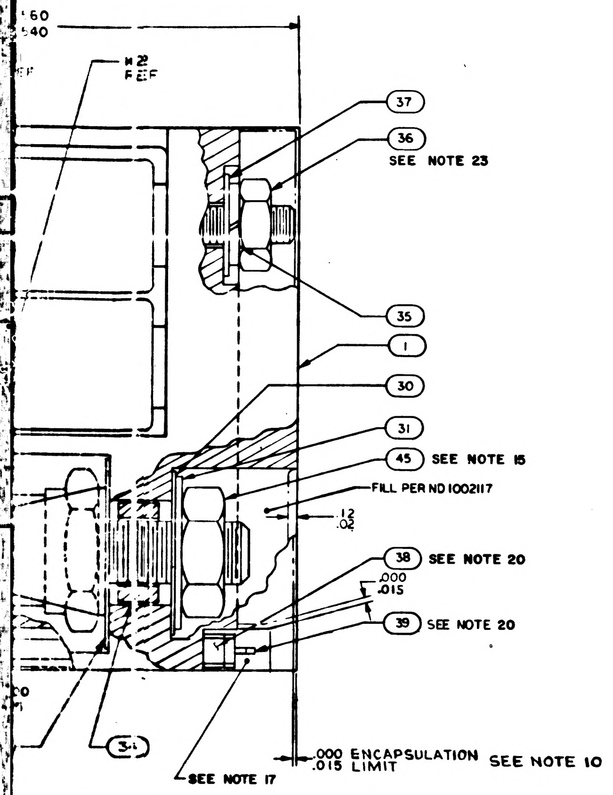
IMU TEMP INDICATOR ALARM AND BACK-UP CONTROLLER ASSEMBLY

CODE IDENT NO 80230
SIZE J
NASA DRAWING NO 1007518
SCALE 5:1
WT
SHEET 1 OF 1

1007518 L 1

1007518 L

3/1007518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R28
REF
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SEE NOTE 23
35
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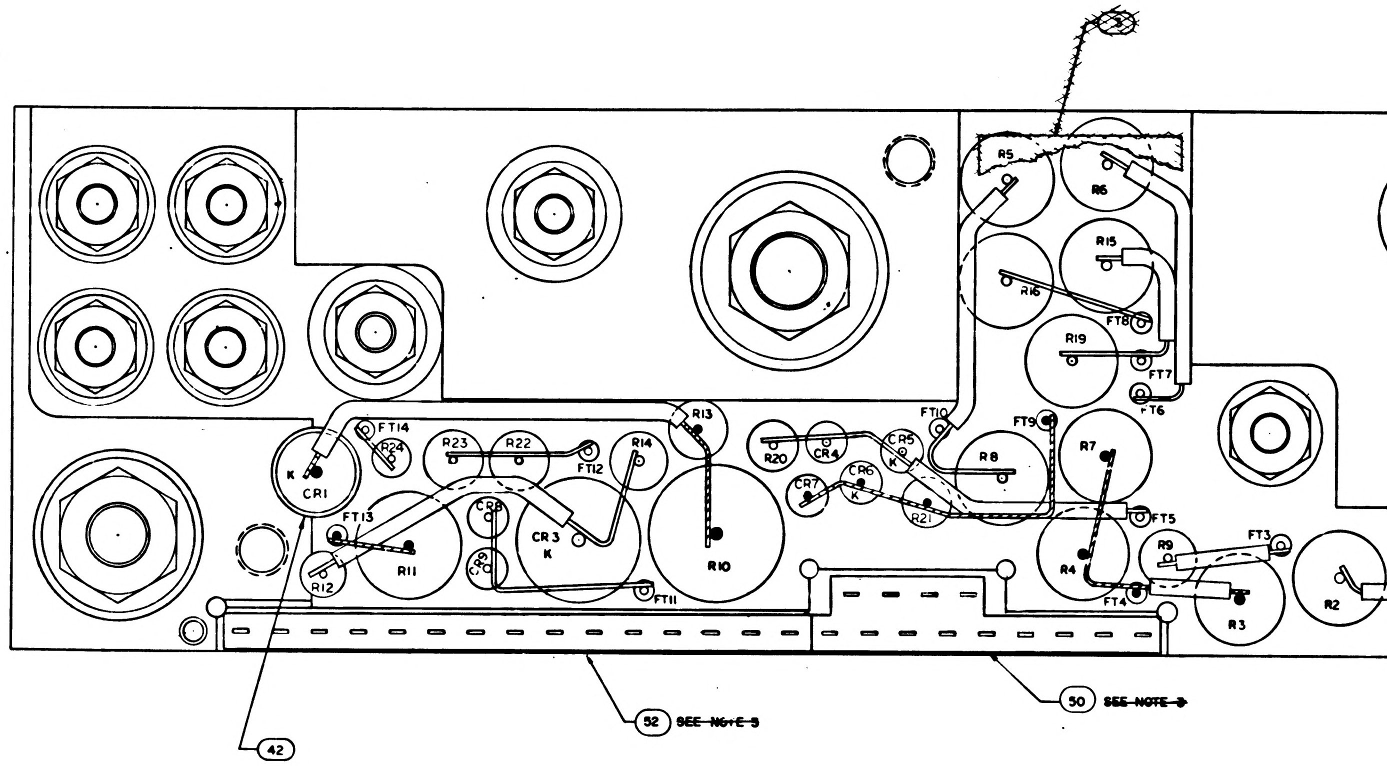
31
45
SEE NOTE 15
FILL PER ND 1002117
.12
.04
38
SEE NOTE 20
.000
.015
39
SEE NOTE 20
34
SEE NOTE 17
.000 ENCAPSULATION
.015 LIMIT
SEE NOTE 10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CR7
CR6
K
R21
R8
FT9
R7
FT5
R4
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52
~~SEE NOTE 3~~
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~~SEE NOTE 3~~
51
~~SEE NOTE 3~~

		R14		R9 AND R18					
NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE
377-164	117	1010377-141	71	1010311-126	1000	1010311-177	3400	1010311-228	11500
-165	119	-142	73	-127	1020	-178	3480	-229	11800
-166	121	-143	75	-128	1050	-179	3570	-230	12100
-167	123	-144	77	-129	1070	-180	3650	-231	12400
-168	125	-145	79	-130	1100	-181	3740	-232	12700
-169	127	-146	81	-131	1130	-182	3830	-233	13000
-170	129	-147	83	-132	1150	-183	3920	-234	13300
-171	131	-148	85	-133	1180	-184	4020	-235	13700
-172	133	-149	87	-134	1210	-185	4120	-236	14000
-173	135	-150	89	-135	1240	-186	4220	-237	14300
-174	137	-151	91	-136	1270	-187	4320	-238	14700
-175	139	-152	93	-137	1300	-188	4420	-239	15000
-176	141	-153	95	-138	1330	-189	4530	-240	15400
-177	143	-154	97	-139	1370	-190	4640	-241	15800
-178	145	-155	99	-140	1400	-191	4750	-242	16200
-179	147	-156	101	-141	1430	-192	4870	-243	16500
-180	149	-157	103	-142	1470	-193	4990	-244	16900
-181	151	-158	105	-143	1500	-194	5110	-245	17400
-182	153	-159	107	-144	1540	-195	5230	-246	17800
-183	155	-160	109	-145	1580	-196	5360	-247	18200
-184	157	-161	111	-146	1620	-197	5490	-248	18700
-185	159	-162	113	-147	1650	-198	5620	-249	19100
-186	161	-163	115	-148	1690	-199	5760	-250	19600
-187	163	-164	117	-149	1740	-200	5900	-251	20000
-188	165	-165	119	-150	1780	-201	6040	-252	20500
-189	167	-166	121	-151	1820	-202	6190	-253	21000
-190	169	-167	123	-152	1870	-203	6340	-254	21500
-191	171	-168	125	-153	1910	-204	6490	-255	22100
-192	173	-169	127	-154	1960	-205	6650	-256	22600
-193	175	-170	129	-155	2000	-206	6810	-257	23200
-194	177	-171	131	-156	2050	-207	6980	-258	23700
-195	179	-172	133	-157	2100	-208	7150	-259	24300
-196	181	-173	135	-158	2150	-209	7320	-260	24900
-197	183	-174	137	-159	2210	-210	7500	-261	25500
-198	185	-175	139	-160	2260	-211	7680	-262	26100
-199	187	-176	141	-161	2320	-212	7870	-263	26700
-200	189	-177	143	-162	2370	-213	8060	-264	27400
-201	191	-178	145	-163	2430	-214	8250	-265	28000
-202	193	-179	147	-164	2490	-215	8450	-266	28700
-203	195	-180	149	-165	2550	-216	8660	-267	29400
-204	197	-181	151	-166	2610	-217	8870	-268	30100
-205	199	-182	153	-167	2670	-218	9090		
-206	201	-183	155	-168	2740	-219	9310		
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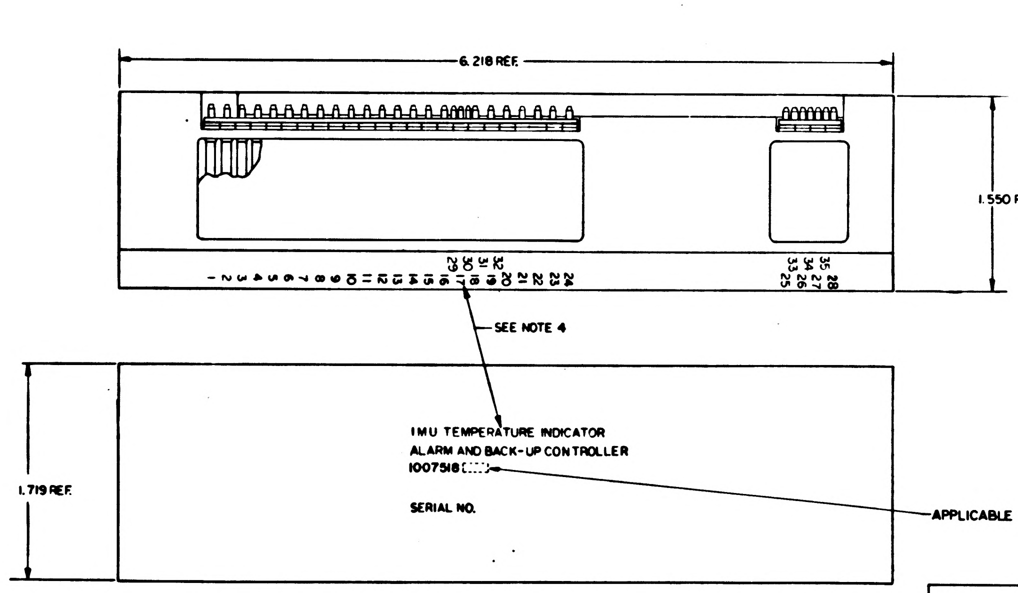
		-185	159	-170	2870	-221	9760		
		-186	161	-171	2940	-222	10000		
		-187	163	-172	3010	-223	10200		
		-188	165	-173	3090	-224	10500		
		-189	167	-174	3160	-225	10700		
		-190	169	-175	3240	-226	11000		
		-191	171	-176	3320	-227	11300		

TABLE I

CONFIGURATION	~~MATERIAL~~	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	~~ADHESIVE~~	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE, 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	~~ADHESIVE~~	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	~~PRIMER~~	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE


6.218 REF
1.550 REF
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SEE NOTE 4
1.719 REF
IMU TEMPERATURE INDICATOR
ALARM AND BACK-UP CONTROLLER
1007518-
SERIAL NO.
APPLICABLE DASH NO.

MARKING VIEW
SCALE 2:1

		1	1		200
		1	—		101
		1	1		100
		☒	☒		101
		1	1		100
		1	1		100
		2	2		101
		2	2		101
		1	1		100
		AR	AR		100
		1	1		MS2
		1	1		MS2
		AR	AR		100
		AR	AR		MIL
		AR	AR		100
		AR	AR		100
		35	35		100
		35	35		100
		10	10		100
		10	10		MS2
		10	10		MS
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		1	1		100
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		—	~~1~~		~~10~~
		1	1		10
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		021	011		
QUANTITY REQUIRED					

1007577		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

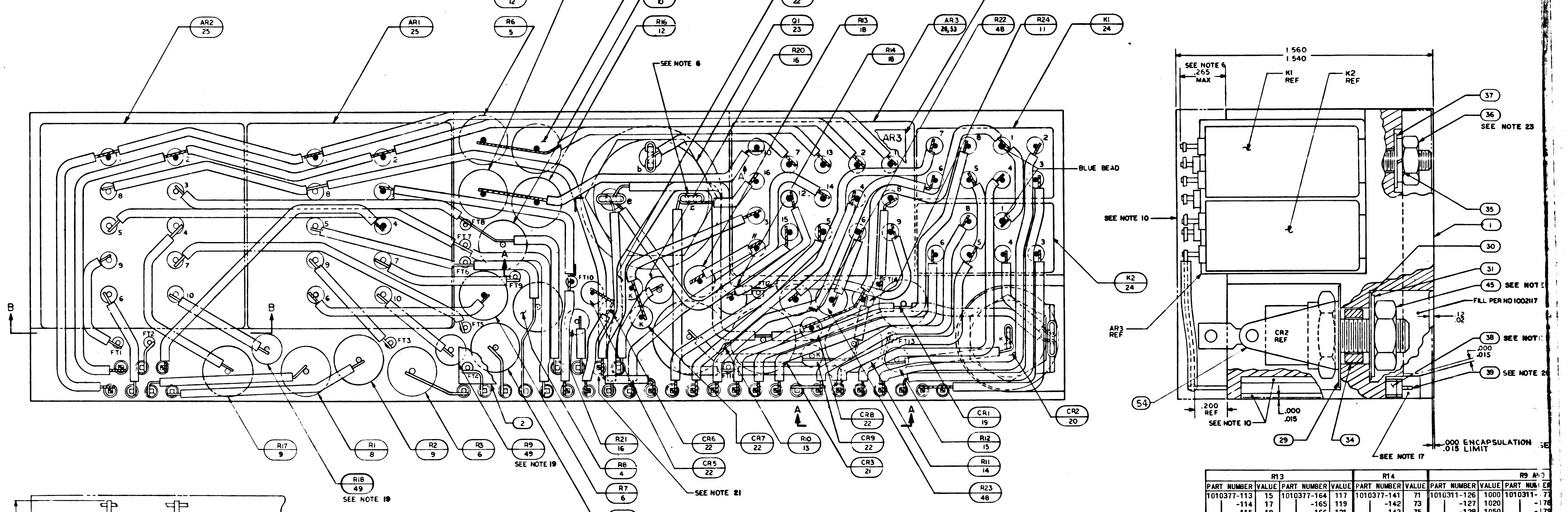
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
X XX ± .02
.XXX ± .005
DO NOT SCALE THIS DRAWING

MATERIAL

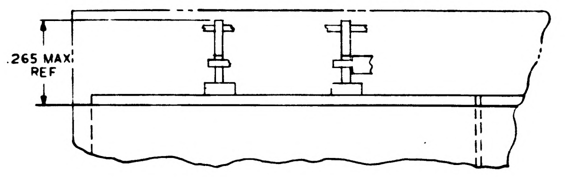
HEAT TREATMENT

FINAL FINISH

DRAWN
CHECKED
APPROVAL
APPROVAL



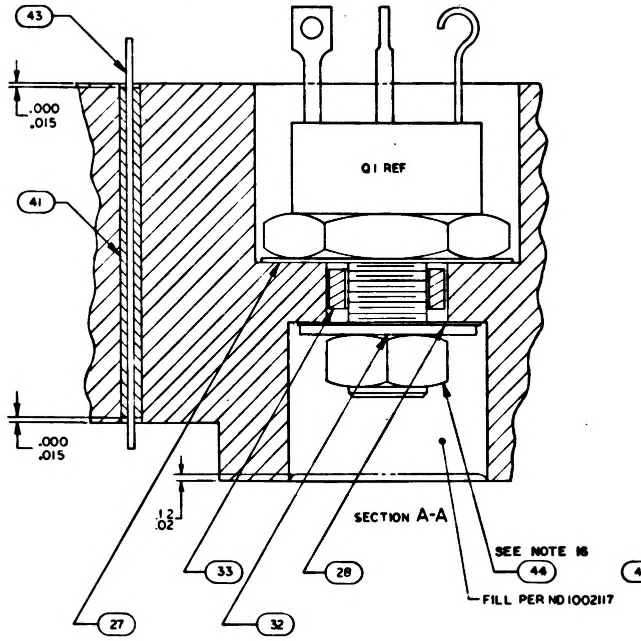
AR2 25
AR1 25
R15 12
R6 5
R5 5
R19 10
R16 12
CR4 22
Q1 23
R20 16
R13 18
R14 18
AR3 26,53
R22 48
R24 11
K1 24
47
SEE NOTE 6
BLUE BEAD
SEE NOTE 10
K2 24
AR3 REF
AR3
CR2 20
CR1 19
R12 15
R11 14
R23 48
CR8 22
CR9 22
CR3 21
R10 13
CR7 22
CR6 22
CR5 22
SEE NOTE 21
R21 16
R8 4
R7 6
R4 7
R9 49
SEE NOTE 19
R3 6
R2 9
R1 8
R17 9
R18 49
SEE NOTE 19
2
FT1
FT2
FT3
FT5
FT6
FT7
FT8
FT9
FT10
FT12
FT13
FT14
B
A
K
1.560
1.540
SEE NOTE 6
.265 MAX
K1 REF
K2 REF
37
36
SEE NOTE 23
35
1
30
31
45 SEE NOTE
FILL PER ND 1002117
.12 .02
38 SEE NOTE
.000 .015
39 SEE NOTE 20
CR2 REF
54
.200 REF
SEE NOTE 10
.000 .015
29
34
SEE NOTE 17
.000 ENCAPSULATION .015 LIMIT



SECTION B-B

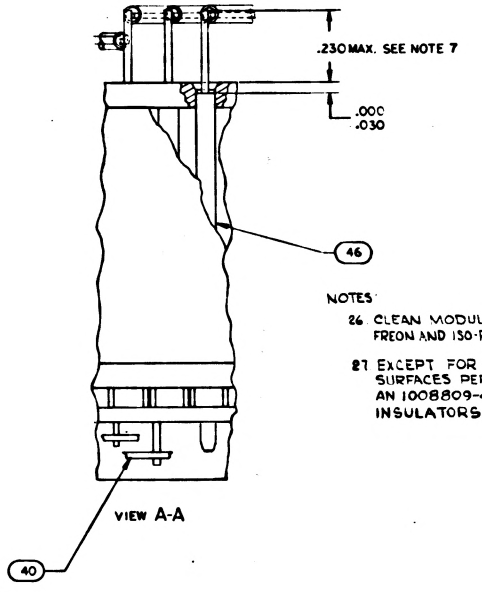
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. BOND ~~FIND NO. 50,51 & 52 TO FIND NO. 38~~ PER ND ~~1002237~~.
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) AND ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. ALL CONNECTIONS MADE BY WELDING TO BE PER ND 1002005.
6. SOLDER PER ND 1002071.
7. CHECKERED INDICATES INTERMEDIATE LEVEL WIRING
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
10. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE. THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
11.
12. PROCURE PER PS 1007162.
13. AR DENOTES AS REQUIRED
14. K DENOTES CATHODE SIDE OF DIODE
15. MOUNTING TORQUE FOR FIND NO. 20 TO BE 10/15 INCH POUNDS
16. MOUNTING TORQUE FOR FIND NO. 23 TO BE 22/26 INCH POUNDS
17. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND
18. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007162 PART TO BE SELECTED FROM CHART.
19. R9 AND R18 TO BE SELECTED AT ASSEMBLY, PART NO. AND DASH NO. AS MARKED ON AMPLIFIER. RANGE OF VALUES (OHMS) SHOWN ON CHART.
20. ASSEMBLE FIND NO. 38 AND 39 PER ND 1002136
21. LEAD FROM AR1-8 TERMINATES AT LOWER WELD CONNECTION OF PIN 30. UPPER LEAD TIES PINS 15 AND 30 TO FT12
22. ALL ELECTRICAL COMPONENTS WHICH ARE NOT STUD MOUNTED AND ALL FEED THRUS TO BE CENTRALIZED AND CEMENTED PER ND 1002009. METHOD J.
23. TORQUE TO 4 ± 1 IN. LB. FOR ASSY OF ITEM 24, 25, AND 26.
24. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS & APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON & ISO-PROPYL ALCOHOL. ADHESIVE & COATING MATERIAL PER ND 1002187 TYPE II APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~



43
.000 .015
41
Q1 REF
.000 .015
.12 .02
27
33
32
28
44
SEE NOTE 16
FILL PER ND 1002117

SECTION A-A



.230 MAX. SEE NOTE 7
.000 .030
46
40

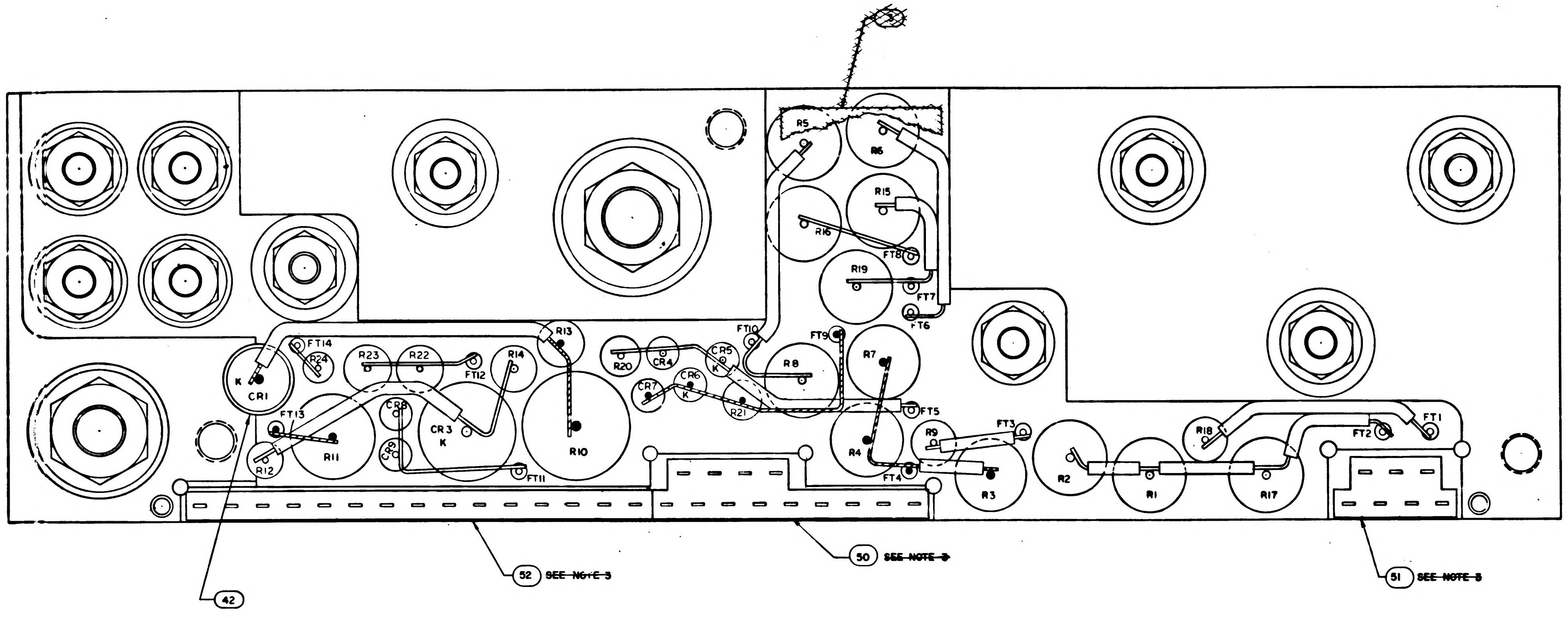
VIEW A-A

NOTES

26. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
27. EXCEPT FOR MODULE MOUNTING SURFACE PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AN 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

R13				R14		R9 AND		
PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER
1010377-113	15	1010377-164	117	1010377-141	71	1010311-126	1000	1010311-177
-114	17	-165	119	-142	73	-127	1020	-178
-115	19	-166	121	-143	75	-128	1050	-179
-116	21	-167	123	-144	77	-129	1070	-180
-117	23	-168	125	-145	79	-130	1100	-181
-118	25	-169	127	-146	81	-131	1130	-182
-119	27	-170	129	-147	83	-132	1150	-183
-120	29	-171	131	-148	85	-133	1180	-184
-121	31	-172	133	-149	87	-134	1210	-185
-122	33	-173	135	-150	89	-135	1240	-186
-123	35	-174	137	-151	91	-136	1270	-187
-124	37	-175	139	-152	93	-137	1300	-188
-125	39	-176	141	-153	95	-138	1330	-189
-126	41	-177	143	-154	97	-139	1370	-190
-127	43	-178	145	-155	99	-140	1400	-191
-128	45	-179	147	-156	101	-141	1430	-192
-129	47	-180	149	-157	103	-142	1470	-193
-130	49	-181	151	-158	105	-143	1500	-194
-131	51	-182	153	-159	107	-144	1540	-195
-132	53	-183	155	-160	109	-145	1580	-196
-133	55	-184	157	-161	111	-146	1620	-197
-134	57	-185	159	-162	113	-147	1650	-198
-135	59	-186	161	-163	115	-148	1690	-199
-136	61	-187	163	-164	117	-149	1740	-200
-137	63	-188	165	-165	119	-150	1780	-201
-138	65	-189	167	-166	121	-151	1820	-202
-139	67	-190	169	-167	123	-152	1870	-203
-140	69	-191	171	-168	125	-153	1910	-204
-141	71	-192	173	-169	127	-154	1960	-205
-142	73	-193	175	-170	129	-155	2000	-206
-143	75	-194	177	-171	131	-156	2050	-207
-144	77	-195	179	-172	133	-157	2100	-208
-145	79	-196	181	-173	135	-158	2150	-209
-146	81	-197	183	-174	137	-159	2210	-210
-147	83	-198	185	-175	139	-160	2260	-211
-148	85	-199	187	-176	141	-161	2320	-212
-149	87	-200	189	-177	143	-162	2370	-213
-150	89	-201	191	-178	145	-163	2430	-214
-151	91	-202	193	-179	147	-164	2490	-215
-152	93	-203	195	-180	149	-165	2550	-216
-153	95	-204	197	-181	151	-166	2610	-217
-154	97	-205	199	-182	153	-167	2670	-218
-155	99	-206	201	-183	155	-168	2740	-219
-156	101			-184	157	-169	2800	-220
-157	103			-185	159	-170	2870	-221
-158	105			-186	161	-171	2940	-222
-159	107			-187	163	-172	3010	-223
-160	109			-188	165	-173	3090	-224
-161	111			-189	167	-174	3160	-225
-162	113			-190	169	-175	3240	-226
-163	115			-191	171	-176	3320	-227

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 14584	1/8/64	WK
B	REVISED PER TDRR 17336	4 MAR 65	GM EF
C	REVISED PER TDRR 19396	2 JUNE 65	LGC MEM
D	REVISED PER TDRR 19434	3 JUN 65	[illegible]
E	REVISED PER TDRR 19501	1 JUN 65	[illegible]
F	REVISED PER TDRR 20143	9 JUN 65	[illegible]
G	REVISED PER TDRR 20718	13 JUL 65	SRA WI
H	REVISED PER TDRR 21285	31 JUL 65	WJR PJ
J	REVISED PER TDRR 21514	18 AUG 65	JWP CP
K	REVISED PER TDRR 22951	1 OCT 65	JWP EF
L	REVISED PER TDRR 25056	6 JAN 66	EP JRC
M	REVISED PER TDRR 25516	3 FEB 66	[illegible]


R5
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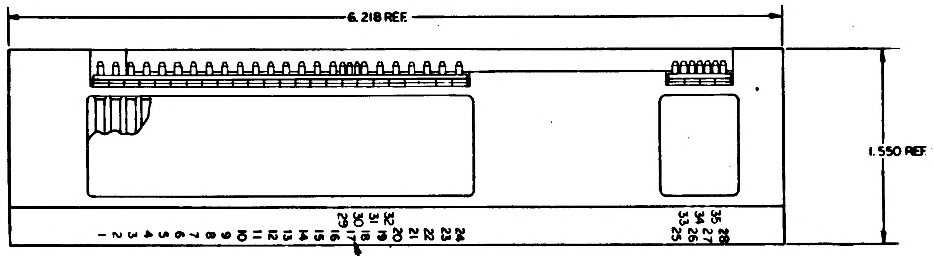
42
52 ~~SEE NOTE 3~~
50 ~~SEE NOTE 3~~
51 ~~SEE NOTE 3~~

TABLE I

CONFIGURATION	~~MATERIAL~~	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	~~ADHESIVE~~	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE / 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	~~ADHESIVE~~	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	~~PRIMER~~	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE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1.550 REF
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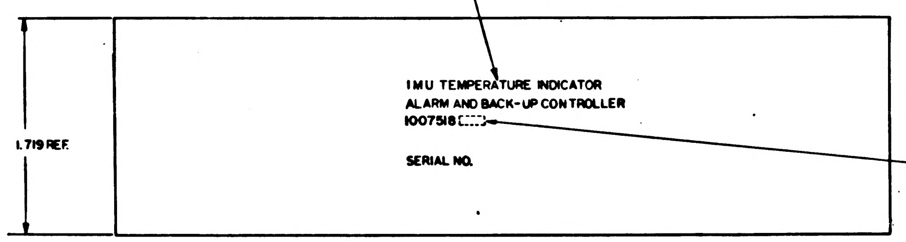
25 26 27 28 29 30 31 32 33 34 35

SEE NOTE 4


IMU TEMPERATURE INDICATOR
ALARM AND BACK-UP CONTROLLER
1007518-[ ]
SERIAL NO.
1.719 REF.
APPLICABLE DASH NO.

MARKING VIEW
SCALE 2:1

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		1	1		2008013-9	TERMINAL LUG, SOLDER-FLAT	54
		1	—		1018900-021	AMPLIFIER	53
		1	1		1008540-15	GASKET, CONNECTOR-MINIATURE	52
		X	X		1010140	SCHEMATIC, ELECTRICAL	
		1	1		1008545	GASKET, CONNECTOR MINIATURE	51
		1	1		1008546	GASKET, CONNECTOR MINIATURE	50
		2	2		1010311- SEE NOTE 19	RESISTOR	49
		2	2		1010377-237	RESISTOR	48
		1	1		1008185	INSULATOR TOP, AMPL	47
		AR	AR		1006776-20	INSULATION SLEEVING	46
		1	1		MS20341-10B	NUT HEX	45
		1	1		MS20341-416B	NUT HEX	44
		AR	AR		1010848-2	WIRE ELECTRICAL .020 DIA.	43
		AR	AR		MIL-I-23053-8	INSULATION SLEEVING	42
		AR	AR		1006776-21	INSULATION SLEEVING	41
		AR	AR		1006757-1	WIRE ELECT. .010 X .020	40
		35	35		1006782-5	CONTACT WRAPOST MALE	39
		35	35		1006775	INSULATOR WRAPOST MALE	38
		10	10		1008070-5	WASHER, FLAT	37
		10	10		MS20341-4A	NUT-HEX	36
		10	10		MS35338-78	WASHER, LOCK	35
		1	1		1008021-1	BUSHING INSULATOR	34
		1	1		1008021-2	BUSHING INSULATOR	33
		1	1		1008020-2	WASHER FLAT	32
		1	1		1008020-1	WASHER FLAT	31
		1	1		1008024-1	WASHER INSULATOR	30
		1	1		1008024-2	WASHER INSULATOR	29
		1	1		1008024-4	WASHER INSULATOR	28
		1	1		1008024-3	WASHER INSULATOR	27
		—	1		1018900-011	AMPLIFIER	26
		2	2		1000284-011	AMPLIFIER	25
		2	2		1010353-1	RELAY	24
		1	1		1010273-1	TRANSISTOR	23
		6	6		1010362-3	DIODE	22
		1	1		1010441-2	DIODE	21
		1	1		1010331-20	DIODE	20
		1	1		1010440-1	DIODE	19
		X	X		1010377 SEE NOTE 18	RESISTOR	18
							17
		2	2		1010364-368	RESISTOR	16
		1	1		1010364-44	RESISTOR	15
		1	1		1010361-112	RESISTOR	14
		1	1		1010452-167	RESISTOR	13
		2	2		1010450-9	RESISTOR	12
		1	1		1010604-22	RESISTOR	11
		1	1		1010450-10	RESISTOR	10
		2	2		1010450-12	RESISTOR	9
		1	1		1010450-13	RESISTOR	8
		1	1		1010450-14	RESISTOR	7
		2	2		1010450-3	RESISTOR	6
		2	2		1010450-2	RESISTOR	5
		1	1		1010450-11	RESISTOR	4
		—	~~1~~		~~1000074~~	~~INSULATOR BOTTOM~~	3
		1	1		1008186	INSULATOR TOP	2
		1	1		1007072	HEAT SINK	1
QUANTITY REQUIRED					LIST OF MATERIALS		

1007518 M

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007577		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS X ±   DECIMALS XX ±.02 .XXX ±.005   ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN S. Agne DATE 1 SEP 64
CHECKED A. Ulland 4 SEP 64
APPROVAL [illegible]
APPROVAL D. R. Test [illegible]
NASA APPROVAL [illegible] 10-6-64
MIT APPROVAL W Kupfer 6 Oct 64

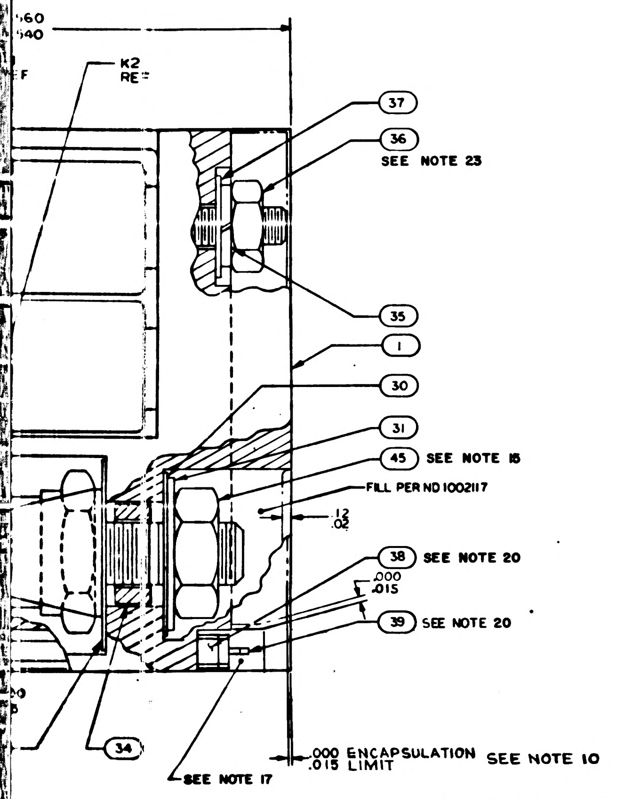
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

IMU TEMP INDICATOR ALARM AND BACK-UP CONTROLLER ASSEMBLY

CODE IDENT NO. 80230 | SIZE J | NASA DRAWING NO. 1007518
SCALE 5:1 | WT | SHEET 1 OF 1

1007518 M 1

3710007518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K2
RE=
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SEE NOTE 23
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SEE NOTE 16
FILL PER ND 1002117
.12
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SEE NOTE 20
.000
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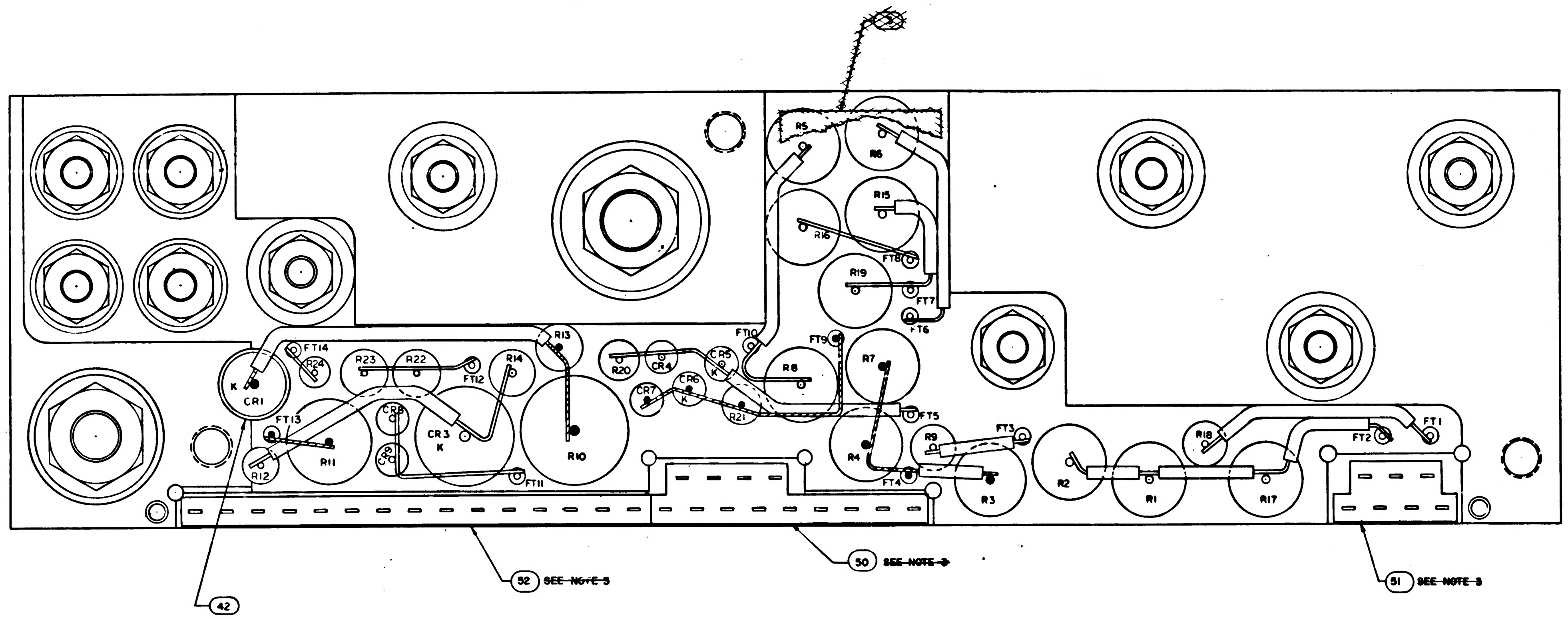
SEE NOTE 20
34
SEE NOTE 17
.000 ENCAPSULATION
.015 LIMIT
SEE NOTE 10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R11
R12
R10
FT11
R4
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R2
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R18
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R17
42
52
~~SEE NOTE 3~~
50
~~SEE NOTE 3~~
51
~~SEE NOTE 3~~

		R14		R9 AND R18					
NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE
377-164	117	1010377-141	71	1010311-126	1000	1010311-177	3400	1010311-228	11500
-165	119	-142	73	-127	1020	-178	3480	-229	11800
-166	121	-143	75	-128	1050	-179	3570	-230	12100
-167	123	-144	77	-129	1070	-180	3650	-231	12400
-168	125	-145	79	-130	1100	-181	3740	-232	12700
-169	127	-146	81	-131	1130	-182	3830	-233	13000
-170	129	-147	83	-132	1150	-183	3920	-234	13300
-171	131	-148	85	-133	1180	-184	4020	-235	13700
-172	133	-149	87	-134	1210	-185	4120	-236	14000
-173	135	-150	89	-135	1240	-186	4220	-237	14300
-174	137	-151	91	-136	1270	-187	4320	-238	14700
-175	139	-152	93	-137	1300	-188	4420	-239	15000
-176	141	-153	95	-138	1330	-189	4530	-240	15400
-177	143	-154	97	-139	1370	-190	4640	-241	15800
-178	145	-155	99	-140	1400	-191	4750	-242	16200
-179	147	-156	101	-141	1430	-192	4870	-243	16500
-180	149	-157	103	-142	1470	-193	4990	-244	16900
-181	151	-158	105	-143	1500	-194	5110	-245	17400
-182	153	-159	107	-144	1540	-195	5230	-246	17800
-183	155	-160	109	-145	1580	-196	5360	-247	18200
-184	157	-161	111	-146	1620	-197	5490	-248	18700
-185	159	-162	113	-147	1650	-198	5620	-249	19100
-186	161	-163	115	-148	1690	-199	5760	-250	19600
-187	163	-164	117	-149	1740	-200	5900	-251	20000
-188	165	-165	119	-150	1780	-201	6040	-252	20500
-189	167	-166	121	-151	1820	-202	6190	-253	21000
-190	169	-167	123	-152	1870	-203	6340	-254	21500
-191	171	-168	125	-153	1910	-204	6490	-255	22100
-192	173	-169	127	-154	1960	-205	6650	-256	22600
-193	175	-170	129	-155	2000	-206	6810	-257	23200
-194	177	-171	131	-156	2050	-207	6980	-258	23700
-195	179	-172	133	-157	2100	-208	7150	-259	24300
-196	181	-173	135	-158	2150	-209	7320	-260	24900
-197	183	-174	137	-159	2210	-210	7500	-261	25500
-198	185	-175	139	-160	2260	-211	7680	-262	26100
-199	187	-176	141	-161	2320	-212	7870	-263	26700
-200	189	-177	143	-162	2370	-213	8060	-264	27400
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-202	193	-179	147	-164	2490	-215	8450	-266	28700
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-204	197	-181	151	-166	2610	-217	8870	-268	30100
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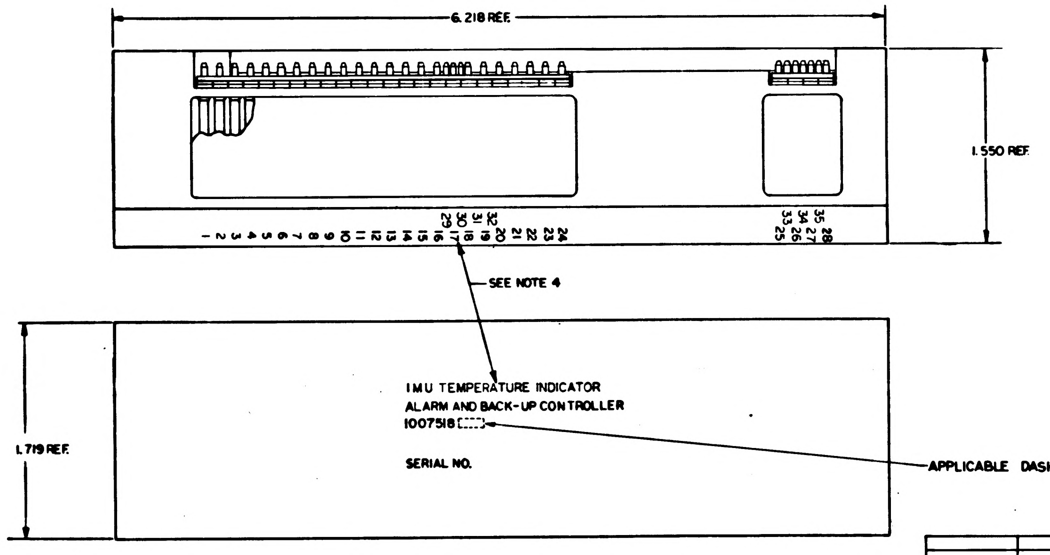
-206	201	-183	155	-168	2740	-219	9310		
		-184	157	-169	2800	-220	9530		
		-185	159	-170	2870	-221	9760		
		-186	161	-171	2940	-222	10000		
		-187	163	-172	3010	-223	10200		
		-188	165	-173	3090	-224	10500		
		-189	167	-174	3160	-225	10700		
		-190	169	-175	3240	-226	11000		
		-191	171	-176	3320	-227	11300		

TABLE I

CONFIGURATION	~~MATERIAL~~	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	~~ADHESIVE~~	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE, 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100 % OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	~~ADHESIVE~~	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100 % OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	~~PRIMER~~	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE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1.550 REF.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
29 30 31 32
33 34 35
25 26 27 28
SEE NOTE 4
IMU TEMPERATURE INDICATOR
ALARM AND BACK-UP CONTROLLER
1007518 [ ]
SERIAL NO.
1.719 REF.
APPLICABLE DASH NO.

MARKING VIEW
SCALE 2:1

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		1	1	
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		1	1	
		1	1	
		AR	AR	
		AR	AR	
		AR	AR	
		AR	AR	
		35	35	
		35	35	
		10	10	
		10	10	
		10	10	
		1	1	
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QUANTITY REQUIRED				

1007577		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

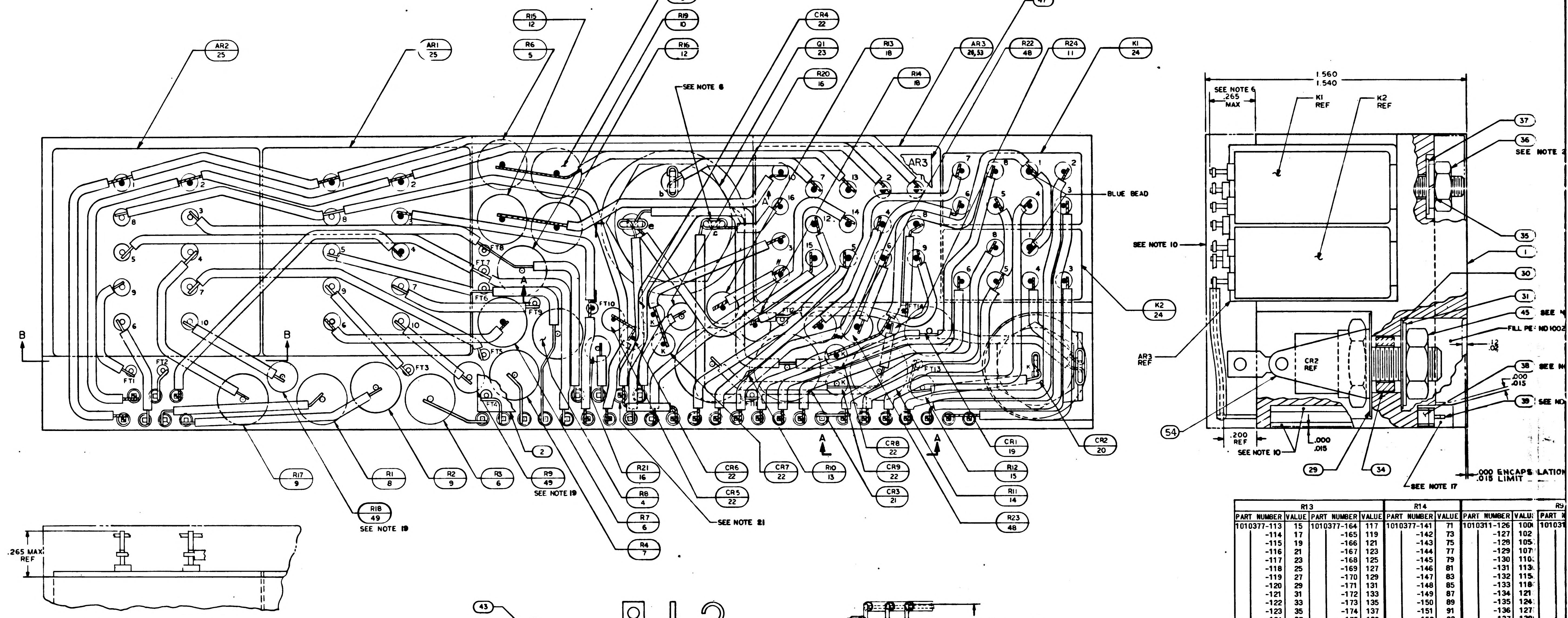
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
X - XX ± .02 ± 1°
.XXX ± .005
DO NOT SCALE THIS DRAWING

MATERIAL

HEAT TREATMENT

FINAL FINISH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25
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R5
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CR4
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Q1
23
R20
16
R13
18
R14
18
AR3
26,33
R22
48
R24
11
K1
24
47
SEE NOTE 6
AR3
BLUE BEAD
K2
24
FT1
FT2
FT3
FT4
FT5
FT6
FT7
FT8
FT9
FT10
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FT13
FT14
B
B
A
A
K
R17
9
R18
49
SEE NOTE 19
R1
8
R2
9
R3
6
R9
49
SEE NOTE 19
2
R21
16
R8
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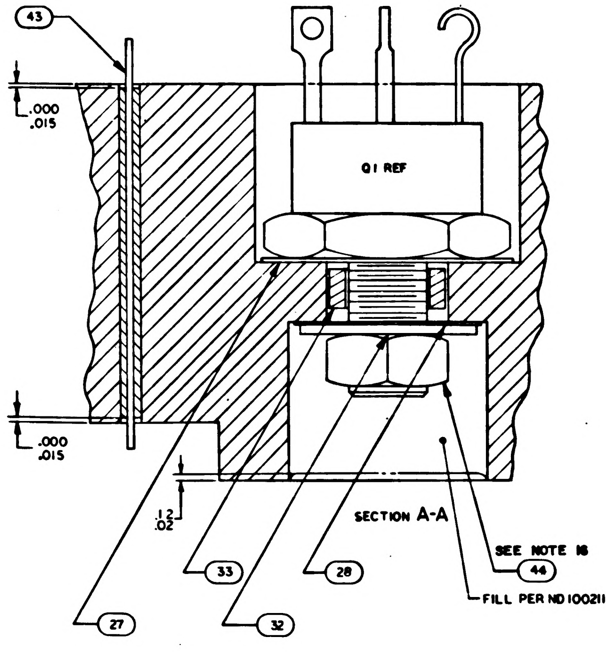
R7
6
R4
7
CR6
22
CR5
22
SEE NOTE 21
CR7
22
R10
13
CR8
22
CR9
22
CR3
21
CR1
19
R12
15
R11
14
R23
48
CR2
20
1.560
1.540
SEE NOTE 6
.265
MAX
K1
REF
K2
REF
37
36
SEE NOTE 2
35
1
30
31
45
SEE N
FILL PER ND1002
12
.02
38
SEE N
.000
.015
39
SEE NO
SEE NOTE 10
AR3
REF
CR2
REF
54
.200
REF
SEE NOTE 10
.000
.015
29
34
SEE NOTE 17
.000 ENCAPSULATION
.015 LIMIT
.265 MAX
REF

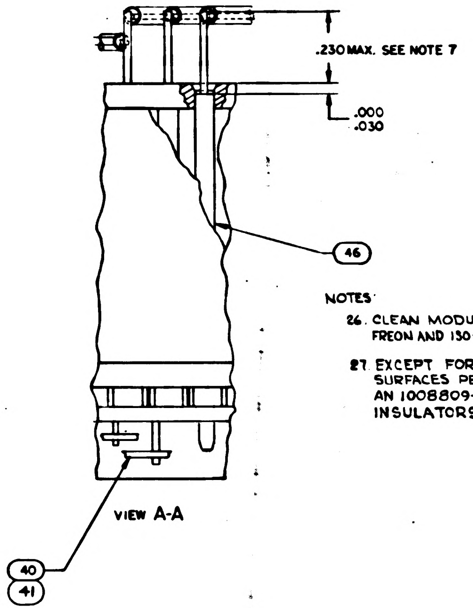
SECTION B-B

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. ~~BOND FIND NO. 50,51 & 52 TO FIND NO. 38 PER ND1002237.~~
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) AND ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. ALL CONNECTIONS MADE BY WELDING TO BE PER ND 1002005.
6. SOLDER PER ND 1002071.
7. CHECKERED INDICATES INTERMEDIATE LEVEL WIRING
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
10. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE. THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
11.
12. PROCURE PER PS 1007162.
13. AR DENOTES AS REQUIRED
14. K DENOTES CATHODE SIDE OF DIODE
15. MOUNTING TORQUE FOR FIND NO. 20 TO BE 10/15 INCH POUNDS
16. MOUNTING TORQUE FOR FIND NO. 23 TO BE 22/26 INCH POUNDS
17. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND
18. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007162 PART TO BE SELECTED FROM CHART.
19. R9 AND R18 TO BE SELECTED AT ASSEMBLY, PART NO. AND DASH NO. AS MARKED ON AMPLIFIER. RANGE OF VALUES (OHMS) SHOWN ON CHART.
20. ASSEMBLE FIND NO. 38 AND 39 PER ND 1002136
21. LEAD FROM AR1-8 TERMINATES AT LOWER WELD CONNECTION OF PIN 30. UPPER LEAD TIES PINS 15 AND 30 TO FT12
22. ALL ELECTRICAL COMPONENTS WHICH ARE NOT STUD MOUNTED AND ALL FEED THRUS TO BE CENTRALIZED AND CEMENTED PER ND 1002009. METHOD J.
23. TORQUE TO 4 ± 1 IN. LB. FOR ASSY OF ITEM 24, 25, AND 26.
24. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS & APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON & ISO-PROPYL ALCOHOL. ADHESIVE & COATING MATERIAL PER ND 1002187 TYPE II APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~


43
.000
.015
Q1 REF
.000
.015
12
.02
SEE NOTE 16
33
28
44
27
32
FILL PER ND1002117

SECTION A-A


.230 MAX. SEE NOTE 7
.000
.030
46
40
41

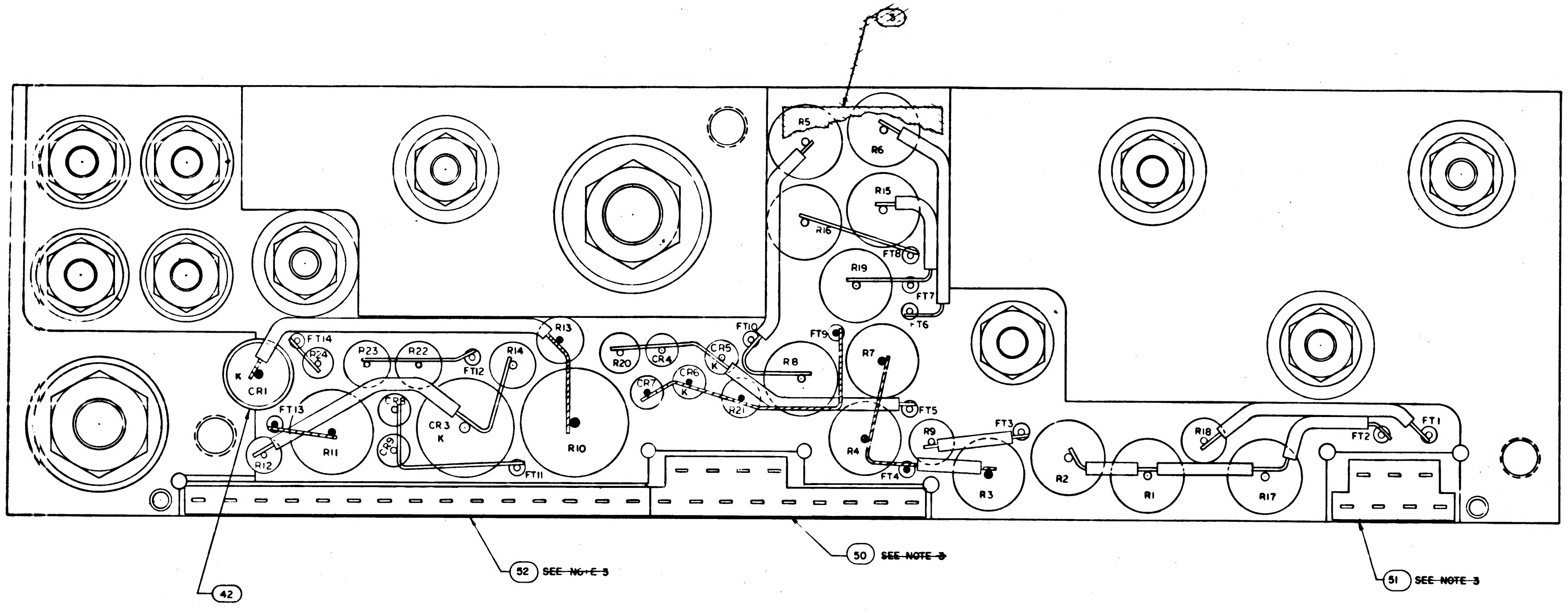
VIEW A-A

NOTES

26. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
27. EXCEPT FOR MODULE MOUNTING SURFACE PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AN 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

R13				R14		R9			
PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALU	PART N	
1010377-113	15	1010377-164	117	1010377-141	71	1010311-126	100	101031	
-114	17	-165	119	-142	73	-127	102		
-115	19	-166	121	-143	75	-128	105		
-116	21	-167	123	-144	77	-129	107		
-117	23	-168	125	-145	79	-130	110		
-118	25	-169	127	-146	81	-131	113		
-119	27	-170	129	-147	83	-132	115		
-120	29	-171	131	-148	85	-133	118		
-121	31	-172	133	-149	87	-134	121		
-122	33	-173	135	-150	89	-135	124		
-123	35	-174	137	-151	91	-136	127		
-124	37	-175	139	-152	93	-137	130		
-125	39	-176	141	-153	95	-138	133		
-126	41	-177	143	-154	97	-139	137		
-127	43	-178	145	-155	99	-140	140		
-128	45	-179	147	-156	101	-141	143		
-129	47	-180	149	-157	103	-142	147		
-130	49	-181	151	-158	105	-143	150		
-131	51	-182	153	-159	107	-144	154		
-132	53	-183	155	-160	109	-145	158		
-133	55	-184	157	-161	111	-146	162		
-134	57	-185	159	-162	113	-147	165		
-135	59	-186	161	-163	115	-148	169		
-136	61	-187	163	-164	117	-149	174		
-137	63	-188	165	-165	119	-150	178		
-138	65	-189	167	-166	121	-151	182		
-139	67	-190	169	-167	123	-152	187		
-140	69	-191	171	-168	125	-153	191		
-141	71	-192	173	-169	127	-154	196		
-142	73	-193	175	-170	129	-155	200		
-143	75	-194	177	-171	131	-156	205		
-144	77	-195	179	-172	133	-157	210		
-145	79	-196	181	-173	135	-158	215		
-146	81	-197	183	-174	137	-159	221		
-147	83	-198	185	-175	139	-160	226		
-148	85	-199	187	-176	141	-161	232		
-149	87	-200	189	-177	143	-162	237		
-150	89	-201	191	-178	145	-163	243		
-151	91	-202	193	-179	147	-164	249		
-152	93	-203	195	-180	149	-165	255		
-153	95	-204	197	-181	151	-166	261		
-154	97	-205	199	-182	153	-167	267		
-155	99	-206	201	-183	155	-168	274		
-156	101			-184	157	-169	280		
-157	103			-185	159	-170	287		
-158	105			-186	161	-171	294		
-159	107			-187	163	-172	301		
-160	109			-188	165	-173	309		
-161	111			-189	167	-174	316		
-162	113			-190	169	-175	324		
-163	115			-191	171	-176	332		

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR [illegible]	[illegible]	[illegible]
B	REVISED PER TDRR 17336	[illegible] MAR 65	GM EF
C	REVISED PER TDRR 19396	2 JUNE 65	LGC MEM
D	REVISED PER TDRR 19434	3 JUN 65	[illegible]
E	REVISED PER TDRR 19501	1 JUN 65	[illegible]
F	REVISED PER TDRR 20143	9 JUN 65	[illegible]
G	REVISED PER TDRR 20718	[illegible] 65	WT
H	REVISED PER TDRR 21285	31 JUL 65	WJR
J	REVISED PER TDRR 21514	18 AUG 65	JWP CP
K	REVISED PER TDRR 22951	11 OCT 65	JWP EF
L	REVISED PER TDRR 25056	10 JAN 66	RLP JAC
M	REVISED PER TDRR 25516	3 FEB 66	OKD RWH
N	REVISED PER TDRR 26397	23 FEB 66	RLP MEM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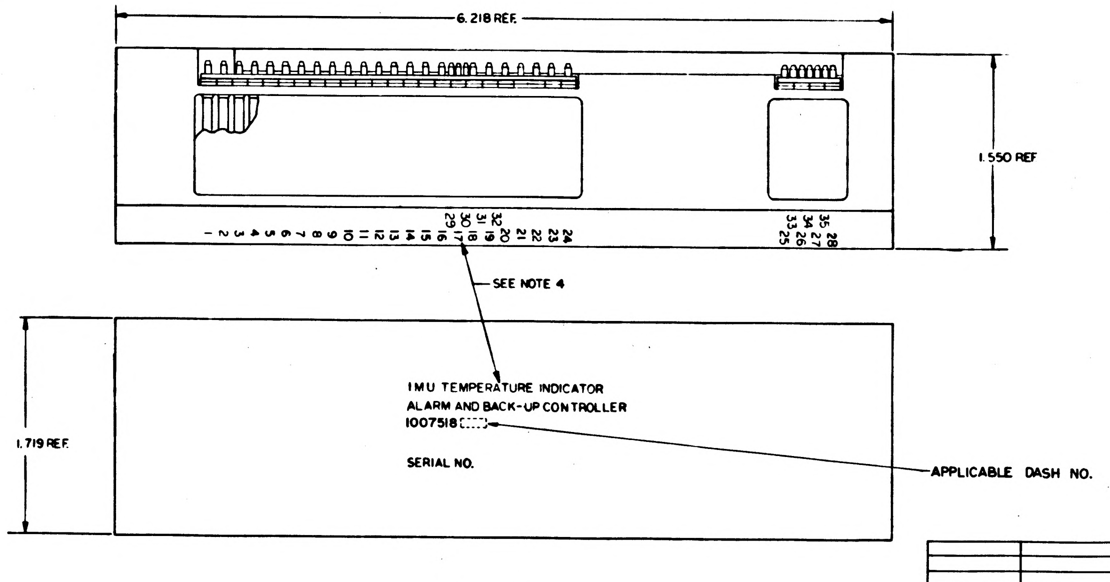
R23
R22
R14
FT12
K
CR1
FT13
R11
CR8
CR9
CR3
K
R10
R12
FT11
42
52 ~~SEE NOTE 3~~
50 ~~SEE NOTE 3~~
51 ~~SEE NOTE 3~~

TABLE I

CONFIGURATION	~~MATERIAL~~	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	~~ADHESIVE~~	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE / 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	~~ADHESIVE~~	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	~~PRIMER~~	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE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1.550 REF
1.719 REF
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
29 30 31 32
25 26 27 28
33 34 35
SEE NOTE 4
IMU TEMPERATURE INDICATOR
ALARM AND BACK-UP CONTROLLER
1007518
SERIAL NO.
APPLICABLE DASH NO.

MARKING VIEW
SCALE 2:1

QUANTITY REQUIRED				LIST OF MATERIALS		
031	021	011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
AR	–	–		SEE NOTE 28	MOISTUREPROOFING	55
1	1	1		2008013-9	TERMINAL LUG, SOLDER-FLAT	54
1	1	–		1018900-021	AMPLIFIER	53
1	1	1		1008540-15	GASKET, CONNECTOR-MINIATURE	52
X	X	X		1010140	SCHEMATIC, ELECTRICAL	
1	1	1		1008545	GASKET, CONNECTOR MINIATURE	51
1	1	1		1008546	GASKET, CONNECTOR MINIATURE	50
2	2	2		1010311- SEE NOTE 19	RESISTOR	49
2	2	2		1010377-237	RESISTOR	48
1	1	1		1008185	INSULATOR TOP, AMPL	47
AR	AR	AR		1006776-20	INSULATION SLEEVING	46
1	1	1		MS20341-10B	NUT HEX	45
1	1	1		MS20341-416B	NUT HEX	44
AR	AR	AR		1010848-2	WIRE ELECTRICAL .020 DIA.	43
AR	AR	AR		MIL-I-23053-8	INSULATION SLEEVING	42
AR	AR	AR		1006776-21	INSULATION SLEEVING	41
AR	AR	AR		1006757-1	WIRE ELECT. .010 X .020	40
35	35	35		1006782-5	CONTACT WRAPOST MALE	39
35	35	35		1006775	INSULATOR WRAPOST MALE	38
10	10	10		1008070-5	WASHER, FLAT	37
10	10	10		MS20341-4A	NUT-HEX	36
10	10	10		MS35338-78	WASHER, LOCK	35
1	1	1		1008021-1	BUSHING INSULATOR	34
1	1	1		1008021-2	BUSHING INSULATOR	33
1	1	1		1008020-2	WASHER FLAT	32
1	1	1		1008020-1	WASHER FLAT	31
1	1	1		1008024-1	WASHER INSULATOR	30
1	1	1		1008024-2	WASHER INSULATOR	29
1	1	1		1008024-4	WASHER INSULATOR	28
1	1	1		1008024-3	WASHER INSULATOR	27
–	–	1		1018900	AMPLIFIER	26
2	2	2		1000284-011	AMPLIFIER	25
2	2	2		1010353-1	RELAY	24
1	1	1		1010273-1	TRANSISTOR	23
6	6	6		1010362-3	DIODE	22
1	1	1		1010441-2	DIODE	21
1	1	1		1010331-20	DIODE	20
1	1	1		1010440-1	DIODE	19
X	X	X		1010377 SEE NOTE 18	RESISTOR	18
						17
2	2	2		1010364-368	RESISTOR	16
1	1	1		1010364-44	RESISTOR	15
1	1	1		1010361-112	RESISTOR	14
1	1	1		1010452-167	RESISTOR	13
2	2	2		1010450-9	RESISTOR	12
1	1	1		1010604-22	RESISTOR	11
1	1	1		1010450-10	RESISTOR	10
2	2	2		1010450-12	RESISTOR	9
1	1	1		1010450-13	RESISTOR	8
1	1	1		1010450-14	RESISTOR	7
2	2	2		1010450-3	RESISTOR	6
2	2	2		1010450-2	RESISTOR	5
1	1	1		1010450-11	RESISTOR	4
	–	+		~~1008074~~	~~INSULATOR BOTTOM~~	3
1	1	1		1008186	INSULATOR TOP	2
1	1	1		1007072	HEAT SINK	1

1007518 N

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007577		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS X
DECIMALS .XX ± .02 .XXX ± .005
ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
CONTRACT NAS [illegible]
DRAWN S Agne DATE 1 SEP 64
CHECKED [illegible] 4 SEP 64
APPROVAL
APPROVAL [illegible] 10/5/64
NASA APPROVAL
MIT APPROVAL [illegible] 6 Oct 64

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

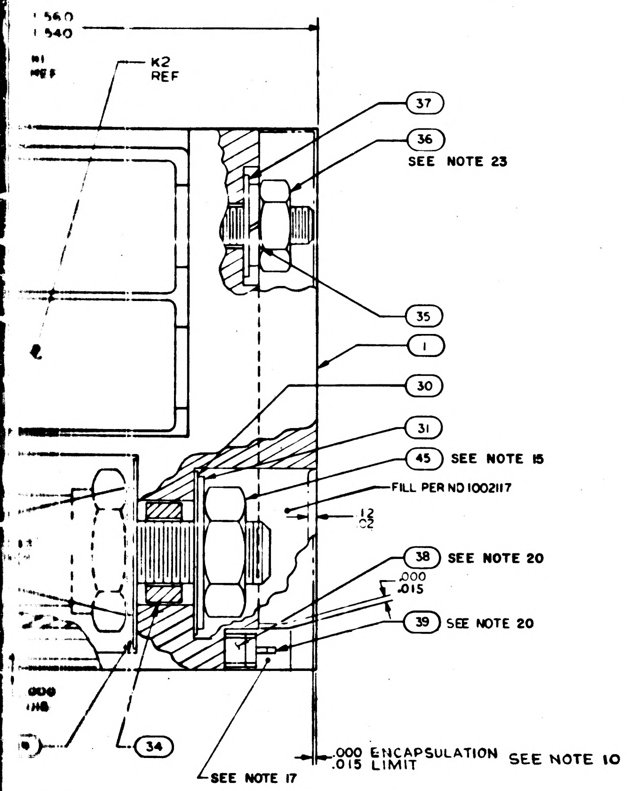
IMU TEMP INDICATOR ALARM AND BACK-UP CONTROLLER ASSEMBLY

CODE IDENT NO 80230
SIZE J
NASA DRAWING NO 1007518
SCALE 5:1
WT
SHEET 1 OF 1

1007518 N

(3H)

3/1007518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SEE NOTE 23
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45 SEE NOTE 15
FILL PER ND 1002117
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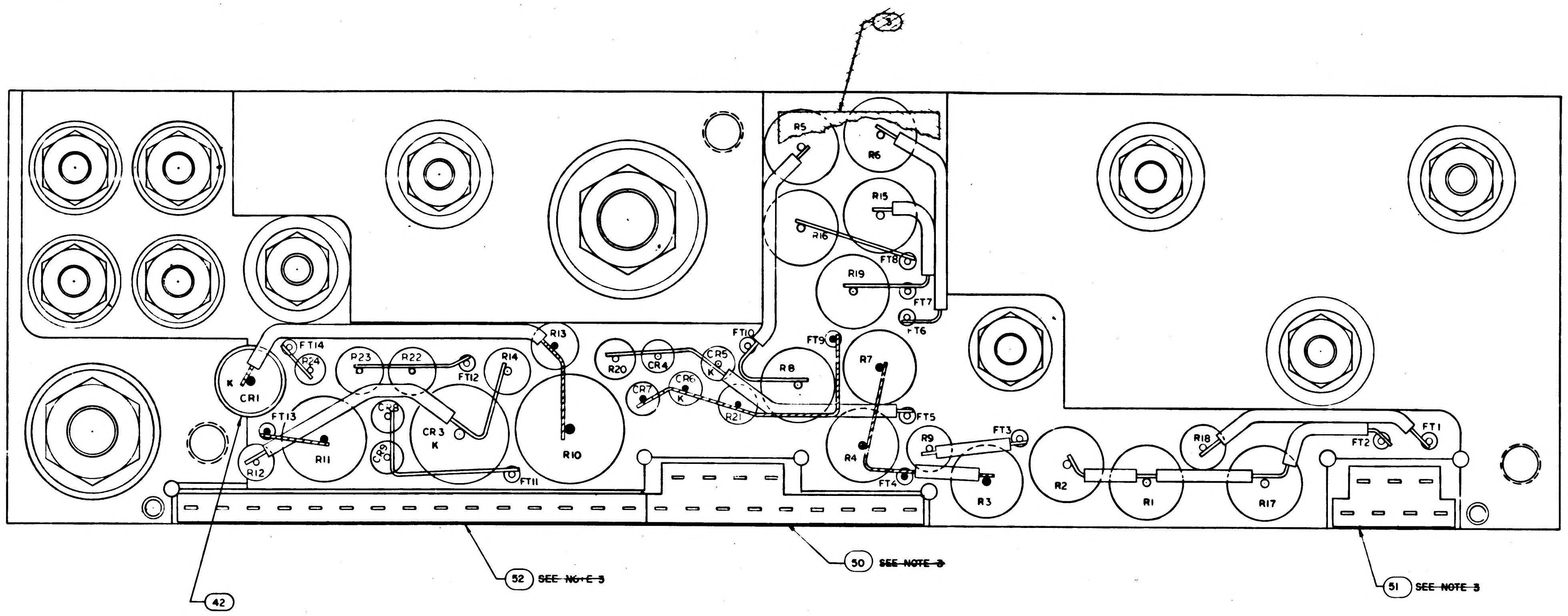
38 SEE NOTE 20
.000
.015
39 SEE NOTE 20
34
SEE NOTE 17
.000 ENCAPSULATION
.015 LIMIT
SEE NOTE 10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R13
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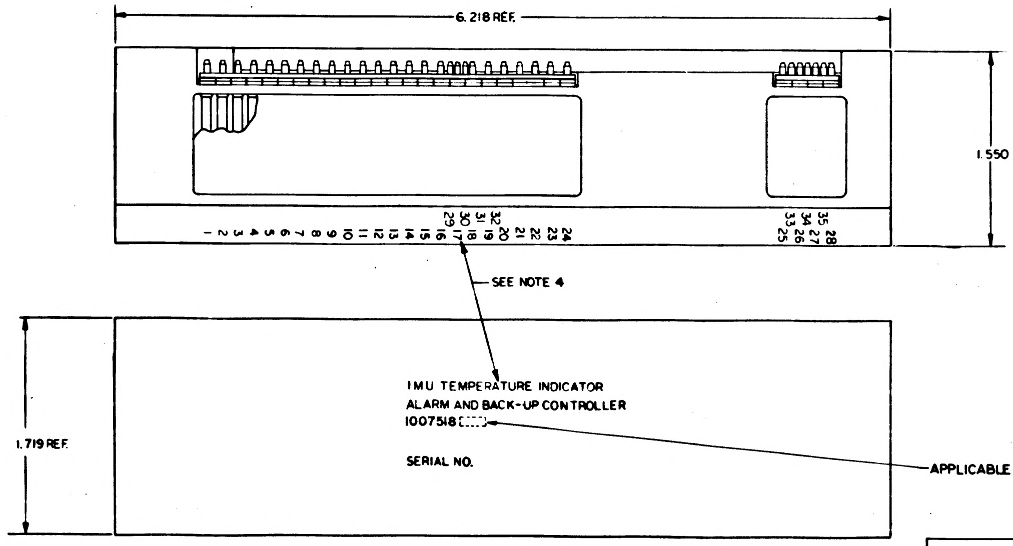
K
FT13
R12
R11
CR8
CR9
CR3
K
FT11
R10
R20
CR4
CR5
K
CR7
CR6
K
R21
42
52 ~~SEE NOTE 3~~
50 ~~SEE NOTE 3~~
51 ~~SEE NOTE 3~~

		R14		R9 AND R18					
PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE
1010377-164	117	1010377-141	71	1010311-126	1000	1010311-177	3400	1010311-228	11500
-165	119	-142	73	-127	1020	-178	3480	-229	11800
-166	121	-143	75	-128	1050	-179	3570	-230	12100
-167	123	-144	77	-129	1070	-180	3650	-231	12400
-168	125	-145	79	-130	1100	-181	3740	-232	12700
-169	127	-146	81	-131	1130	-182	3830	-233	13000
-170	129	-147	83	-132	1150	-183	3920	-234	13300
-171	131	-148	85	-133	1180	-184	4020	-235	13700
-172	133	-149	87	-134	1210	-185	4120	-236	14000
-173	135	-150	89	-135	1240	-186	4220	-237	14300
-174	137	-151	91	-136	1270	-187	4320	-238	14700
-175	139	-152	93	-137	1300	-188	4420	-239	15000
-176	141	-153	95	-138	1330	-189	4530	-240	15400
-177	143	-154	97	-139	1370	-190	4640	-241	15800
-178	145	-155	99	-140	1400	-191	4750	-242	16200
-179	147	-156	101	-141	1430	-192	4870	-243	16500
-180	149	-157	103	-142	1470	-193	4990	-244	16900
-181	151	-158	105	-143	1500	-194	5110	-245	17400
-182	153	-159	107	-144	1540	-195	5230	-246	17800
-183	155	-160	109	-145	1580	-196	5360	-247	18200
-184	157	-161	111	-146	1620	-197	5490	-248	18700
-185	159	-162	113	-147	1650	-198	5620	-249	19100
-186	161	-163	115	-148	1690	-199	5760	-250	19600
-187	163	-164	117	-149	1740	-200	5900	-251	20000
-188	165	-165	119	-150	1780	-201	6040	-252	20500
-189	167	-166	121	-151	1820	-202	6190	-253	21000
-190	169	-167	123	-152	1870	-203	6340	-254	21500
-191	171	-168	125	-153	1910	-204	6490	-255	22100
-192	173	-169	127	-154	1960	-205	6650	-256	22600
-193	175	-170	129	-155	2000	-206	6810	-257	23200
-194	177	-171	131	-156	2050	-207	6980	-258	23700
-195	179	-172	133	-157	2100	-208	7150	-259	24300
-196	181	-173	135	-158	2150	-209	7320	-260	24900
-197	183	-174	137	-159	2210	-210	7500	-261	25500
-198	185	-175	139	-160	2260	-211	7680	-262	26100
-199	187	-176	141	-161	2320	-212	7870	-263	26700
-200	189	-177	143	-162	2370	-213	8060	-264	27400
-201	191	-178	145	-163	2430	-214	8250	-265	28000
-202	193	-179	147	-164	2490	-215	8450	-266	28700
-203	195	-180	149	-165	2550	-216	8660	-267	29400
-204	197	-181	151	-166	2610	-217	8870	-268	30100
-205	199	-182	153	-167	2670	-218	9090		
-206	201	-183	155	-168	2740	-219	9310		
		-184	157	-169	2800	-220	9530		
		-185	159	-170	2870	-221	9760		
		-186	161	-171	2940	-222	10000		
		-187	163	-172	3010	-223	10200		
		-188	165	-173	3090	-224	10500		
		-189	167	-174	3160	-225	10700		
		-190	169	-175	3240	-226	11000		
		-191	171	-176	3320	-227	11300		

TABLE I

CONFIGURATION	~~MATERIAL~~	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	~~ADHESIVE~~	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE / 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	~~ADHESIVE~~	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	~~PRII JR~~	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE


6.218 REF.
1.550 REF
1.719 REF
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
29
30
31
32
33
34
35
25
26
27
28
SEE NOTE 4
IMU TEMPERATURE INDICATOR
ALARM AND BACK-UP CONTROLLER
1007518[ ]
SERIAL NO.
APPLICABLE DASH NO.

MARKING VIEW
SCALE 2:1

	031	021	011
	AR	—	—
	1	1	1
	1	1	—
	1	1	1
	X	X	X
	1	1	1
	1	1	1
	2	2	2
	2	2	2
	1	1	1
	AR	AR	AR
	1	1	1
	1	1	1
	AR	AR	AR
	AR	AR	AR
	AR	AR	AR
	AR	AR	AR
	35	35	35
	35	35	35
	10	10	10
	10	10	10
	10	10	10
	1	1	1
	1	1	1
	1	1	1
	1	1	1
	1	1	1
	1	1	1
	1	1	1
	1	1	1
	—	—	1
	2	2	2
	2	2	2
	1	1	1
	6	6	6
	1	1	1
	1	1	1
	1	1	1
	X	X	X
	2	2	2
	1	1	1
	1	1	1
	1	1	1
	2	2	2
	1	1	1
	1	1	1
	2	2	2
	1	1	1
	1	1	1
	2	2	2
	2	2	2
	1	1	1
		—	+
	1	1	1
	1	1	1

QUANTITY REQUIRED | EFFECTIVITY

NEXT ASSY	USED ON	APPLICABLE DASH NO
1007577		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

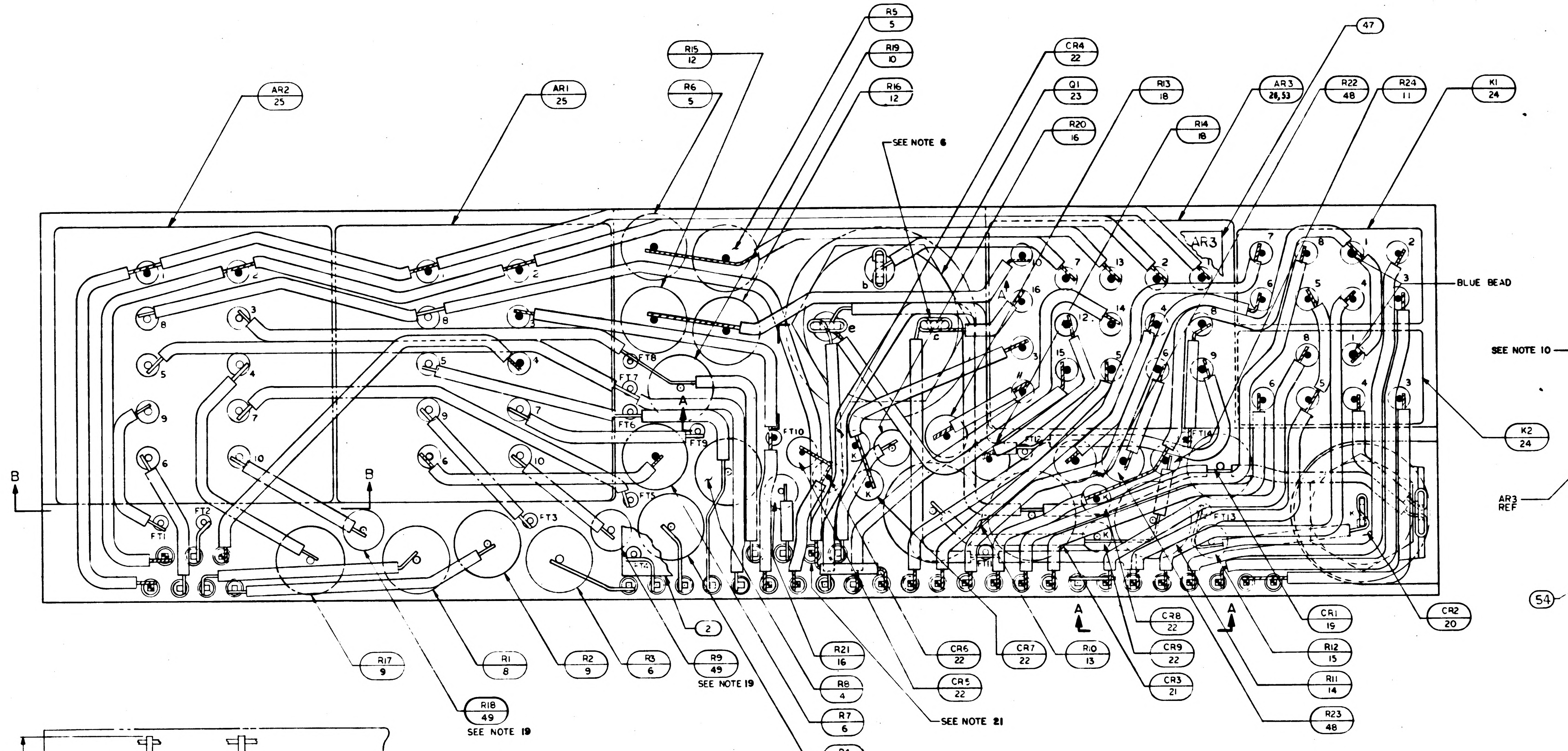
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS X -
DECIMALS XX ± .02 .XXX ± .005
ANGLES ±
DO NOT SCALE THIS DRAWING

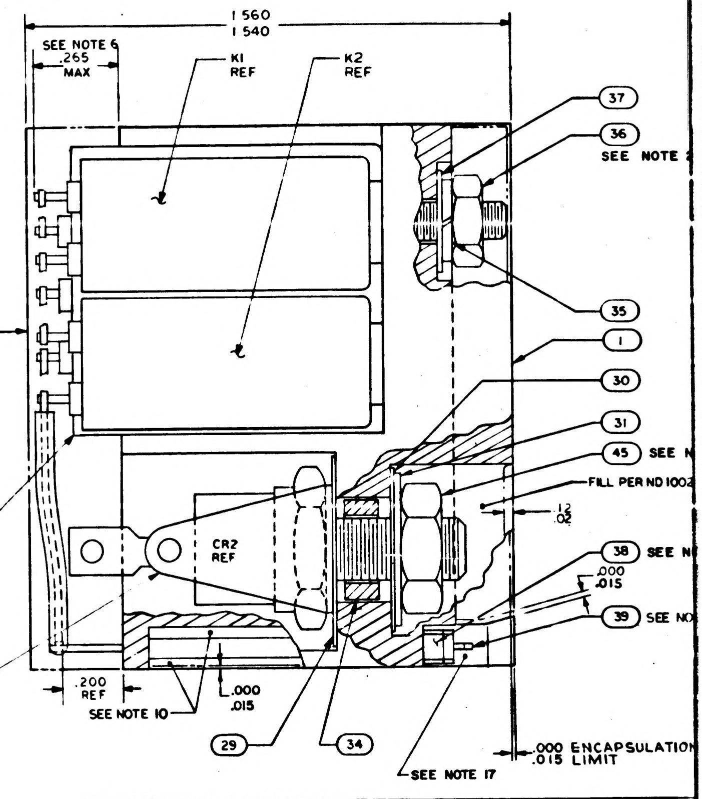
MATERIAL

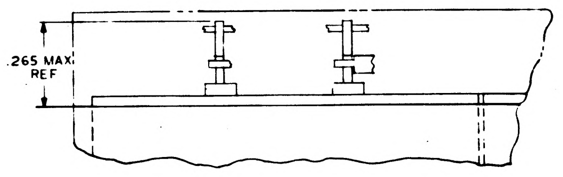
HEAT TREATMENT

FINAL FINISH

DRAWN
CHECKED
APPROVAL
APPROVAL
NASA APP


AR2 25
AR1 25
R15 12
R6 5
R5 5
R19 10
R16 12
CR4 22
Q1 23
R20 16
SEE NOTE 6
R13 18
R14 18
AR3 28,53
R22 48
R24 11
K1 24
47
AR3
BLUE BEAD
K2 24
FT1
FT2
FT3
FT5
FT6
FT7
FT8
FT9
FT10
FT13
FT14
B
B
A
A
R17 9
R18 49
SEE NOTE 19
R1 8
R2 9
R3 6
2
R9 49
SEE NOTE 19
R21 16
R8 4
R7 6
R4
CR6 22
CR5 22
SEE NOTE 21
CR7 22
R10 13
CR8 22
CR9 22
CR3 21
CR1 15
R12 15
R11 14
R23 48
CR2 20

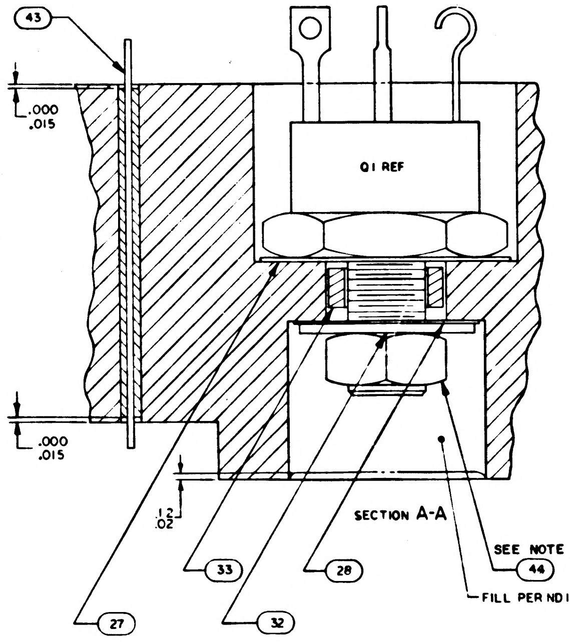

1.560
1.540
SEE NOTE 6
.265 MAX
K1 REF
K2 REF
37
36
SEE NOTE
35
SEE NOTE 10
1
30
31
45 SEE N
FILL PER ND 1002
.12
.02
AR3 REF
CR2 REF
38 SEE N
.000
.015
39 SEE NO
54
.200 REF
SEE NOTE 10
.000
.015
29
34
SEE NOTE 17
.000 ENCAPSULATION
.015 LIMIT



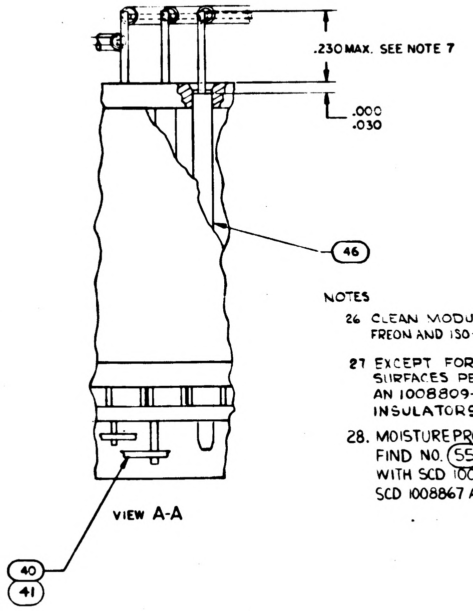
SECTION B-B

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. ~~BOND FIND NO. 50,51 & 52 TO FIND NO. 38 PER ND 1002237.~~
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) AND ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. ALL CONNECTIONS MADE BY WELDING TO BE PER ND 1002005.
6. SOLDER PER ND 1002071.
7. CHECKERED INDICATES INTERMEDIATE LEVEL WIRING
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
10. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE. THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
11.
12. PROCURE PER PS 1007162.
13. AR DENOTES AS REQUIRED
14. K DENOTES CATHODE SIDE OF DIODE
15. MOUNTING TORQUE FOR FIND NO. 20 TO BE 10/15 INCH POUNDS
16. MOUNTING TORQUE FOR FIND NO. 23 TO BE 22/26 INCH POUNDS
17. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND
18. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007162 PART TO BE SELECTED FROM CHART.
19. R9 AND R18 TO BE SELECTED AT ASSEMBLY, PART NO. AND DASH NO. AS MARKED ON AMPLIFIER. RANGE OF VALUES (OHMS) SHOWN ON CHART.
20. ASSEMBLE FIND NO. 38 AND 39 PER ND 1002136
21. LEAD FROM AR1-8 TERMINATES AT LOWER WELD CONNECTION OF PIN 30. UPPER LEAD TIES PINS 15 AND 30 TO FT12
22. ALL ELECTRICAL COMPONENTS WHICH ARE NOT STUD MOUNTED AND ALL FEED THRUS TO BE CENTRALIZED AND CEMENTED PER ND 1002009. METHOD J.
23. TORQUE TO 4 ± 1 IN. LB. FOR ASSY OF ITEM 24, 25, AND 26.
24. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS & APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON & ISO-PROPYL ALCOHOL. ADHESIVE & COATING MATERIAL PER ND 1002187 TYPE II APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~


43
.000
.015
Q1 REF
.000
.015
.12
.02
33
28
27
32
SEE NOTE 16
44
FILL PER ND 1002117

SECTION A-A


.230 MAX. SEE NOTE 7
.000
.030
46
40
41

VIEW A-A

NOTES

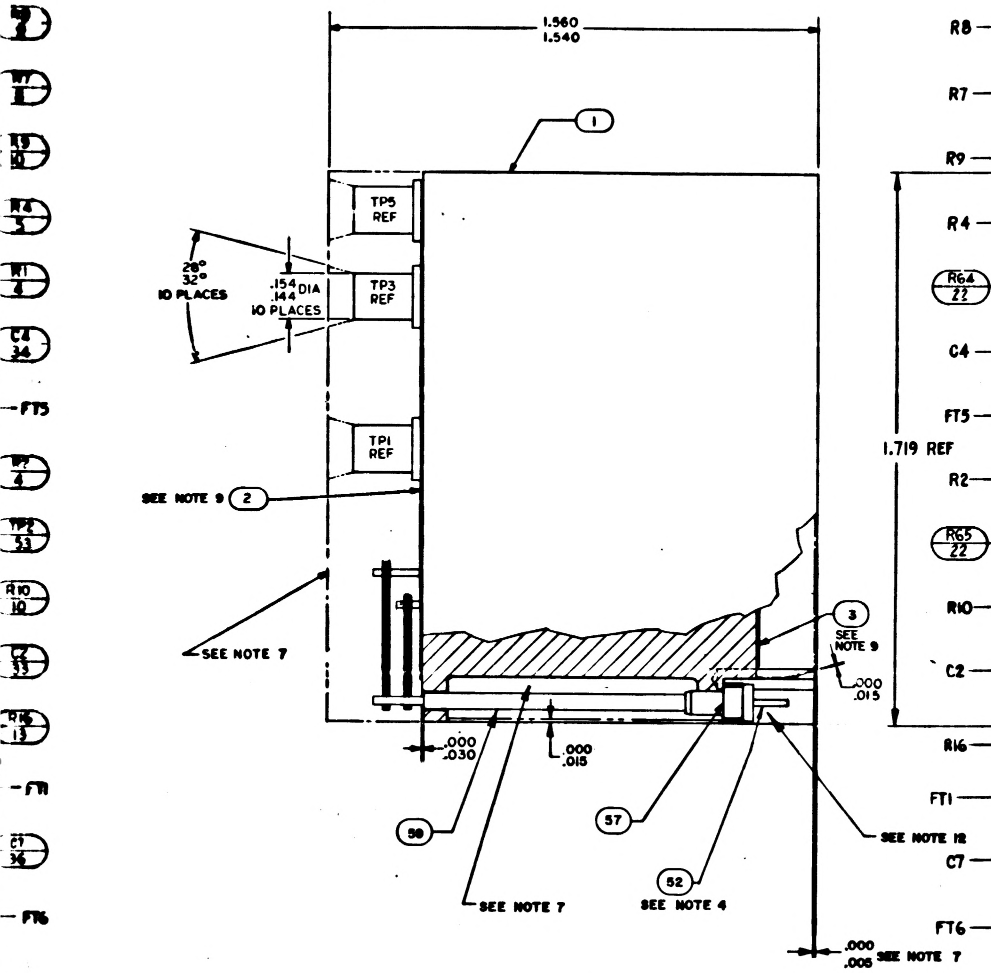
26 CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

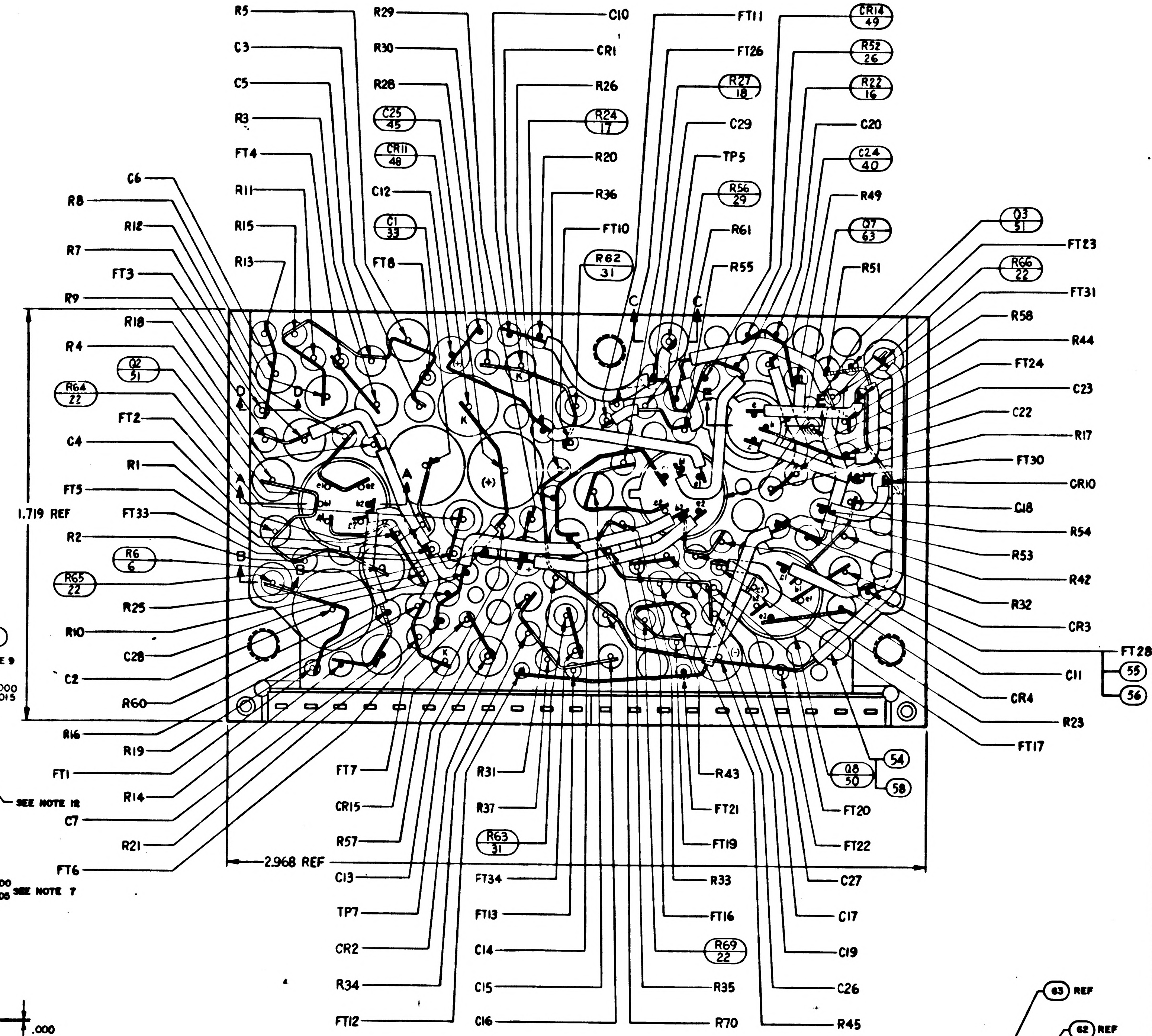
27 EXCEPT FOR MODULE MOUNTING SURFACE PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AN 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

28. MOISTUREPROOF PER ND 1002292 AS REQUIRED BY FIND NO. (55) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.

R13				R14		R9		
PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART NUMBER	VALUE	PART N
1010377-113	15	1010377-164	117	1010377-141	71	1010311-126	1000	10103
-114	17	-165	119	-142	73	-127	1020	
-115	19	-166	121	-143	75	-128	1050	
-116	21	-167	123	-144	77	-129	1070	
-117	23	-168	125	-145	79	-130	1100	
-118	25	-169	127	-146	81	-131	1130	
-119	27	-170	129	-147	83	-132	1150	
-120	29	-171	131	-148	85	-133	1180	
-121	31	-172	133	-149	87	-134	1210	
-122	33	-173	135	-150	89	-135	1240	
-123	35	-174	137	-151	91	-136	1270	
-124	37	-175	139	-152	93	-137	1300	
-125	39	-176	141	-153	95	-138	1330	
-126	41	-177	143	-154	97	-139	1370	
-127	43	-178	145	-155	99	-140	1400	
-128	45	-179	147	-156	101	-141	1430	
-129	47	-180	149	-157	103	-142	1470	
-130	49	-181	151	-158	105	-143	1500	
-131	51	-182	153	-159	107	-144	1540	
-132	53	-183	155	-160	109	-145	1580	
-133	55	-184	157	-161	111	-146	1620	
-134	57	-185	159	-162	113	-147	1650	
-135	59	-186	161	-163	115	-148	1690	
-136	61	-187	163	-164	117	-149	1740	
-137	63	-188	165	-165	119	-150	1780	
-138	65	-189	167	-166	121	-151	1820	
-139	67	-190	169	-167	123	-152	1870	
-140	69	-191	171	-168	125	-153	1910	
-141	71	-192	173	-169	127	-154	1960	
-142	73	-193	175	-170	129	-155	2000	
-143	75	-194	177	-171	131	-156	2050	
-144	77	-195	179	-172	133	-157	2100	
-145	79	-196	181	-173	135	-158	2150	
-146	81	-197	183	-174	137	-159	2210	
-147	83	-198	185	-175	139	-160	2260	
-148	85	-199	187	-176	141	-161	2320	
-149	87	-200	189	-177	143	-162	2370	
-150	89	-201	191	-178	145	-163	2430	
-151	91	-202	193	-179	147	-164	2490	
-152	93	-203	195	-180	149	-165	2550	
-153	95	-204	197	-181	151	-166	2610	
-154	97	-205	199	-182	153	-167	2670	
-155	99	-206	201	-183	155	-168	2740	
-156	101			-184	157	-169	2800	
-157	103			-185	159	-170	2870	
-158	105			-186	161	-171	2940	
-159	107			-187	163	-172	3010	
-160	109			-188	165	-173	3090	
-161	111			-189	167	-174	3160	
-162	113			-190	169	-175	3240	
-163	115			-191	171	-176	3320	

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
A	—	REVISED PER TDRR 10636		24-FEB-65	


1.560
1.540
1
TP5 REF
TP3 REF
TP1 REF
28°
32°
10 PLACES
.154
.144 DIA
10 PLACES
SEE NOTE 9
2
SEE NOTE 7
3
SEE NOTE 9
.000
.015
.000
.030
.000
.015
59
57
SEE NOTE 12
52
SEE NOTE 4
SEE NOTE 7
.000
.005 SEE NOTE 7
FT5
FT1
FT6


R5
C3
C5
R3
FT4
R11
R15
R13
C6
R8
R12
R7
FT3
R9
R18
R4
Q2 51
R64 22
FT2
C4
R1
FT5
FT33
R2
R6 6
R65 22
R25
R10
C28
C2
R60
R16
R19
FT1
R14
C7
R21
FT6
R29
R30
R28
C25 45
CR11 48
C12
C1 33
FT8
C10
CR1
R26
R24 17
R20
R36
FT10
R62 31
FT11
FT26
R27 18
C29
TP5
R56 29
R61
R55
CR14 49
R52 26
R22 16
C20
C24 40
R49
Q7 63
R51
Q3 51
FT23
R66 22
FT31
R58
R44
FT24
C23
C22
R17
FT30
CR10
C18
R54
R53
R42
R32
CR3
FT28
55
56
C11
CR4
R23
FT17
1.719 REF
2.968 REF
FT7
CR15
R57
C13
TP7
CR2
R34
FT12
R31
R37
R63 31
FT34
FT13
C14
C15
C16
R43
FT21
FT19
R33
FT16
R69 22
R35
R70
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54
58
FT20
FT22
C27
C17
C19
C26
R45
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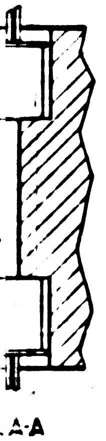
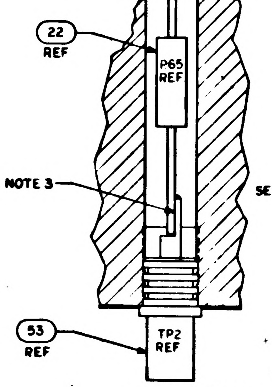
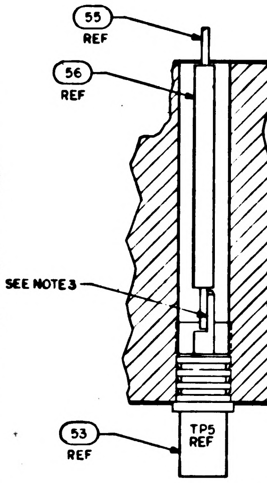
B
C
D




22 REF
R65 REF
SEE NOTE 3
53 REF
TP2 REF

SECTION B-B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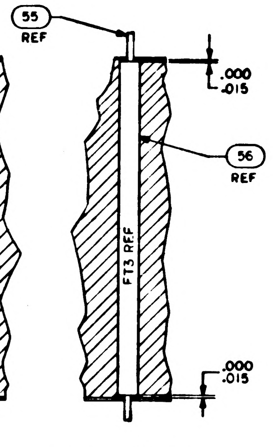
56 REF
SEE NOTE 3
53 REF
TP5 REF

SECTION C-C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.015
56 REF
FT3 REF
.000
.015

SECTION D-D

TP	COMPONENT
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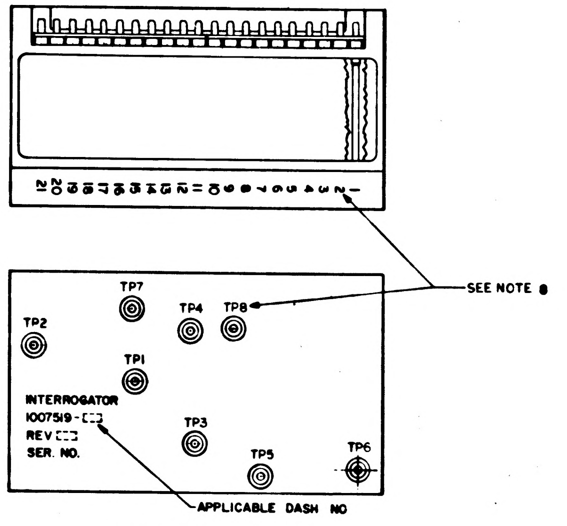
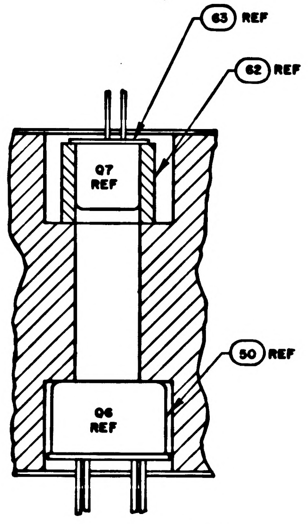
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69


SEE NOTE 8
TP2
TP7
TP4
TP8
TP1
INTERROGATOR
1007519-□□
REV □□
SER. NO.
TP3
TP5
TP6
APPLICABLE DASH NO

MARKING VIEW
SCALE 2/1


63 REF
62 REF
Q7 REF
50 REF
Q6 REF

SECTION E-E

			011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
			X		1009522	SCHEMATIC	REF
			1		1006750-81	RESISTOR, FIXED FILM	64
			1		1010675-001	TRANSISTOR	63
			1		1008025-1	INSULATOR BUSHING	62
			1		1008540-10	GASKET, CONNECTOR MINIATURE	61
			1		1008540-11	GASKET, CONNECTOR MINIATURE	60
			AR		1006776-20	INSULATION SLEEVING	59
			AR		1006776-21	INSULATION SLEEVING	58
			21		1006775	INSULATOR, WRAPOST-MALE, MINAT	57
			AR		1006776-22	INSULATION SLEEVING	56
			AR		1006757-8	WIRE ELEC .020 DIA	55
			AR		1006757-1	WIRE ELEC .010 ± .020	54
			8		1010292-2	TERMINAL FEED THRU INSULATED	53
			21		1006782-4	CONTACT, WRAPOST-MALE, MINAT	52
			4		1010376-1	TRANSISTOR	51
			2		1010395	TRANSISTOR	50
			7		1010385	DIODE	49
			1		1010286-9	DIODE	48
			1		1006777-19	CAPACITOR, CER	47
			1		1006755-79	CAPACITOR, TANT	46
			1		1006755-83	CAPACITOR, TANT	45
			1		1006777-8	CAPACITOR, CER	44
			1		1006777-13	CAPACITOR, CER	43
							42
			3		1006777-12	CAPACITOR, CER	41
			1		1006777-24	CAPACITOR, CER	40
			2		1006755-69	CAPACITOR, TANT	39
			2		1006777-5	CAPACITOR, CER	38
			2		1006777-7	CAPACITOR, CER	37
			4		1006777-31	CAPACITOR, CER	36
			1		1006777-28	CAPACITOR, CER	35
			2		1006777-27	CAPACITOR, CER	34
			2		1010264-23	CAPACITOR, MYLAR	33
			2		1006777-3	CAPACITOR, CER	32
			2		1006750-63	RESISTOR, FIXED FILM	31
			1		1006750-24	RESISTOR, FIXED FILM	30
			1		1006750-45	RESISTOR, FIXED FILM	29
			1		1006750-12	RESISTOR, FIXED FILM	28
			1		1006750-46	RESISTOR, FIXED FILM	27
			2		1006750-36	RESISTOR, FIXED FILM	26
			1		1006750-48	RESISTOR, FIXED FILM	25
			3		1006750-60	RESISTOR, FIXED FILM	24
			2		1006750-66	RESISTOR, FIXED FILM	23
			4		1006750-56	RESISTOR, FIXED FILM	22
			2		1006750-52	RESISTOR, FIXED FILM	21
			2		1006750-49	RESISTOR, FIXED FILM	20
			2		1006750-39	RESISTOR, FIXED FILM	19
			2		1006750-54	RESISTOR, FIXED FILM	18
			2		1006750-55	RESISTOR, FIXED FILM	17
			2		1006750-65	RESISTOR, FIXED FILM	16
			4		1006750-80	RESISTOR, FIXED FILM	15
			4		1006750-53	RESISTOR, FIXED FILM	14
			3		1006750-31	RESISTOR, FIXED FILM	13
			2		1006750-41	RESISTOR, FIXED FILM	12
			2		1006750-25	RESISTOR, FIXED FILM	11
			2		1006750-43	RESISTOR, FIXED FILM	10
			1		1010377-51	RESISTOR, FIXED WW	9
			1		1010377-106	RESISTOR, FIXED WW	8
			1		1006750-42	RESISTOR, FIXED FILM	7
			2		1010377-105	RESISTOR, FIXED WW	6
			2		1010377-49	RESISTOR, FIXED WW	5
			4		1006750-32	RESISTOR, FIXED FILM	4
			1		1008588	INSULATOR, BOTTOM	3
			1		1008587	INSULATOR, TOP	2
			1		1008036	HEATSINK	1

QUANTITY REQUIRED
LIST OF MATERIALS

A
1007519
A

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
Contract NAS 9-497
DRAWN Sphone DATE 2 OCT 64
CHECKED A. Udovich 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL W J Rhine 12-8-64
MIT APPROVAL

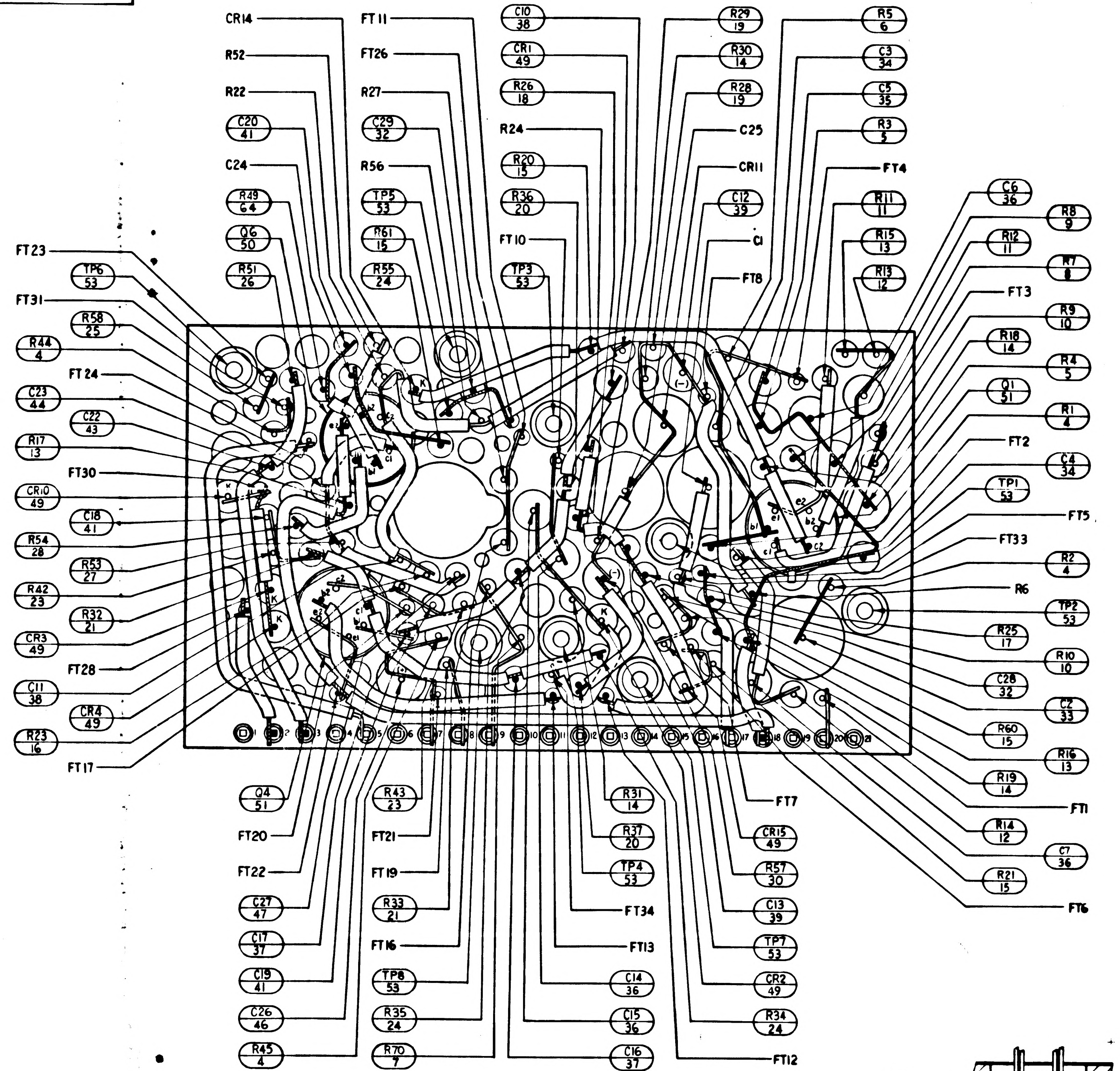
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INTERROGATOR ASSEMBLY

CODE IDENT NO.
SIZE J
NASA DRAWING NO. 1007519
SCALE 5/1
WT
SHEET 1 OF 1

24

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.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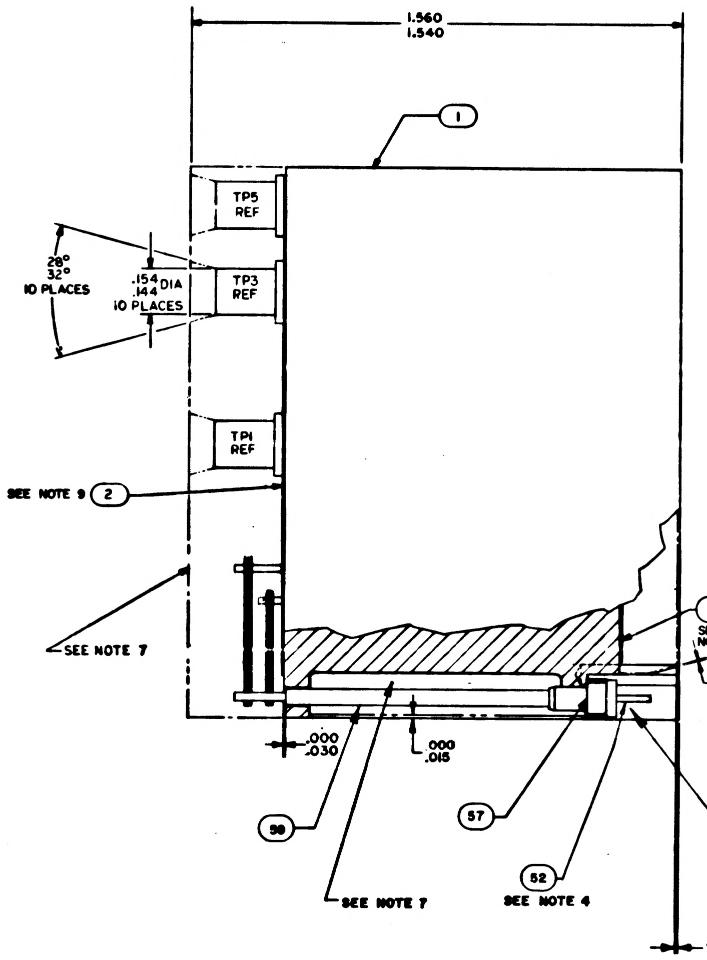
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SEE NOTE 9
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SEE NOTE 7
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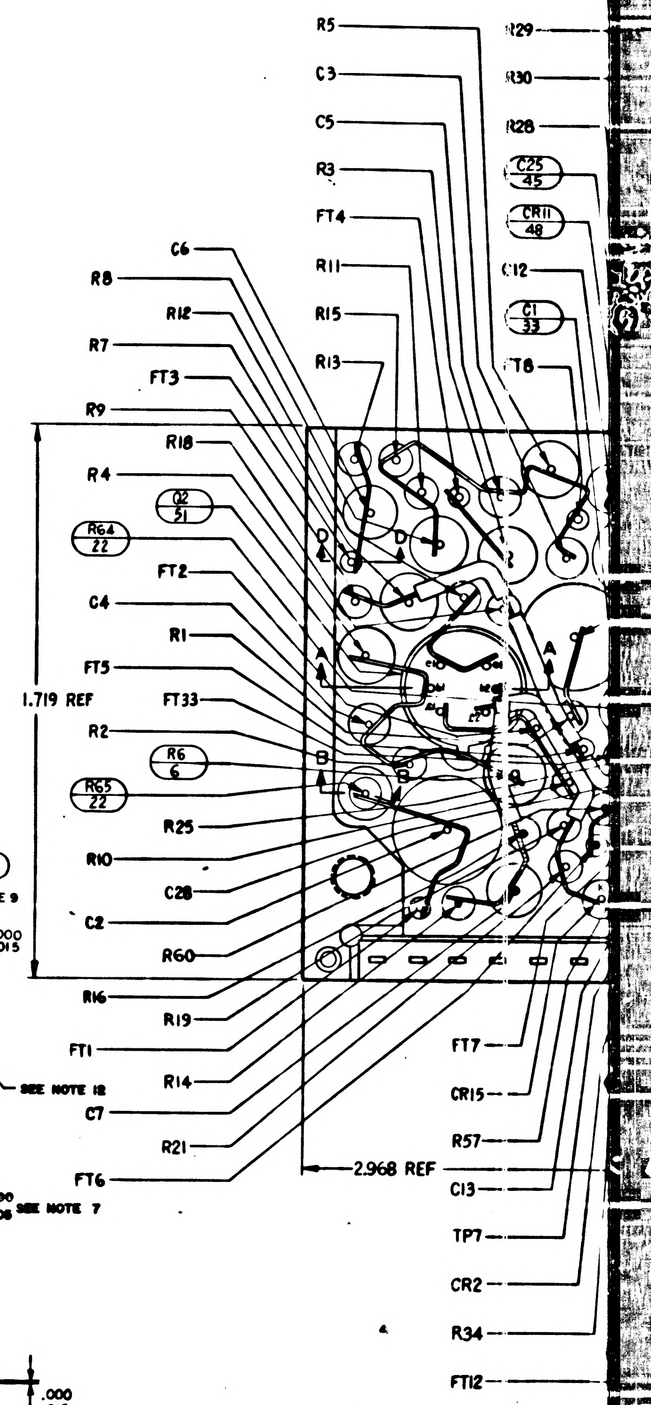
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C6
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R12
R7
FT3
R9
R18
R4
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FT2
C4
R1
FT5
FT33
R2
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R25
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C28
C2
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R16
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R14
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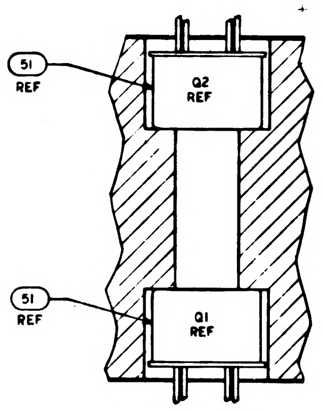
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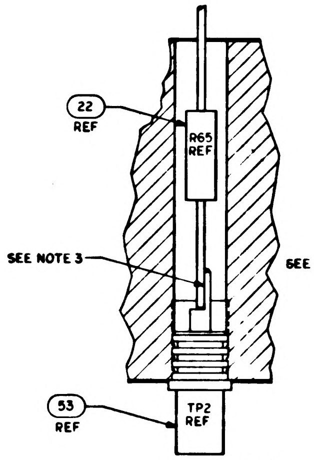
SECTION A-A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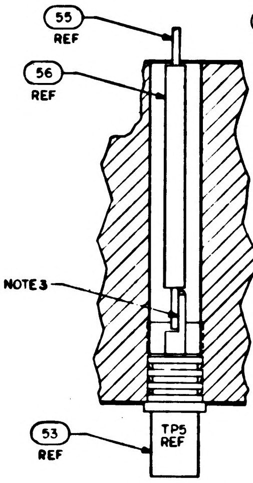
SECTION B-B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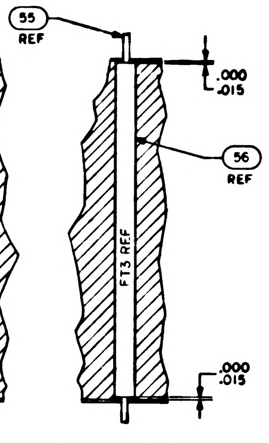
SECTION C-C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SECTION D-D

NOTES:

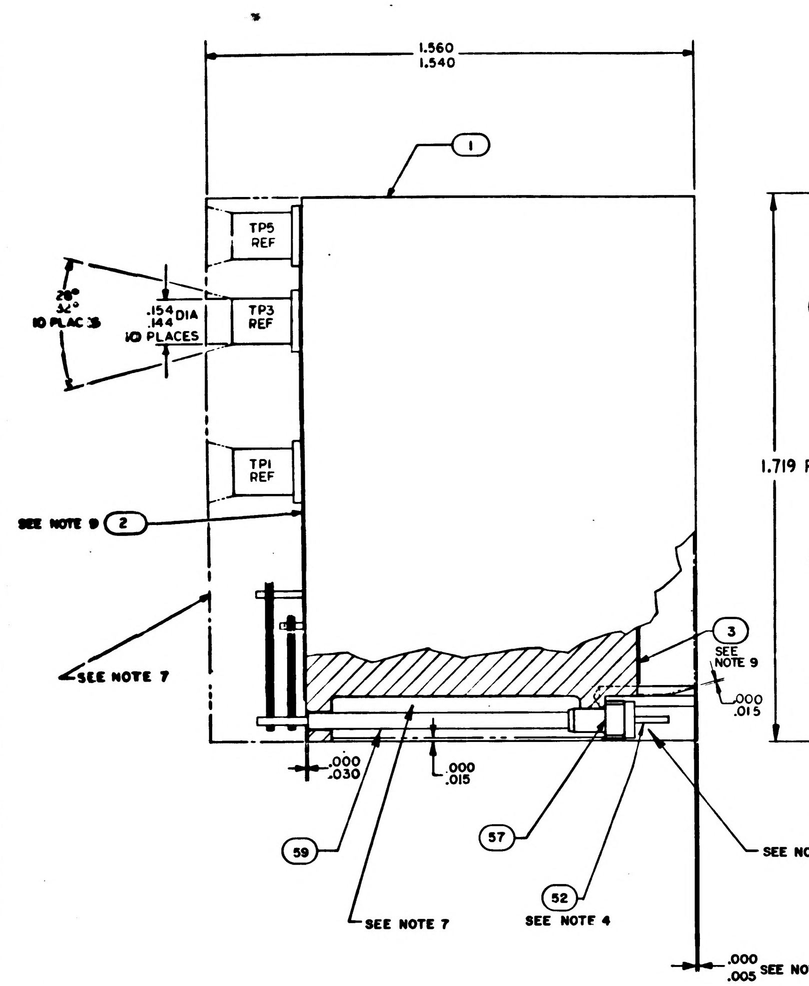
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. STAKE ALL COMPONENTS AND FIND NO.53 PER ND1002009 METHOD C
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005
4. MUST MEET REQUIREMENTS OF ND 1002136
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
8. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
9. ON ITEMS 2 AND 3
   BROKEN PATHS INDICATE INSULATION SLEEVING,
   K INDICATES CATHODE SIDE OF DIODE,
   FT() INDICATES FEED THRU
   PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   B INDICATES BASE LEAD OF TRANSISTOR,
   E INDICATES EMITTER LEAD OF TRANSISTOR
   C() INDICATES COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B() INDICATES BASE LEAD OF MULTISTAGE TRANSISTOR
   E() INDICATES EMITTER LEAD OF MULTISTAGE TRANSISTOR
10. PROCURE PER PS 1007019
11. BOND FIND NO. 60 AND FIND NO. 61 TO FIND NO. 57 PER ND 1002237.
12. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069
14. AR DENOTES AS REQUIRED

TP CHART

TP	COMPONENT
1	R64
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
A	—	REVISED PER TDRR 16636		2-FEB-65	
B	—	REVISED PER TDRR 17322		15-MAR-65	GM / EF

REVISIONS



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TP5 REF
TP3 REF
TP1 REF
28°
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.144 DIA
10 PLACES
SEE NOTE 9
2
SEE NOTE 7
3
SEE NOTE 9
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52
SEE NOTE 4
SEE NOTE 12
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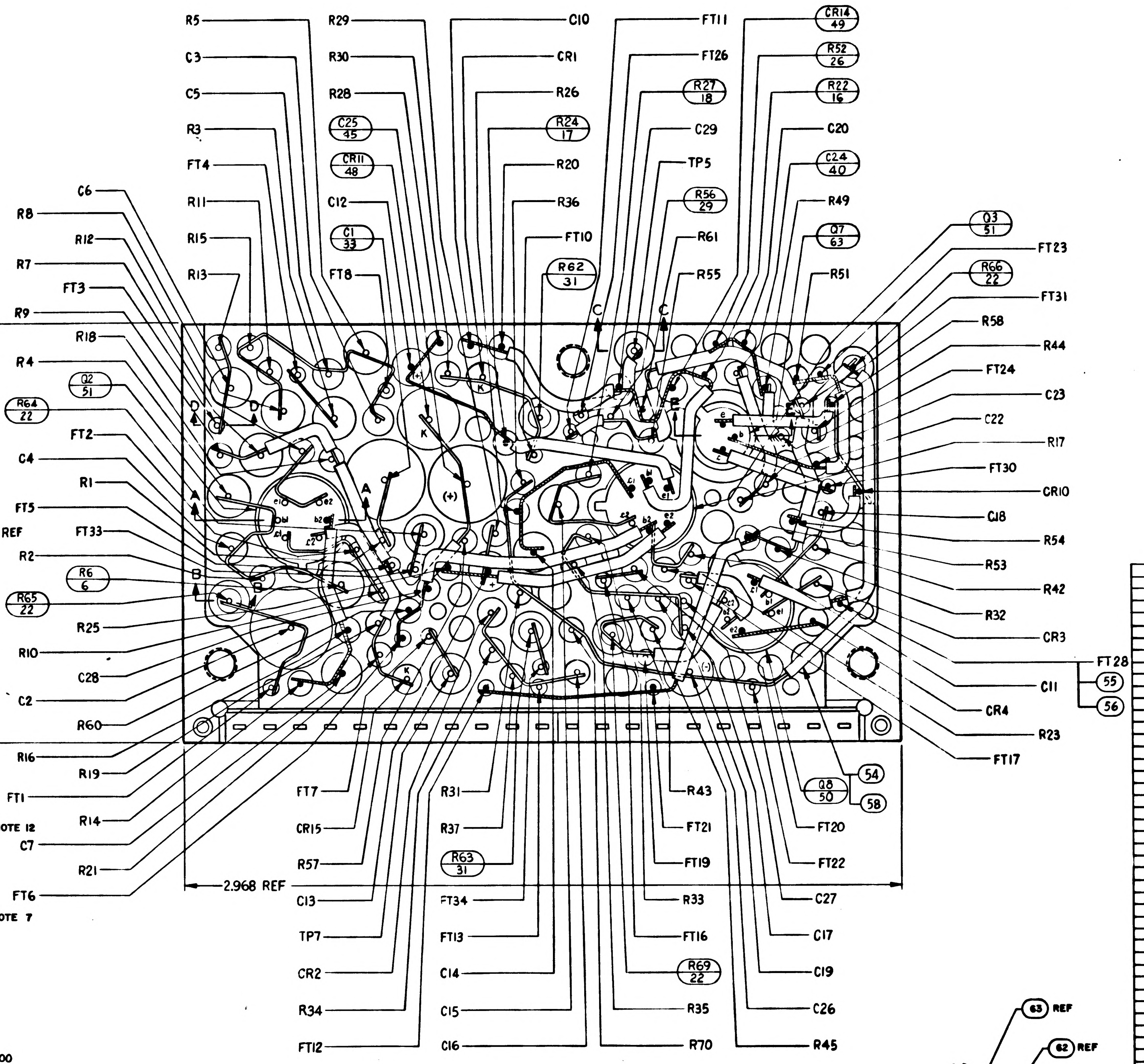
.005 SEE NOTE 7



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R30
R28
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CR11 48
C12
C1 33
FT8
C10
CR1
R26
R24 17
R20
R36
FT10
R62 31
FT11
FT26
R27 18
C29
TP5
R56 29
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R1
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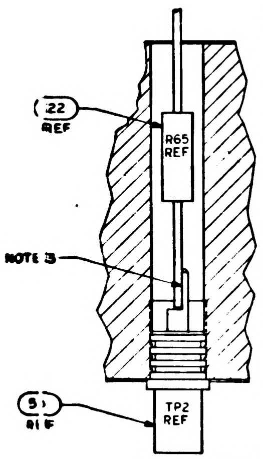
B
C
D



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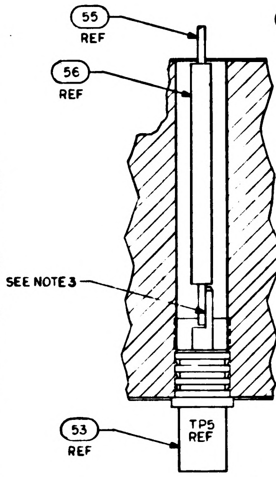
R65 REF
SEE NOTE 3
51 REF
TP2 REF

SECTION B-B



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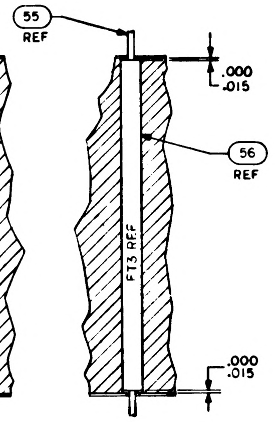
56 REF
SEE NOTE 3
53 REF
TP5 REF

SECTION C-C



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56 REF
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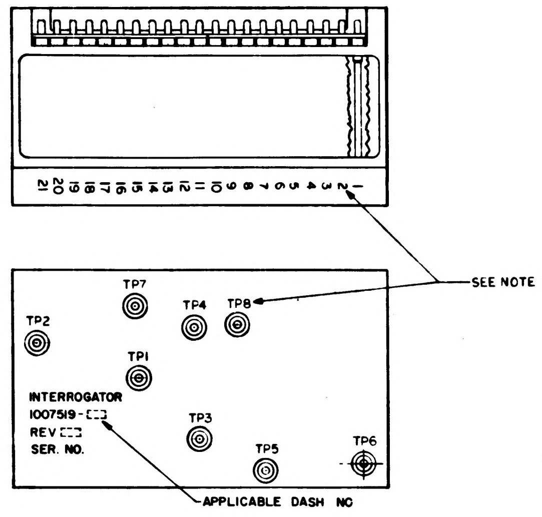
SECTION D-D

TP	COMPONENT
1	R64
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69

TP CHART



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SEE NOTE 8
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TP4
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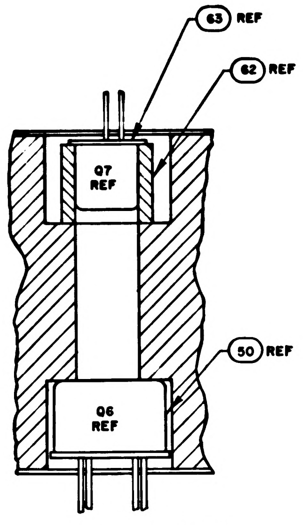
INTERROGATOR
1007519-□□
REV □□
SER. NO.
APPLICABLE DASH NO

MARKING VIEW
SCALE 2/1



63 REF
62 REF
Q7 REF
50 REF
Q6 REF

SECTION E-E

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			╳		1009522	SCHEMATIC	REF
			1		1006750-51	RESISTOR, FIXED FILM	64
			1		1010675-001	TRANSISTOR	63
			1		1008025-1	INSULATOR BUSHING	62
			1		1008540-10	GASKET, CONNECTOR MINIATURE	61
			1		1008540-11	GASKET, CONNECTOR MINIATURE	60
			AR		1006776-20	INSULATION SLEEVING	59
			AR		1006776-21	INSULATION SLEEVING	58
			21		1006775	INSULATOR, WRAPOST-MALE, MINAT	57
			AR		1006776-22	INSULATION SLEEVING	56
			AR		1006757-8	WIRE ELEC .020 DIA	55
			AR		1006757-1	WIRE ELEC .010 ± .020	54
			8		1010292-2	TERMINAL FEED THRU INSULATED	53
			21		1006782-4	CONTACT, WRAPOST-MALE, MINAT	52
			4		1010376-1	TRANSISTOR	51
			2		1010395	TRANSISTOR	50
			7		1010385	DIODE	49
			1		1010286-9	DIODE	48
			1		1006777-19	CAPACITOR, CER	47
			1		1006755-79	CAPACITOR, TANT	46
			1		1006755-83	CAPACITOR, TANT	45
			1		1006777-8	CAPACITOR, CER	44
			1		1006777-13	CAPACITOR, CER	43
							42
			3		1006777-12	CAPACITOR, CER	41
			1		1006777-24	CAPACITOR, CER	40
			2		1006755-69	CAPACITOR, TANT	39
			2		1006777-5	CAPACITOR, CER	38
			2		1006777-7	CAPACITOR, CER	37
			4		1006777-31	CAPACITOR, CER	36
			1		1006777-28	CAPACITOR, CER	35
			2		1006777-27	CAPACITOR, CER	34
			2		1010264-23	CAPACITOR, MYLAR	33
			2		1006777-3	CAPACITOR, CER	32
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			1		1006750-46	RESISTOR, FIXED FILM	27
			2		1006750-36	RESISTOR, FIXED FILM	26
			1		1006750-48	RESISTOR, FIXED FILM	25
			3		1006750-60	RESISTOR, FIXED FILM	24
			2		1006750-66	RESISTOR, FIXED FILM	23
			4		1006750-56	RESISTOR, FIXED FILM	22
			2		1006750-52	RESISTOR, FIXED FILM	21
			2		1006750-49	RESISTOR, FIXED FILM	20
			2		1006750-39	RESISTOR, FIXED FILM	19
			2		1006750-54	RESISTOR, FIXED FILM	18
			2		1006750-55	RESISTOR, FIXED FILM	17
			2		1006750-65	RESISTOR, FIXED FILM	16
			4		1006750-80	RESISTOR, FIXED FILM	15
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			3		1006750-31	RESISTOR, FIXED FILM	13
			2		1006750-41	RESISTOR, FIXED FILM	12
			2		1006750-25	RESISTOR, FIXED FILM	11
			2		1006750-43	RESISTOR, FIXED FILM	10
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			1		1010377-106	RESISTOR, FIXED WW	8
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			2		1010377-105	RESISTOR, FIXED WW	6
			2		1010377-49	RESISTOR, FIXED WW	5
			4		1006750-32	RESISTOR, FIXED FILM	4
			1		1008588	INSULATOR, BOTTOM	3
			1		1008587	INSULATOR, TOP	2
			1		1008036	HEATSINK	1

QUANTITY REQUIRED

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

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THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. Contract NAS 9-497
DRAWN Splane DATE 2 OCT 64
CHECKED A. Udovich 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL 12-8-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INTERROGATOR
ASSEMBLY

CODE IDENT NO. SIZE J NASA DRAWING NO. 1007519
SCALE 5/1 WT SHEET 1 OF 1

B 1007519

(24)

27-1007519

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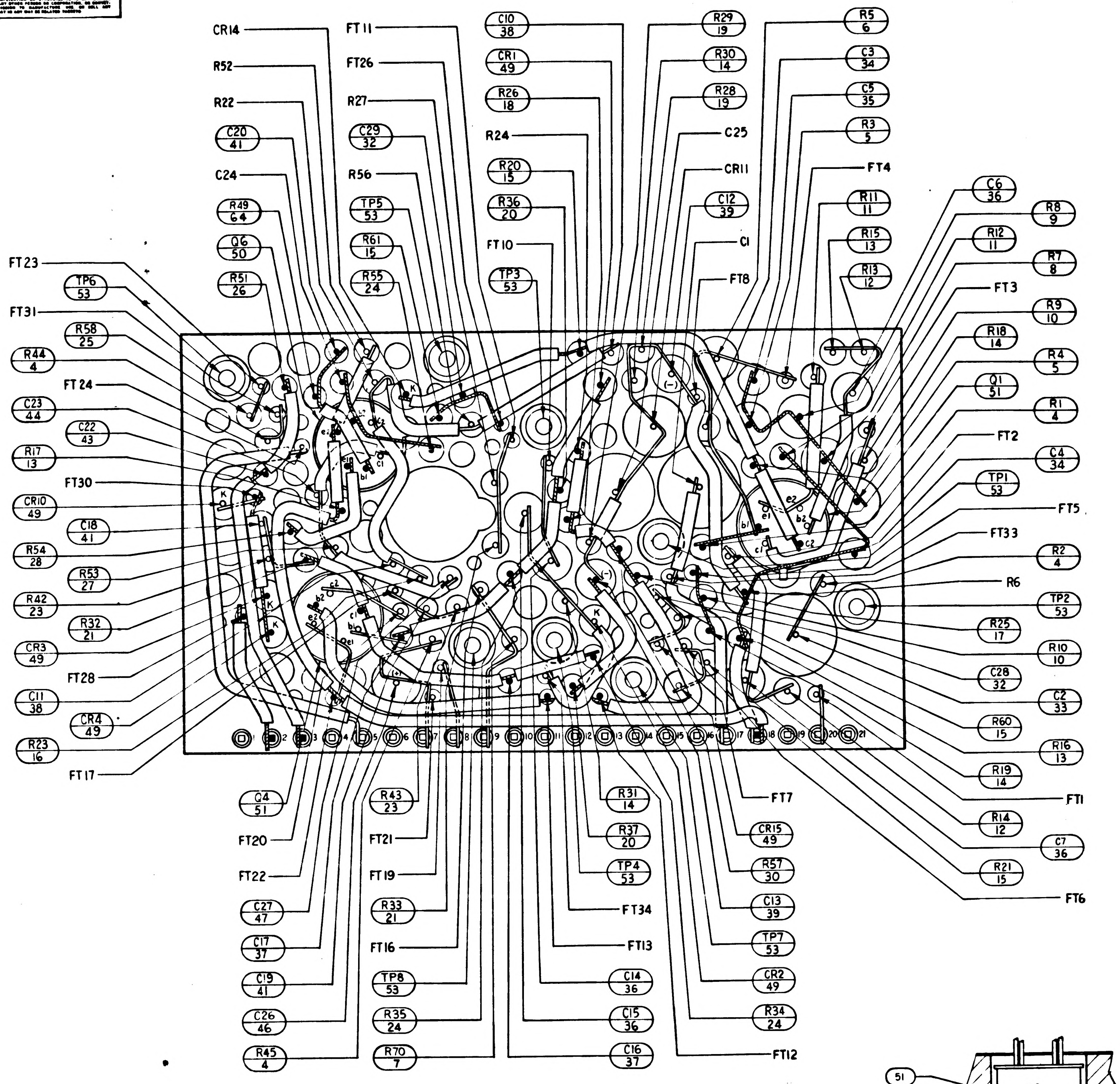
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FT23
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R17 13
FT30
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C18 41
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FT28
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FT17
FT11
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C1
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FT20
FT22
C27 47
C17 37
C19 41
C26 46
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R43 23
FT21
FT19
R33 21
FT16
TP8 53
R35 24
R70 7
R31 14
R37 20
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FT34
FT13
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C16 37
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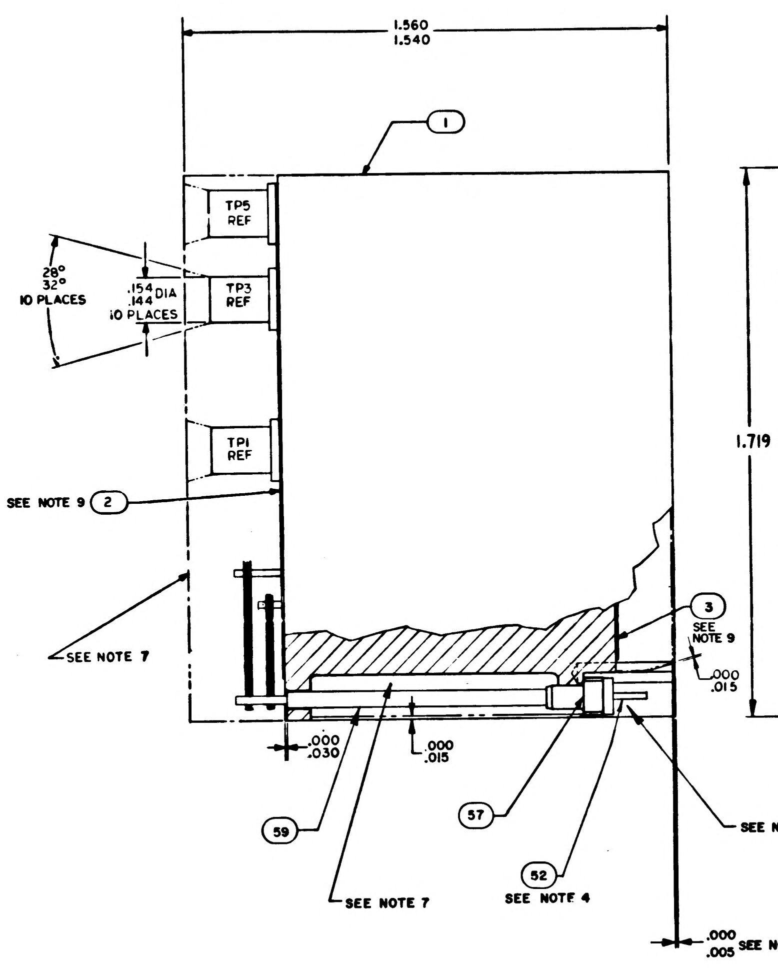
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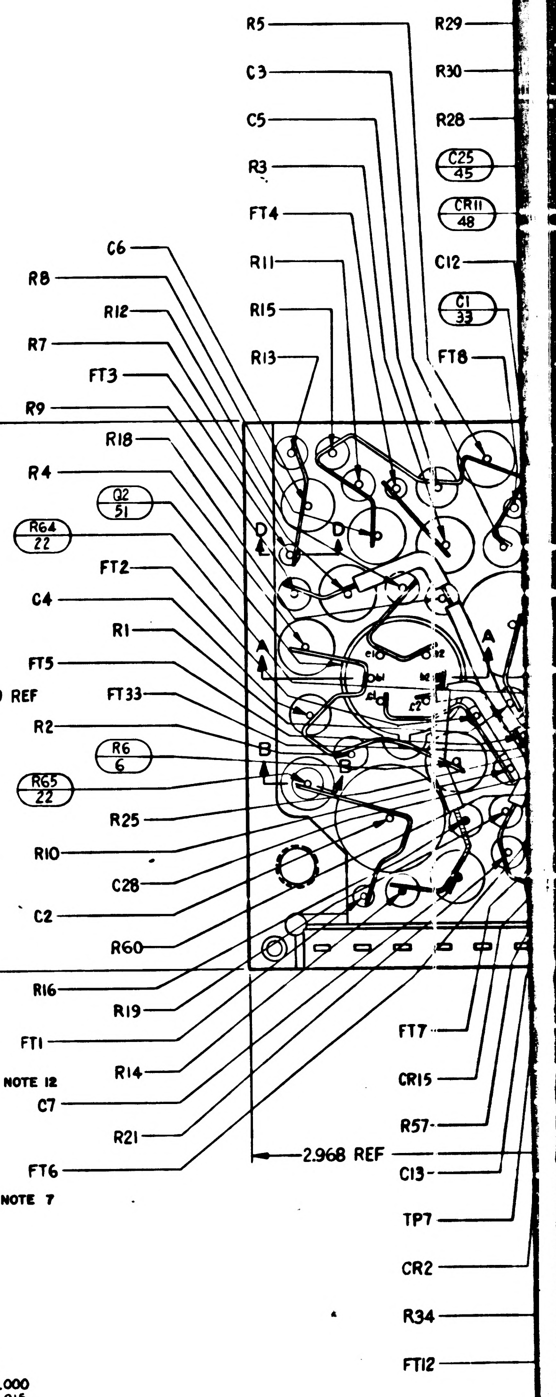
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R4
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FT5
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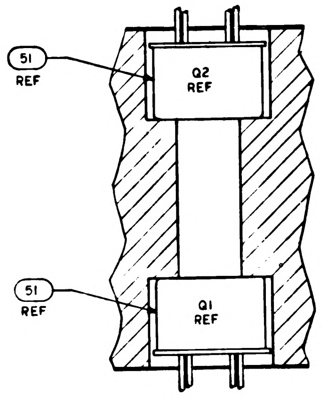
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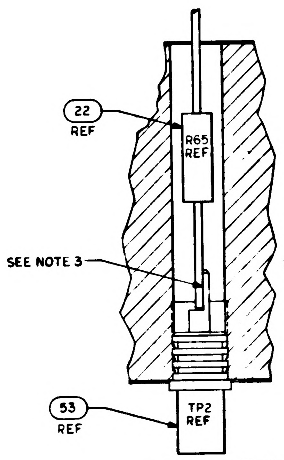
SECTION A-A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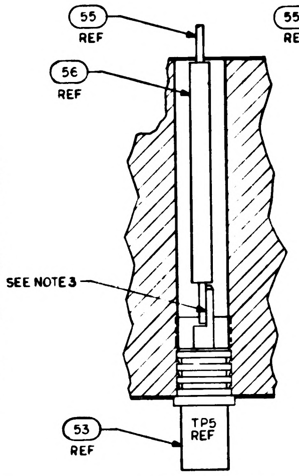
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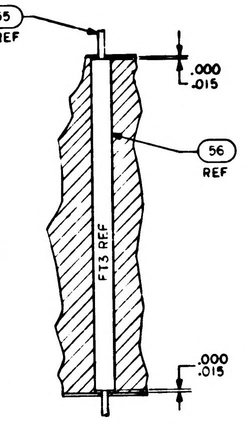
SECTION C-C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SECTION D-D

NOTES:

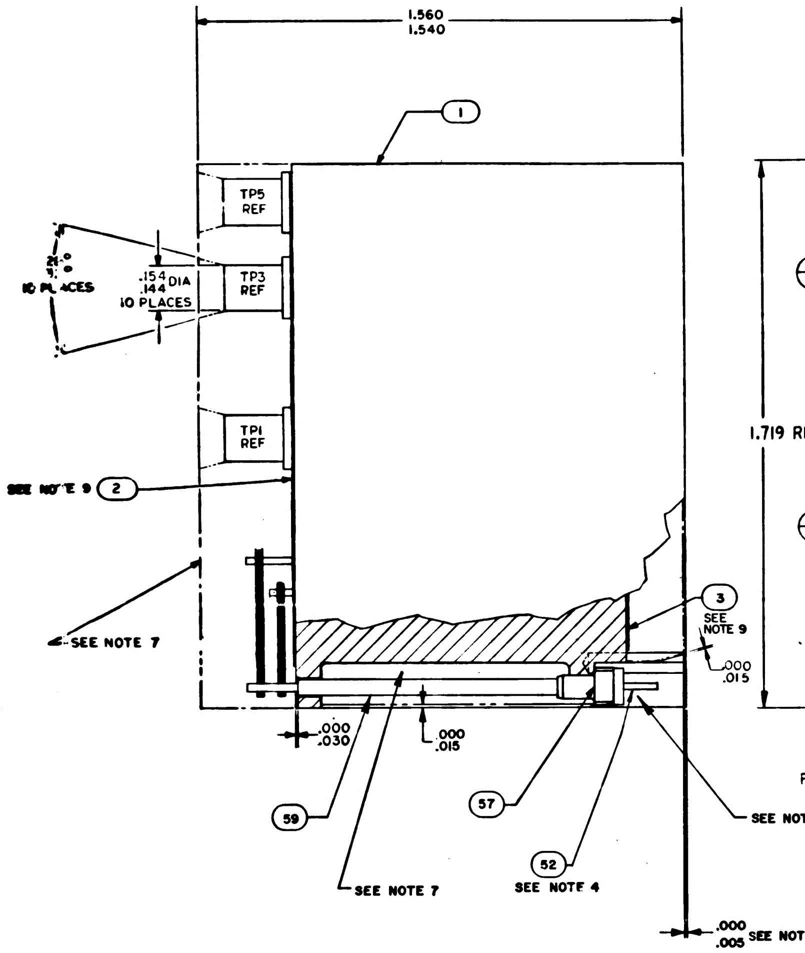
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. STAKE ALL COMPONENTS AND FIND NO.53 PER ND1002009 METHOD C
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005
4. MUST MEET REQUIREMENTS OF ND 1002136
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
8. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
9. ON ITEMS 2 AND 3
   BROKEN PATHS INDICATE INSULATION SLEEVING,
   K INDICATES CATHODE SIDE OF DIODE,
   FT() INDICATES FEED THRU
   PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   B INDICATES BASE LEAD OF TRANSISTOR,
   E INDICATES EMITTER LEAD OF TRANSISTOR
   C() INDICATES COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B() INDICATES BASE LEAD OF MULTISTAGE TRANSISTOR
   E() INDICATES EMITTER LEAD OF MULTISTAGE TRANSISTOR
10. PROCURE PER PS 1007019
11. BOND FIND NO. 60 AND FIND NO. 61 TO FIND NO. 57 PER ND 1002237.
12. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069
14. AR DENOTES AS REQUIRED
15. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.

TP CHART

TP	COMPONENT
1	R64
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69

1/1007519

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
REVISIONS					
A	—	REVISED PER TDRR 10636		24 FEB 65	
B	—	REVISED PER TDRR 17322		15 MAR 65	GM
C	—	REVISED PER TDRR 17966		6 APR 65	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10 PLACES
SEE NOTE 9
2
SEE NOTE 7
3
SEE NOTE 9
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52
SEE NOTE 7
SEE NOTE 4
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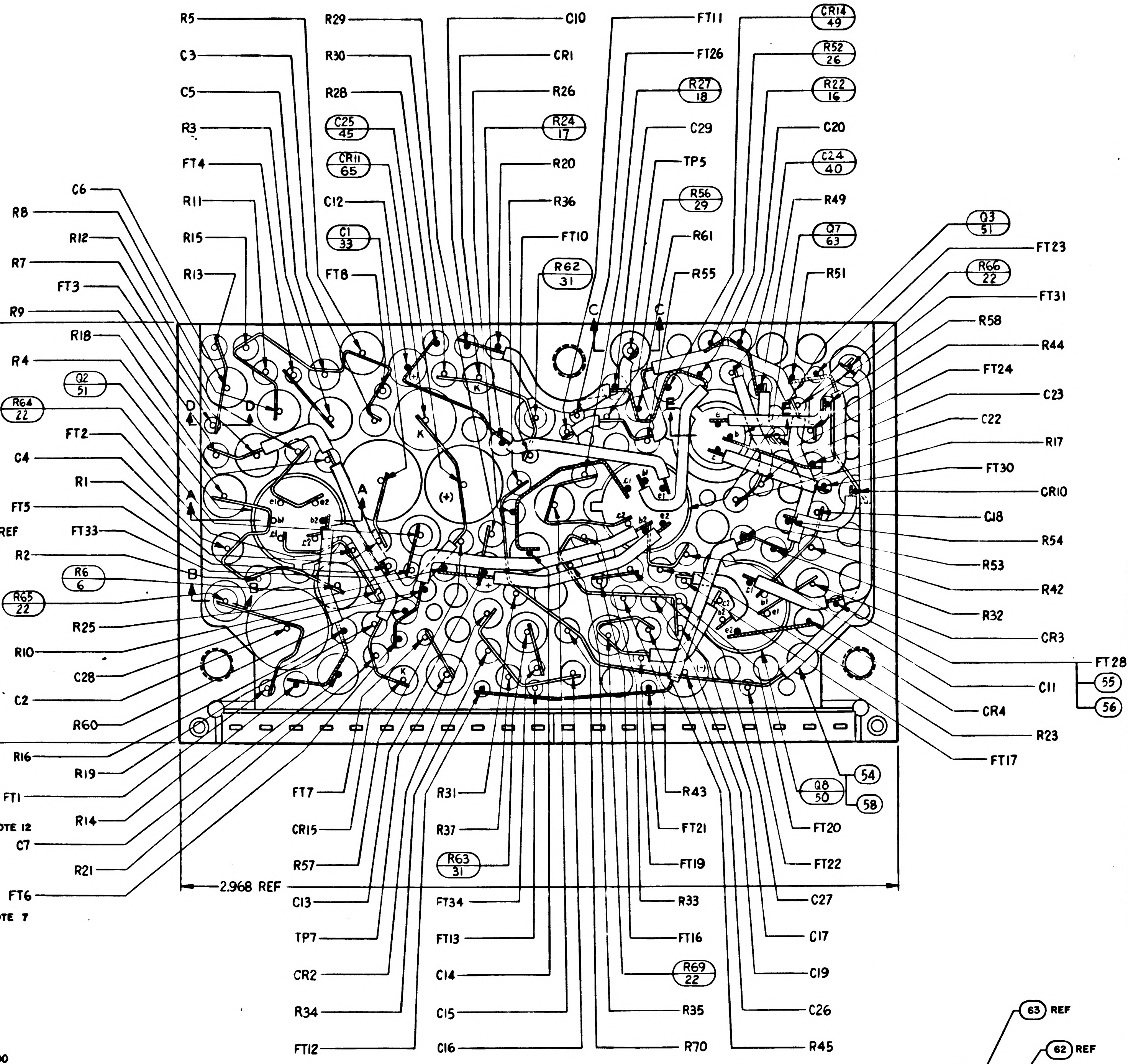
SEE NOTE 7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R3
FT4
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R15
R13
C6
R8
R12
R7
FT3
R9
R18
R4
Q2 51
R64 22
FT2
C4
R1
FT5
FT33
R2
R6 6
R65 22
R25
R10
C28
C2
R60
R16
R19
FT1
R14
C7
R21
FT6
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R36
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FT11
FT26
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C29
TP5
R56 29
R61
R55
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R22 16
C20
C24 40
R49
Q7 63
R51
Q3 51
FT23
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FT31
R58
R44
FT24
C23
C22
R17
FT30
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R53
R42
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FT28
55
56
C11
CR4
R23
FT17
54
Q8 50
58
FT7
CR15
R57
C13
TP7
CR2
R34
FT12
R31
R37
R63 31
FT34
FT13
C14
C15
C16
R43
FT21
FT19
R33
FT16
R69 22
R35
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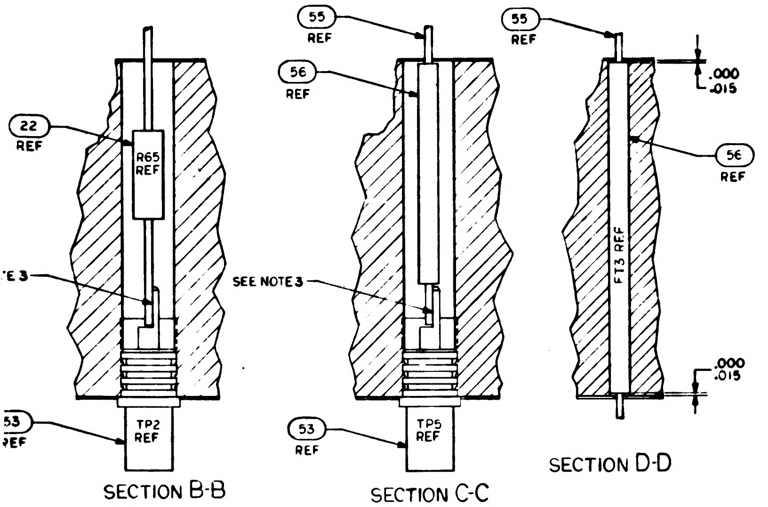
B
C
D
K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.015
56 REF
FT3 REF
.000
.015

SECTION B-B

SECTION C-C

SECTION D-D

TP	COMPONENT
T P CHART	
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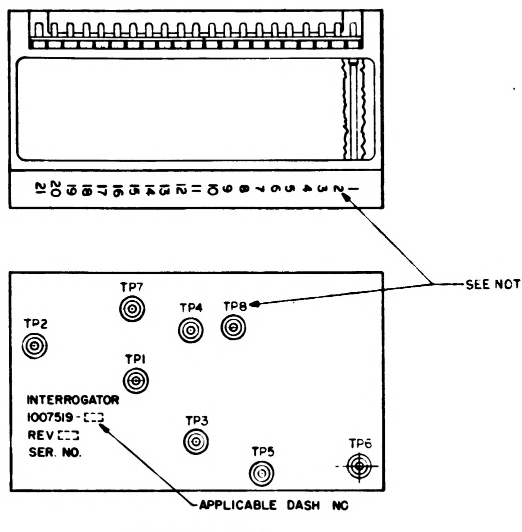
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69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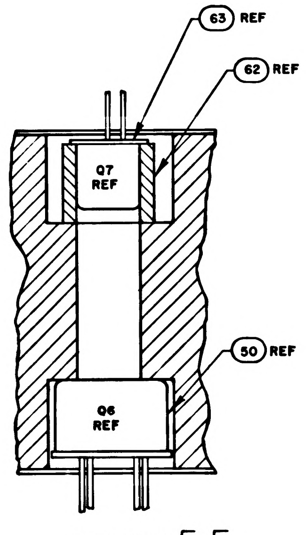
TP8
TP2
TP1
INTERROGATOR
1007519-□□
REV□□
SER. NO.
TP3
TP5
TP6
APPLICABLE DASH NO

MARKING VIEW
SCALE 2/1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62 REF
Q7 REF
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Q6 REF

SECTION E-E

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					1009522	SCHEMATIC	REF
			1		1006750-51	RESISTOR, FIXED FILM	64
			1		1010675-001	TRANSISTOR	63
			1		1008025-1	INSULATOR BUSHING	62
			1		1008540-10	GASKET, CONNECTOR MINIATURE	61
			1		1008540-11	GASKET, CONNECTOR MINIATURE	60
			AR		1006776-20	INSULATION SLEEVING	59
			AR		1006776-21	INSULATION SLEEVING	58
			21		1006775	INSULATOR, WRAPOST-MALE, MINAT	57
			AR		1006776-22	INSULATION SLEEVING	56
			AR		1006757-8	WIRE ELEC .020 DIA	55
			AR		1006757-1	WIRE ELEC .010 ± .020	54
			8		1010292-2	TERMINAL FEED THRU INSULATED	53
			21		1006782-4	CONTACT, WRAPOST-MALE, MINAT	52
			4		1010376-1	TRANSISTOR	51
			2		1010395	TRANSISTOR	50
			7		1010385	DIODE	49
			~~1~~		~~1010206-9~~	~~DIODE~~	48
			1		1006777-19	CAPACITOR, CER	47
			1		1006755-79	CAPACITOR, TANT	46
			1		1006755-83	CAPACITOR, TANT	45
			1		1006777-8	CAPACITOR, CER	44
			1		1006777-13	CAPACITOR, CER	43
							42
			3		1006777-12	CAPACITOR, CER	41
			1		1006777-24	CAPACITOR, CER	40
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			2		1006777-5	CAPACITOR, CER	38
			2		1006777-7	CAPACITOR, CER	37
			4		1006777-31	CAPACITOR, CER	36
			1		1006777-28	CAPACITOR, CER	35
			2		1006777-27	CAPACITOR, CER	34
			2		1010264-23	CAPACITOR, MYLAR	33
			2		1006777-3	CAPACITOR, CER	32
			2		1006750-63	RESISTOR, FIXED FILM	31
			1		1006750-24	RESISTOR, FIXED FILM	30
			1		1006750-45	RESISTOR, FIXED FILM	29
			1		1006750-17	RESISTOR, FIXED FILM	28
			1		1006750-46	RESISTOR, FIXED FILM	27
			2		1006750-36	RESISTOR, FIXED FILM	26
			1		1006750-48	RESISTOR, FIXED FILM	25
			3		1006750-60	RESISTOR, FIXED FILM	24
			2		1006750-66	RESISTOR, FIXED FILM	23
			4		1006750-56	RESISTOR, FIXED FILM	22
			2		1006750-42	RESISTOR, FIXED FILM	21
			2		1006750-49	RESISTOR, FIXED FILM	20
			2		1006750-39	RESISTOR, FIXED FILM	19
			2		1006750-54	RESISTOR, FIXED FILM	18
			2		1006750-55	RESISTOR, FIXED FILM	17
			2		1006750-65	RESISTOR, FIXED FILM	16
			4		1006750-80	RESISTOR, FIXED FILM	15
			4		1006750-53	RESISTOR, FIXED FILM	14
			3		1006750-31	RESISTOR, FIXED FILM	13
			2		1006750-41	RESISTOR, FIXED FILM	12
			2		1006750-25	RESISTOR, FIXED FILM	11
			2		1006750-43	RESISTOR, FIXED FILM	10
			1		1010377-51	RESISTOR, FIXED WW	9
			1		1010377-106	RESISTOR, FIXED WW	8
			1		1006750-42	RESISTOR, FIXED FILM	7
			2		1010377-105	RESISTOR, FIXED WW	6
			2		1010377-49	RESISTOR, FIXED WW	5
			4		1006750-32	RESISTOR, FIXED FILM	4
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			1		1008587	INSULATOR, TOP	2
			1		1008036	HEATSINK	1
QUANTITY REQUIRED					LIST OF MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

M I T
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN Splane DATE 2 OCT 64
CHECKED A. Udovich 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL 12-8-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

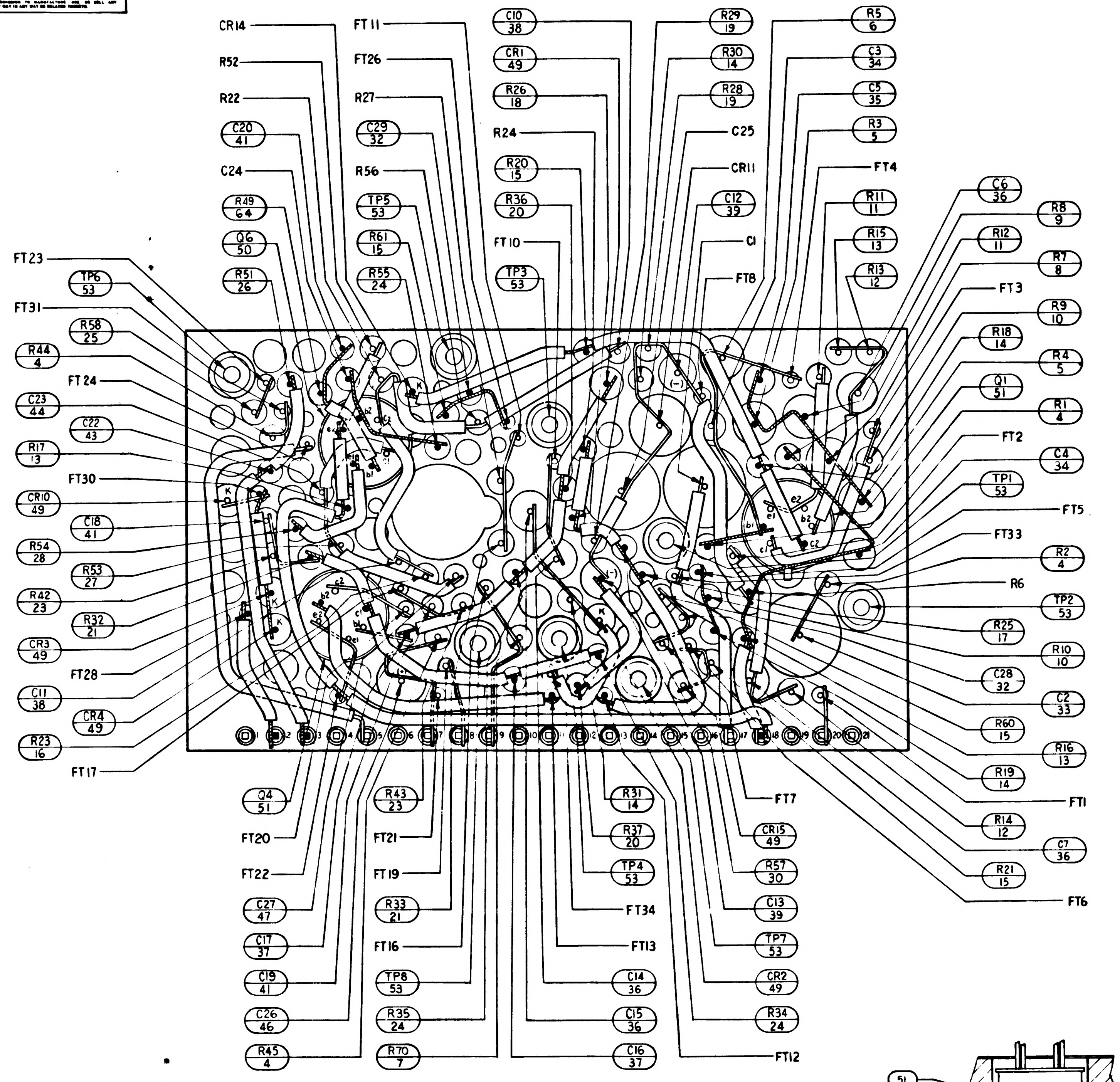
INTERROGATOR
ASSEMBLY

CODE IDENT NO.
SIZE J
NASA DRAWING NO. 1007519
SCALE 5/1
WT
SHEET 1 OF 1

1007519

27 10075 19

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.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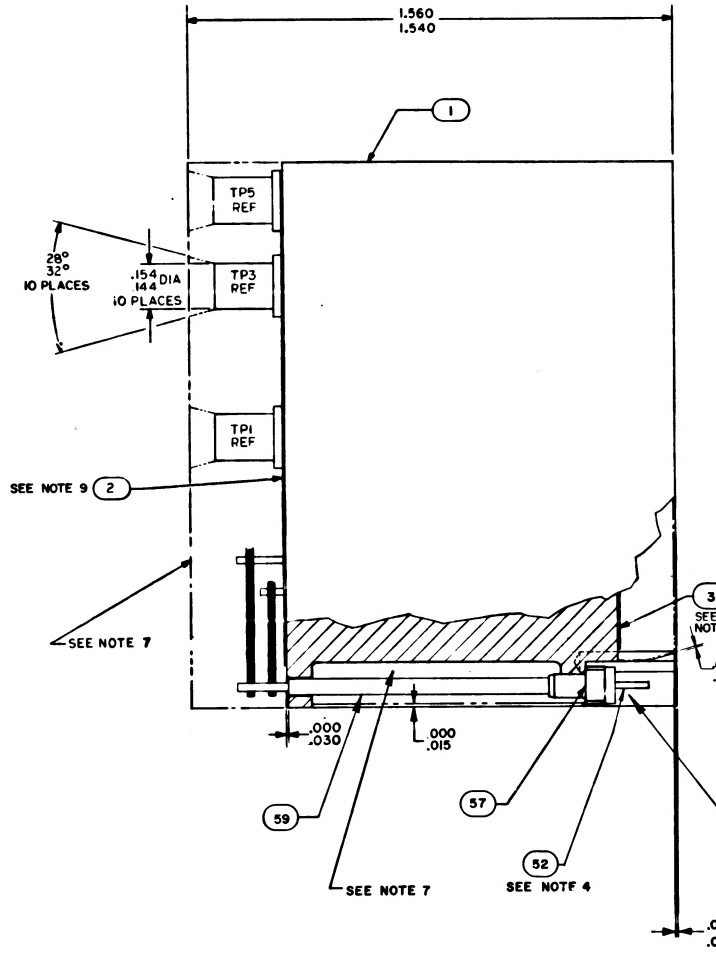
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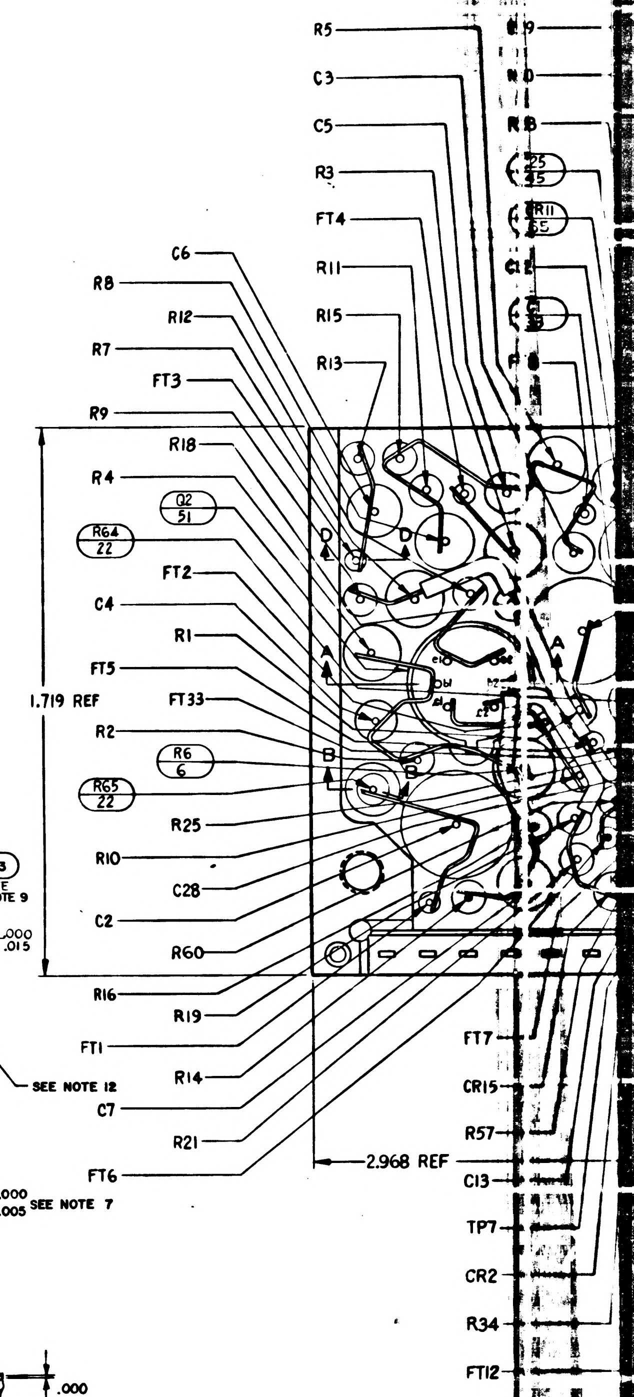
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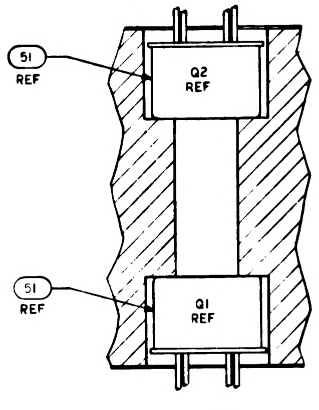
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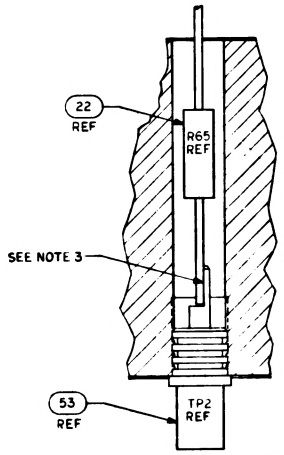
SECTION A-A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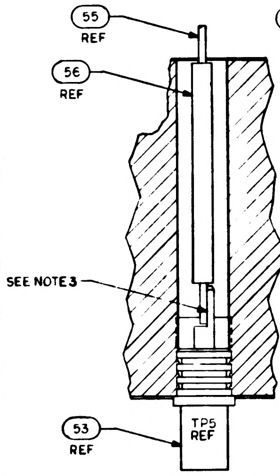
SECTION B-B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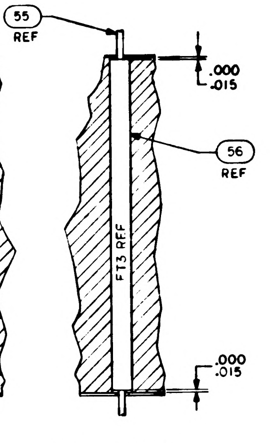
SECTION C-C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SECTION D-D

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. STAKE ALL COMPONENTS AND FIND NO.53 PER ND1002009 METHOD C
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005
4. MUST MEET REQUIREMENTS OF ND 1002136
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
8. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
9. ON ITEMS 2 AND 3
   BROKEN PATHS INDICATE INSULATION SLEEVING,
   K INDICATES CATHODE SIDE OF DIODE,
   FT() INDICATES FEED THRU
   PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   B INDICATES BASE LEAD OF TRANSISTOR,
   E INDICATES EMITTER LEAD OF TRANSISTOR
   C() INDICATES COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B() INDICATES BASE LEAD OF MULTISTAGE TRANSISTOR
   E() INDICATES EMITTER LEAD OF MULTISTAGE TRANSISTOR
10. PROCURE PER PS 1007019
11. BOND FIND NO. 60 AND FIND NO. 61 TO FIND NO. 57 PER ND 1002237.
12. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069
14. AR DENOTES AS REQUIRED
15. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE 1.

TP CHART

TP	COMPONENT
1	R64
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69

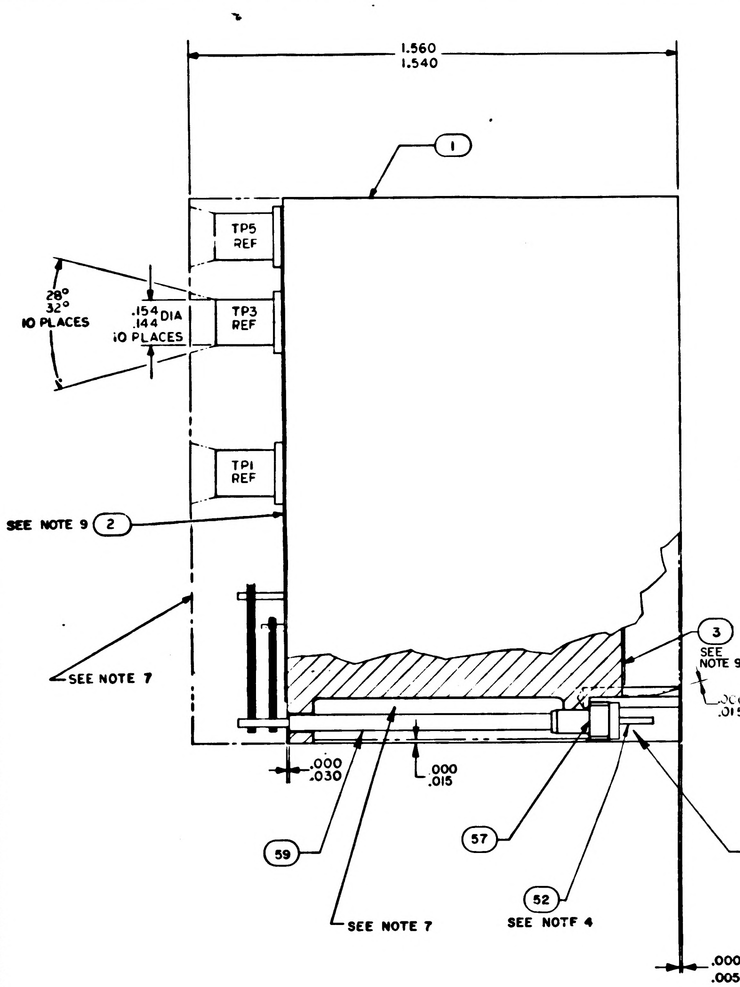
1710007519

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXT HEATSINK SURF.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
A	—	REVISED PER TDRR 10636		24-FEB-65	
B	—	REVISED PER TDRR 17322		15 [illegible] 65	GM
C	—	REVISED PER TDRR 17966		[illegible]	
D	—	REVISED PER TDRR-19450	—	2-JUN-65	B.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1.540
①
TP5 REF
TP3 REF
TP1 REF
28°
32°
10 PLACES
.154
.144 DIA
10 PLACES
SEE NOTE 9 ②
SEE NOTE 7
③ SEE NOTE 9
.000
.015
.000
.030
59
57
52 SEE NOTE 4
SEE NOTE 7
SEE NOTE 12
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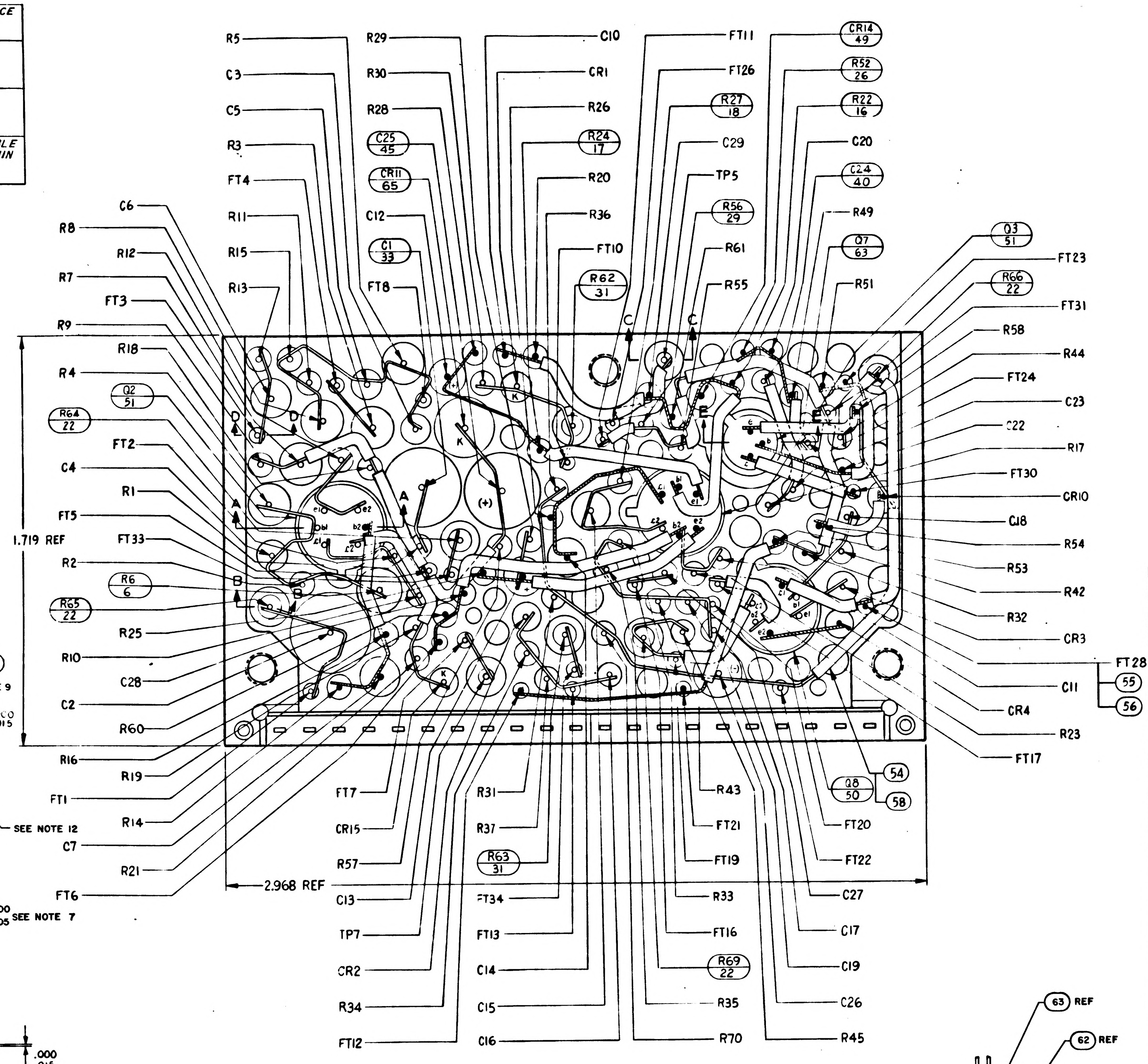
.005 SEE NOTE 7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C3
C5
R3
FT4
R11
R15
R13
C6
R8
R12
R7
FT3
R9
R18
R4
Q2 51
R64 22
FT2
C4
R1
FT5
FT33
R2
R6 6
R65 22
R25
R10
C28
C2
R60
R16
R19
FT1
R14
C7
R21
FT6
1.719 REF
2.968 REF
R29
R30
R28
C25 45
CR11 65
C12
C1 33
FT8
C10
CR1
R26
R24 17
R20
R36
FT10
R62 31
FT11
FT26
R27 18
C29
TP5
R56 29
R61
R55
CR14 49
R52 26
R22 16
C20
C24 40
R49
Q7 63
R51
Q3 51
FT23
R66 22
FT31
R58
R44
FT24
C23
C22
R17
FT30
CR10
C18
R54
R53
R42
R32
CR3
FT28
55
56
C11
CR4
R23
FT17
FT7
CR15
R57
C13
TP7
CR2
R34
FT12
R31
R37
R63 31
FT34
FT13
C14
C15
C16
R43
FT21
FT19
R33
FT16
R69 22
R35
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C27
C17
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C26
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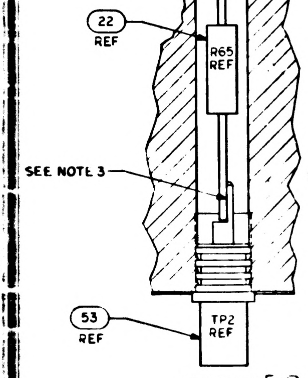
A
B
C
D
E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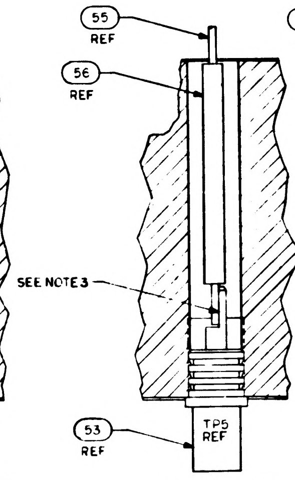
R65 REF
SEE NOTE 3
TP2 REF
53 REF

SECTION B-B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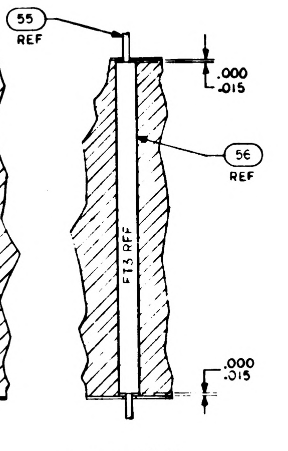
SECTION C-C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.015
56 REF
FT3 REF
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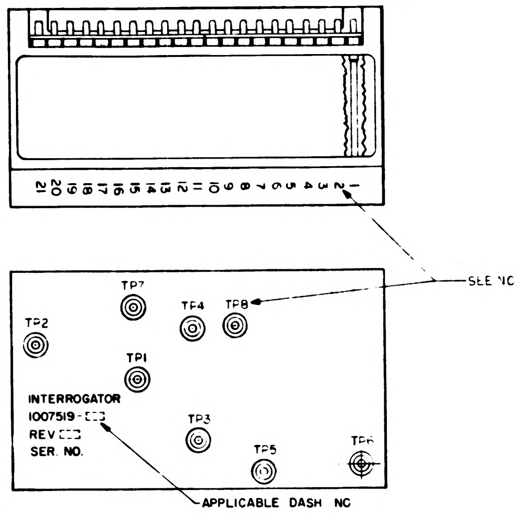
.015

SECTION D-D

TP	COMPONENT
1	R64
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69

TP CHART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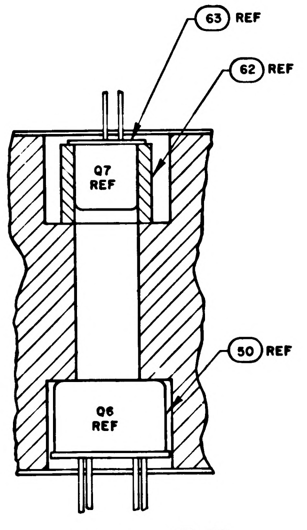
SEE NOTE 8
TP7
TP4
TP8
TP2
TP1
TP3
TP5
TP6
INTERROGATOR
1007519-
REV
SER. NO.
APPLICABLE DASH NO

MARKING VIEW
SCALE 2/1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62 REF
Q7 REF
50 REF
Q6 REF

SECTION E-E

LIST OF MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.
1		1010830-9	ZENER DIODE	65
		1009522	SCHEMATIC	REF
1		1006750-51	RESISTOR, FIXED FILM	64
1		1010675-001	TRANSISTOR	63
1		1008025-1	INSULATOR BUSHING	62
1		1008540-10	GASKET, CONNECTOR MINIATURE	61
1		1008540-11	GASKET, CONNECTOR MINIATURE	60
AR		1006776-20	INSULATION SLEEVING	59
AR		1006776-21	INSULATION SLEEVING	58
21		1006775	INSULATOR, WRAPOST-MALE, MINAT	57
AR		1006776-22	INSULATION SLEEVING	56
AR		1006757-8	WIRE ELEC .020 DIA	55
AR		1006757-1	WIRE ELEC .010 ± .020	54
8		1010292-2	TERMINAL FEED THRU INSULATED	53
21		1006782-4	CONTACT, WRAPOST-MALE, MINAT	52
4		1010376-1	TRANSISTOR	51
2		1010395	TRANSISTOR	50
7		1010385	DIODE	49
~~1~~		~~1010286-9~~	~~DIODE~~	48
1		1006777-19	CAPACITOR, CER	47
1		1006755-79	CAPACITOR, TANT	46
1		1006755-83	CAPACITOR, TANT	45
1		1006777-8	CAPACITOR, CER	44
1		1006777-13	CAPACITOR, CER	43
				42
3		1006777-12	CAPACITOR, CER	41
1		1006777-24	CAPACITOR, CER	40
2		1006755-69	CAPACITOR, TANT	39
2		1006777-5	CAPACITOR, CER	38
2		1006777-7	CAPACITOR, CER	37
4		1006777-31	CAPACITOR, CER	36
1		1006777-28	CAPACITOR, CER	35
2		1006777-27	CAPACITOR, CER	34
2		1010264-23	CAPACITOR, MYLAR	33
2		1006777-3	CAPACITOR, CER	32
2		1006750-63	RESISTOR, FIXED FILM	31
1		1006750-24	RESISTOR, FIXED FILM	30
1		1006750-45	RESISTOR, FIXED FILM	29
1		1006750-1[illegible]	RESISTOR, FIXED FILM	28
1		1006750-46	RESISTOR, FIXED FILM	27
2		1006750-36	RESISTOR, FIXED FILM	26
1		1006750-46	RESISTOR, FIXED FILM	25
3		1006750-60	RESISTOR, FIXED FILM	24
2		1006750-66	RESISTOR, FIXED FILM	23
4		1006750-56	RESISTOR, FIXED FILM	22
2		1006750-[illegible]2	RESISTOR, FIXED FILM	21
2		1006750-49	RESISTOR, FIXED FILM	20
2		1006750-39	RESISTOR, FIXED FILM	19
2		1006750-54	RESISTOR, FIXED FILM	18
2		1006750-55	RESISTOR, FIXED FILM	17
2		1006750-65	RESISTOR, FIXED FILM	16
4		1006750-80	RESISTOR, FIXED FILM	15
4		1006750-53	RESISTOR, FIXED FILM	14
3		1006750-31	RESISTOR, FIXED FILM	13
2		1006750-41	RESISTOR, FIXED FILM	12
2		1006750-25	RESISTOR, FIXED FILM	11
2		1006750-43	RESISTOR, FIXED FILM	10
1		1010377-51	RESISTOR, FIXED WW	9
1		1010377-106	RESISTOR, FIXED WW	8
1		1006750-42	RESISTOR, FIXED FILM	7
2		1010377-105	RESISTOR, FIXED WW	6
2		1010377-49	RESISTOR, FIXED WW	5
4		1006750-32	RESISTOR, FIXED FILM	4
1		1008568	INSULATOR, BOTTOM	3
1		1008567	INSULATOR, TOP	2
1		1008036	HEATSINK	1

NEXT ASSY	USED ON	APPLICABLE DASH NO
1007574		
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ± .02 XXX ± .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN Splene DATE 9 OCT 64
CHECKED Udovich 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

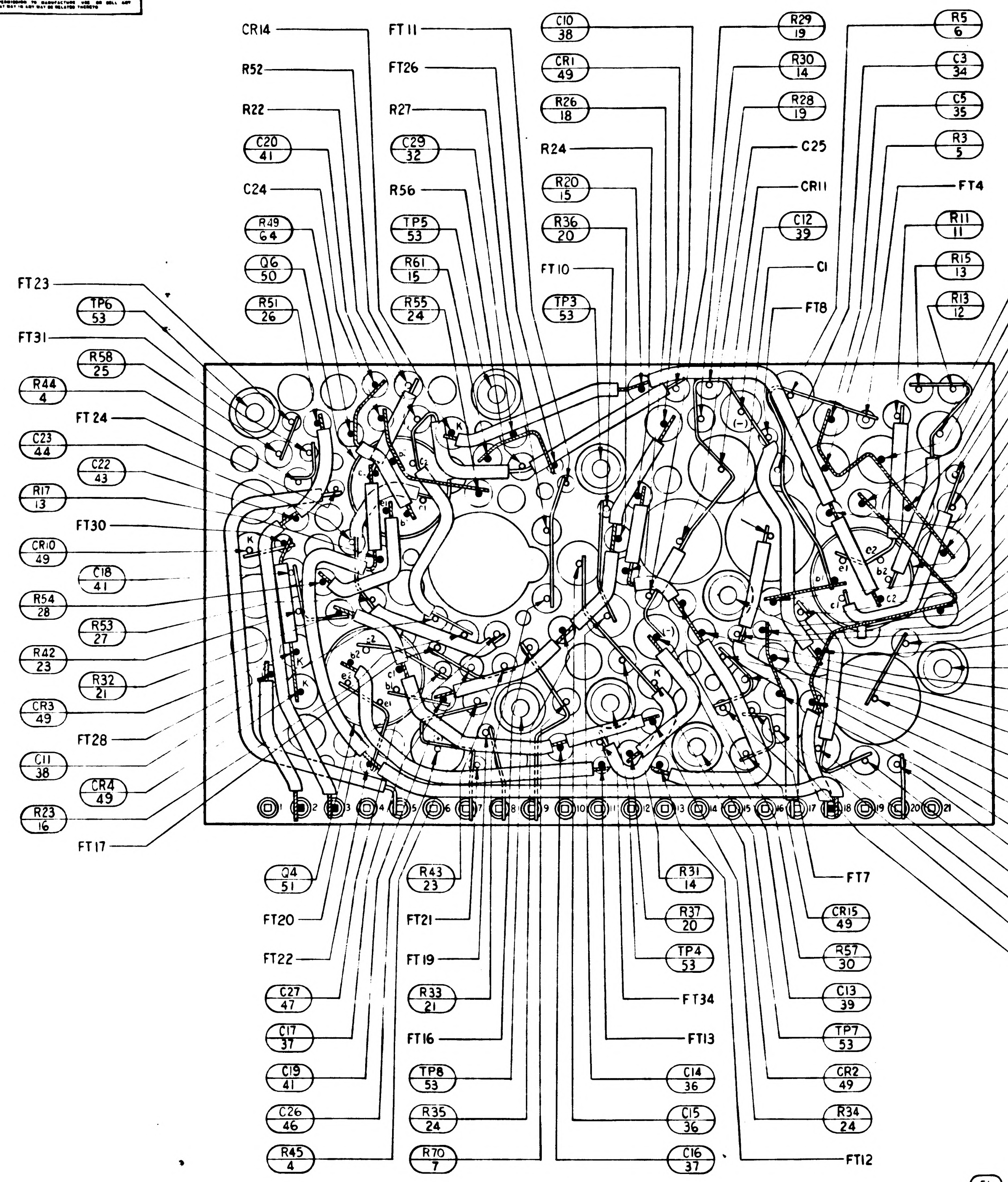
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INTERROGATOR
ASSEMBLY

CODE IDENT NO 80230
SIZE J
NASA DRAWING NO. 1007519
SCALE 5/1
WT
SHEET 1 OF 1

1007519 D

2/1007519



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FT24
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R17 13
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R54 28
R53 27
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FT28
C11 38
CR4 49
R23 16
FT17
FT11
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R56
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R28 19
C25
CR11
C12 39
C1
FT8
R5 6
C3 34
C5 35
R3 5
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C6 36
R8 9
R12 11
R7 8
FT3
R9 10
R18 14
R4 5
Q1 51
R1 4
FT2
C4 34
TP1 53
FT5
FT33
R2 4
R6
TP2 53
R25 17
R10 10
C28 32
C2 33
R60 15
R16 13
R19 14
FT1
R14 12
C7 36
R21 15
FT6
Q4 51
FT20
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C19 41
C26 46
R45 4
R43 23
FT21
FT19
R33 21
FT16
TP8 53
R35 24
R70 7
R31 14
R37 20
TP4 53
FT34
FT13
C14 36
C15 36
C16 37
FT7
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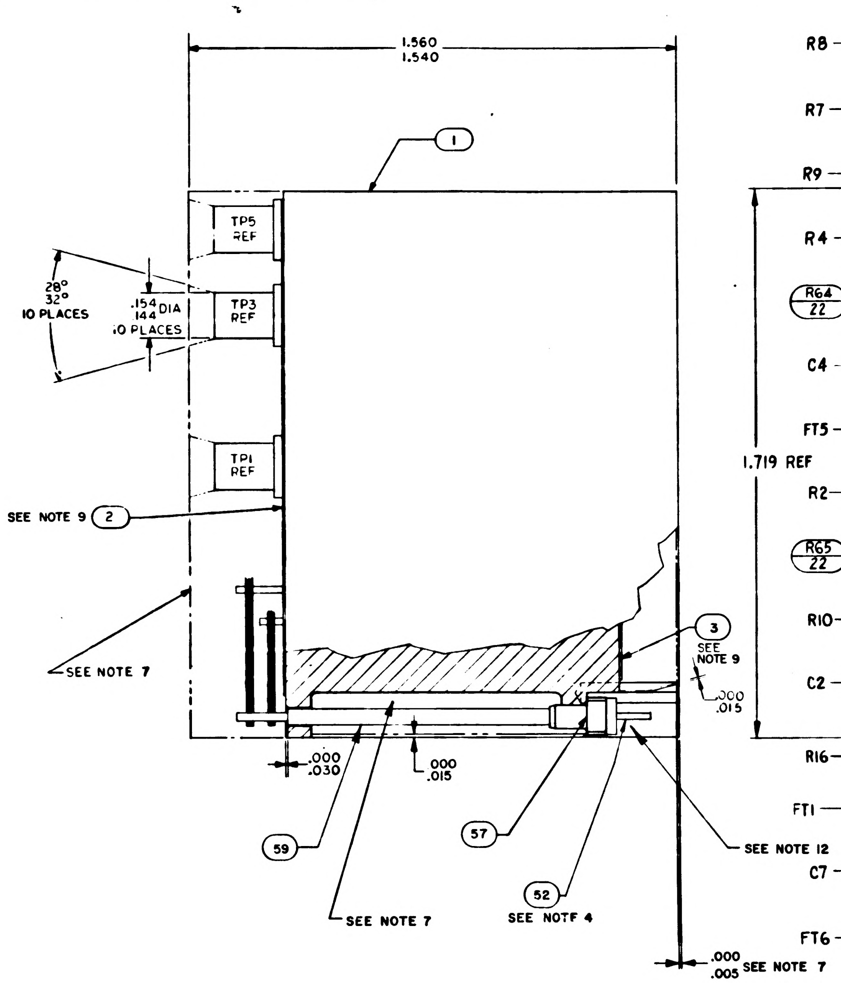
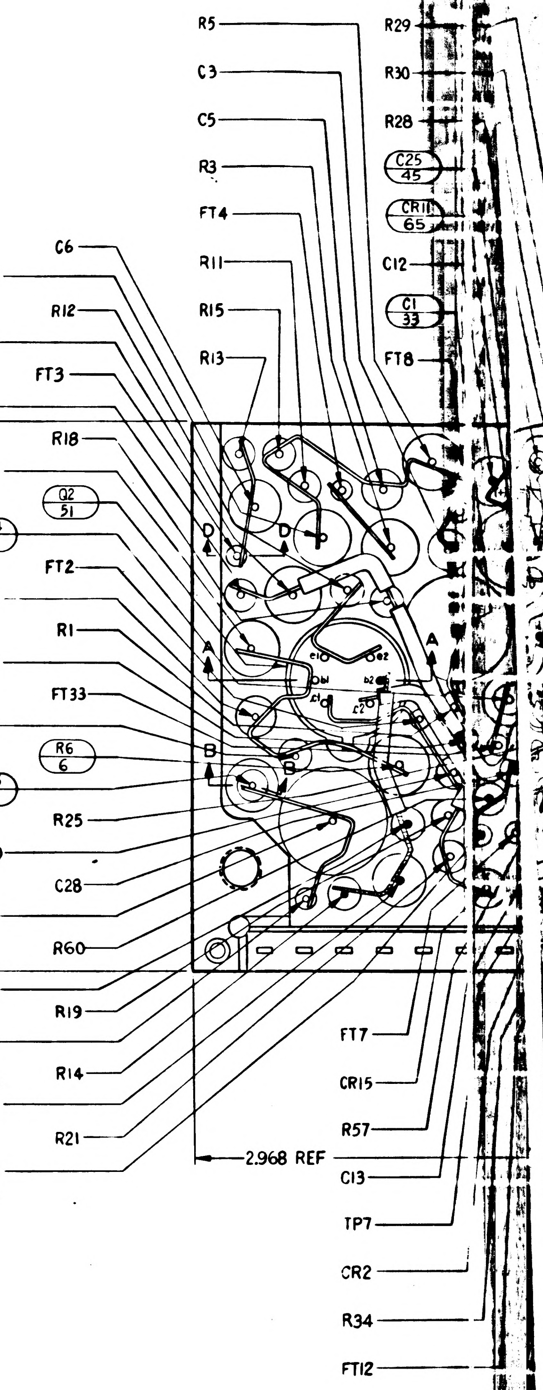


1.560
1.540
1
TP5 REF
TP3 REF
TP1 REF
28°
32°
10 PLACES
.154
.144 DIA
10 PLACES
SEE NOTE 9 2
SEE NOTE 7
3 SEE NOTE 9
.000
.015
1.719 REF
.000
.030
.000
.015
59
57
52 SEE NOTE 4
SEE NOTE 12
SEE NOTE 7
.000
.005 SEE NOTE 7



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C3
R30
C5
R28
R3
C25 45
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FT4
R11
C12
R15
C1 33
R13
FT8
C6
R8
R12
R7
FT3
R9
R18
R4
Q2 51
R64 22
FT2
C4
R1
FT5
FT33
R2
R6 6
R65 22
R25
R10
C28
C2
R60
R16
FT1
R19
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C7
R21
FT6
FT7
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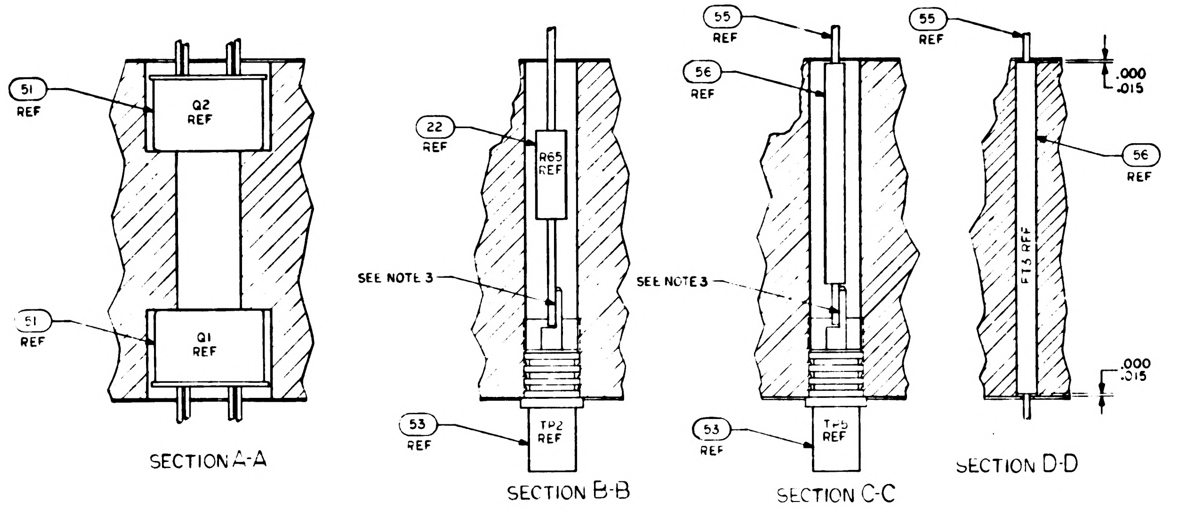

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Q2 REF
51 REF
Q1 REF
SECTION A-A
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SEE NOTE 3
53 REF
TP2 REF
SECTION B-B
55 REF
56 REF
SEE NOTE 3
53 REF
TP5 REF
SECTION C-C
55 REF
.000
.015
56 REF
FT5 REF
.000
.015
SECTION D-D

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXT HEATSINK SURF.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. STAKE ALL COMPONENTS AND FIND NO 53 PER ND1002[illegible]9 METHOD C
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005
4. MUST MEET REQUIREMENTS OF ND 1002136
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
8. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
9. ON ITEMS 2 AND 3
   BROKEN PATHS INDICATE INSULATION SLEEVING,
   K INDICATES CATHODE SIDE OF DIODE,
   FT() INDICATES FEED THRU
   PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   B INDICATES BASE LEAD OF TRANSISTOR,
   E INDICATES EMITTER LEAD OF TRANSISTOR
   C() INDICATES COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B() INDICATES BASE LEAD OF MULTISTAGE TRANSISTOR
   E() INDICATES EMITTER LEAD OF MULTISTAGE TRANSISTOR
10. PROCURE PER PS 1007019
11. BOND FIND NO. 60 AND FIND NO. 61 TO FIND NO. 57 PER ND 1002237.
12. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069
14. AR DENOTES AS REQUIRED

~~15. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~

16. *CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.*

TP CHART

TP	COMPONENT
1	R64
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69

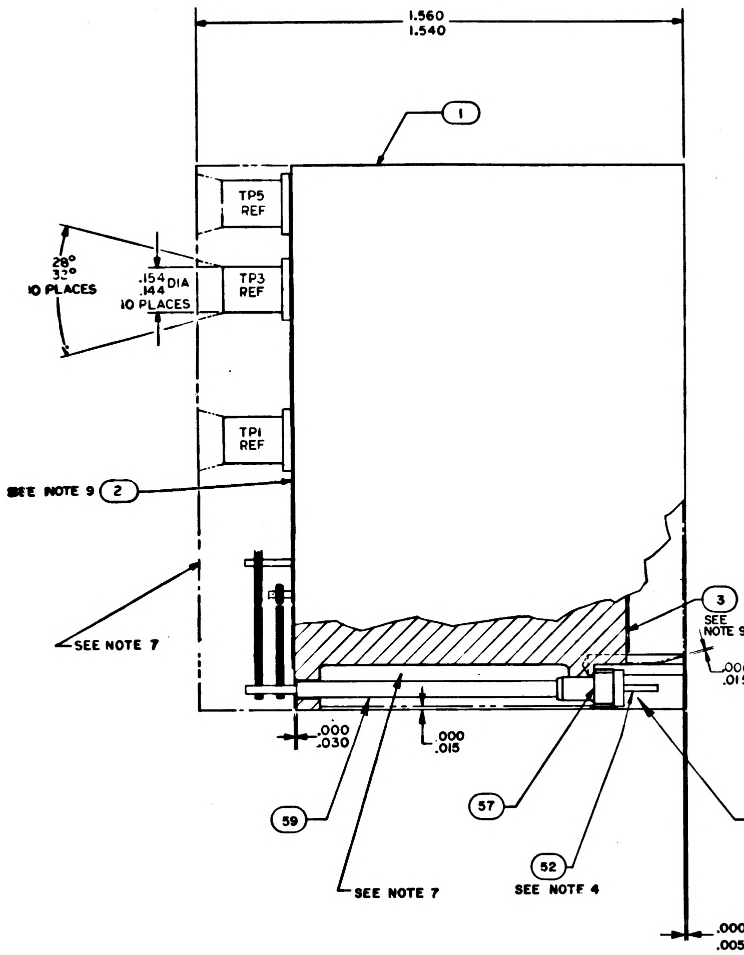
INTERROG
1007519
REV
SER NO

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXT HEATSINK SURF.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
A	—	REVISED PER TDRR 10636		2-FEB [illegible]	[illegible]
B	—	REVISED PER TDRR 17322		15-MAR 65	GM EF
C	—	REVISED PER TDRR 17906		[illegible]	[illegible]
D	—	REVISED PER TDRR-19450	—	2-JUN -65	B
E	—	REVISED PER TDRR 19502		9-JUN 65	[illegible]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1.540
1
TP5 REF
TP3 REF
TP1 REF
28°
32°
10 PLACES
.154
.144 DIA
10 PLACES
SEE NOTE 9
2
SEE NOTE 7
3
SEE NOTE 9
.000
.015
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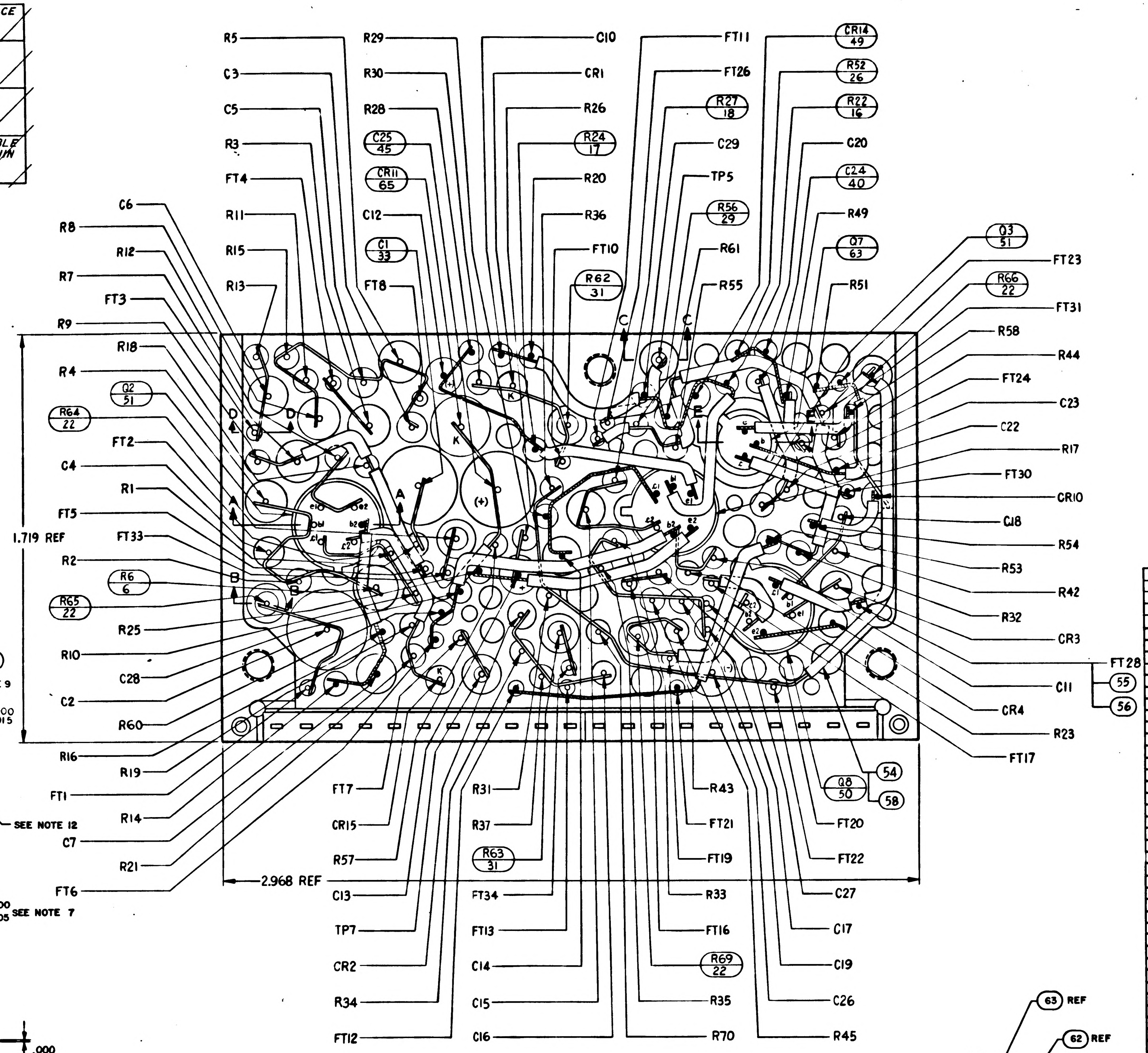
.000
.015
59
57
SEE NOTE 12
52
SEE NOTE 4
SEE NOTE 7
.000
.005 SEE NOTE 7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C3
C5
R3
FT4
R11
R15
R13
R29
R30
R28
C25 45
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C12
C1 33
FT8
C10
CR1
R26
R24 17
R20
R36
FT10
R62 31
FT11
FT26
R27 18
C29
TP5
R56 29
R61
R55
CR14 49
R52 26
R22 16
C20
C24 40
R49
Q7 63
R51
C6
R8
R12
R7
FT3
R9
R18
R4
Q2 51
R64 22
FT2
C4
R1
FT5
FT33
R2
R6 6
R65 22
R25
R10
C28
C2
R60
R16
R19
FT1
R14
C7
R21
FT6
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FT23
R66 22
FT31
R58
R44
FT24
C23
C22
R17
FT30
CR10
C18
R54
R53
R42
R32
CR3
FT28
55
56
C11
CR4
R23
FT17
Q8 50
54
58
FT7
CR15
R57
C13
TP7
CR2
R34
FT12
R31
R37
R63 31
FT34
FT13
C14
C15
C16
R43
FT21
FT19
R33
FT16
R69 22
R35
R70
FT20
FT22
C27
C17
C19
C26
R45
2.968 REF
A
B
C
D
K

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			X		1009522	SCHEMATIC	REF
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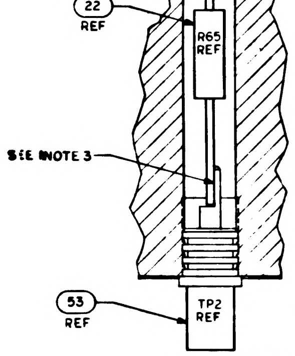
			1		1010675-001	TRANSISTOR	63
			1		1008025-1	INSULATOR BUSHING	62
			1		1008540-10	GASKET, CONNECTOR MINIATURE	61
			1		1008540-11	GASKET, CONNECTOR MINIATURE	60
			AR		1006776-20	INSULATION SLEEVING	59
			AR		1006776-21	INSULATION SLEEVING	58
			21		1006775	INSULATOR, WRAPOST-MALE, MINAT	57
			AR		1006776-22	INSULATION SLEEVING	56
			AR		1006757-8	WIRE ELEC .020 DIA	55
			AR		1006757-1	WIRE ELEC .010 ± .020	54
			8		1010292-2	TERMINAL FEED THRU INSULATED	53
			21		1006782-4	CONTACT, WRAPOST-MALE, MINAT	52
			4		1010376-1	TRANSISTOR	51
			2		1010395	TRANSISTOR	50
			7		1010385	DIODE	49
			~~1~~		~~1010286-9~~	~~DIODE~~	48
			1		1006777-19	CAPACITOR, CER	47
			1		1006755-79	CAPACITOR, TANT	46
			1		1006755-83	CAPACITOR, TANT	45
			1		1006777-8	CAPACITOR, CER	44
			1		1006777-13	CAPACITOR, CER	43
							42
			3		1006777-12	CAPACITOR, CER	41
			[illegible]		1006777-24	CAPACITOR, CER	40
			2		1006755-69	CAPACITOR, TANT	39
			2		1006777-5	CAPACITOR, CER	38
			2		1006777-7	CAPACITOR, CER	37
			4		1006777-31	CAPACITOR, CER	36
			1		1006777-28	CAPACITOR, CER	35
			2		1006777-27	CAPACITOR, CER	34
			2		1010264-23	CAPACITOR, MYLAR	33
			2		1006777-3	CAPACITOR, CER	32
			2		1006750-63	RESISTOR, FIXED FILM	31
			1		1006750-24	RESISTOR, FIXED FILM	30
			1		1006750-45	RESISTOR, FIXED FILM	29
			1		1006750-1[illegible]	RESISTOR, FIXED FILM	28
			1		1006750-46	RESISTOR, FIXED FILM	27
			2		1006750-36	RESISTOR, FIXED FILM	26
			1		1006750-48	RESISTOR, FIXED FILM	25
			3		1006750-60	RESISTOR, FIXED FILM	24
			2		1006750-66	RESISTOR, FIXED FILM	23
			4		1006750-56	RESISTOR, FIXED FILM	22
			2		1006750-52	RESISTOR, FIXED FILM	21
			2		1006750-49	RESISTOR, FIXED FILM	20
			2		1006750-39	RESISTOR, FIXED FILM	19
			2		1006750-54	RESISTOR, FIXED FILM	18
			2		1006750-55	RESISTOR, FIXED FILM	17
			2		1006750-65	RESISTOR, FIXED FILM	16
			4		1006750-80	RESISTOR, FIXED FILM	15
			4		1006750-53	RESISTOR, FIXED FILM	14
			3		1006750-31	RESISTOR, FIXED FILM	13
			2		1006750-41	RESISTOR, FIXED FILM	12
			2		1006750-25	RESISTOR, FIXED FILM	11
			2		1006750-43	RESISTOR, FIXED FILM	10
			1		1010377-51	RESISTOR, FIXED WW	9
			1		1010377-106	RESISTOR, FIXED WW	8
			1		1006750-42	RESISTOR, FIXED FILM	7
			2		1010377-105	RESISTOR, FIXED WW	6
			2		1010377-49	RESISTOR, FIXED WW	5
			4		1006750-32	RESISTOR, FIXED FILM	4
			1		1008588	INSULATOR, BOTTOM	3
			1		1008587	INSULATOR, TOP	2
			1		1008036	HEATSINK	1
			011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
QUANTITY REQUIRED					LIST OF MATERIALS		

E

1007519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REF
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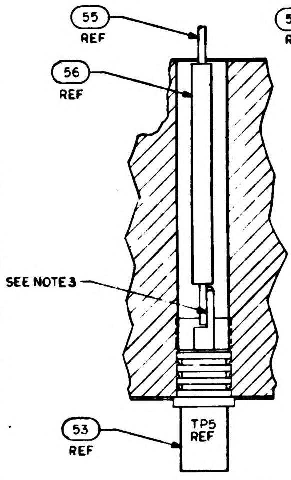
SECTION B-B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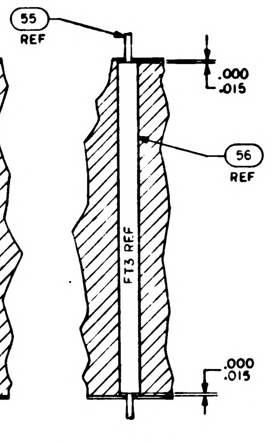
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FT3 REF
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SECTION D-D

TP CHART

TP	COMPONENT
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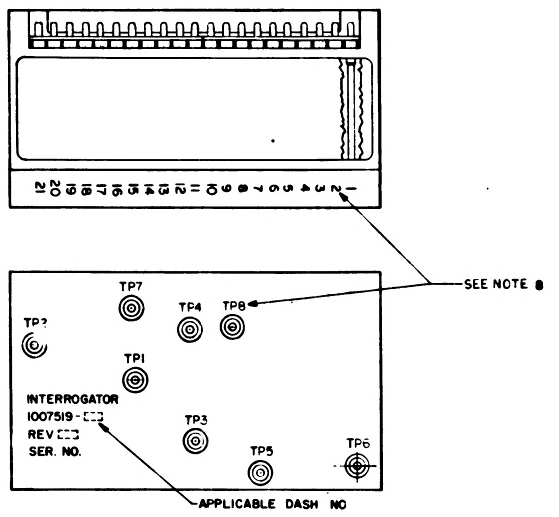
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69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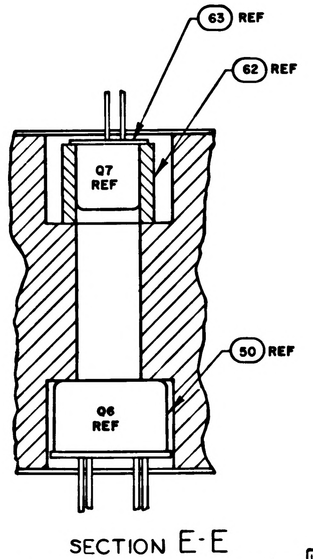
SEE NOTE 8
TP7
TP4
TP8
TP2
TP1
TP3
TP5
TP6
INTERROGATOR
1007519 - [ ]
REV [ ]
SER. NO.
APPLICABLE DASH NO

MARKING VIEW
SCALE 2/1


63 REF
62 REF
Q7
REF
50 REF
Q8
REF

SECTION E-E

[illegible] CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

[illegible] EXCEPT FOR THE HELI-COIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER [illegible]0729-4. CURE AT [illegible]40°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
Contract NAS 9-497
DRAWN Splane DATE 2 OCT 64
CHECKED A. Udovich 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL 12-8-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INTERROGATOR
ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007519
SCALE 5/1
WT
SHEET 1 OF 1

(24)

27 1007519

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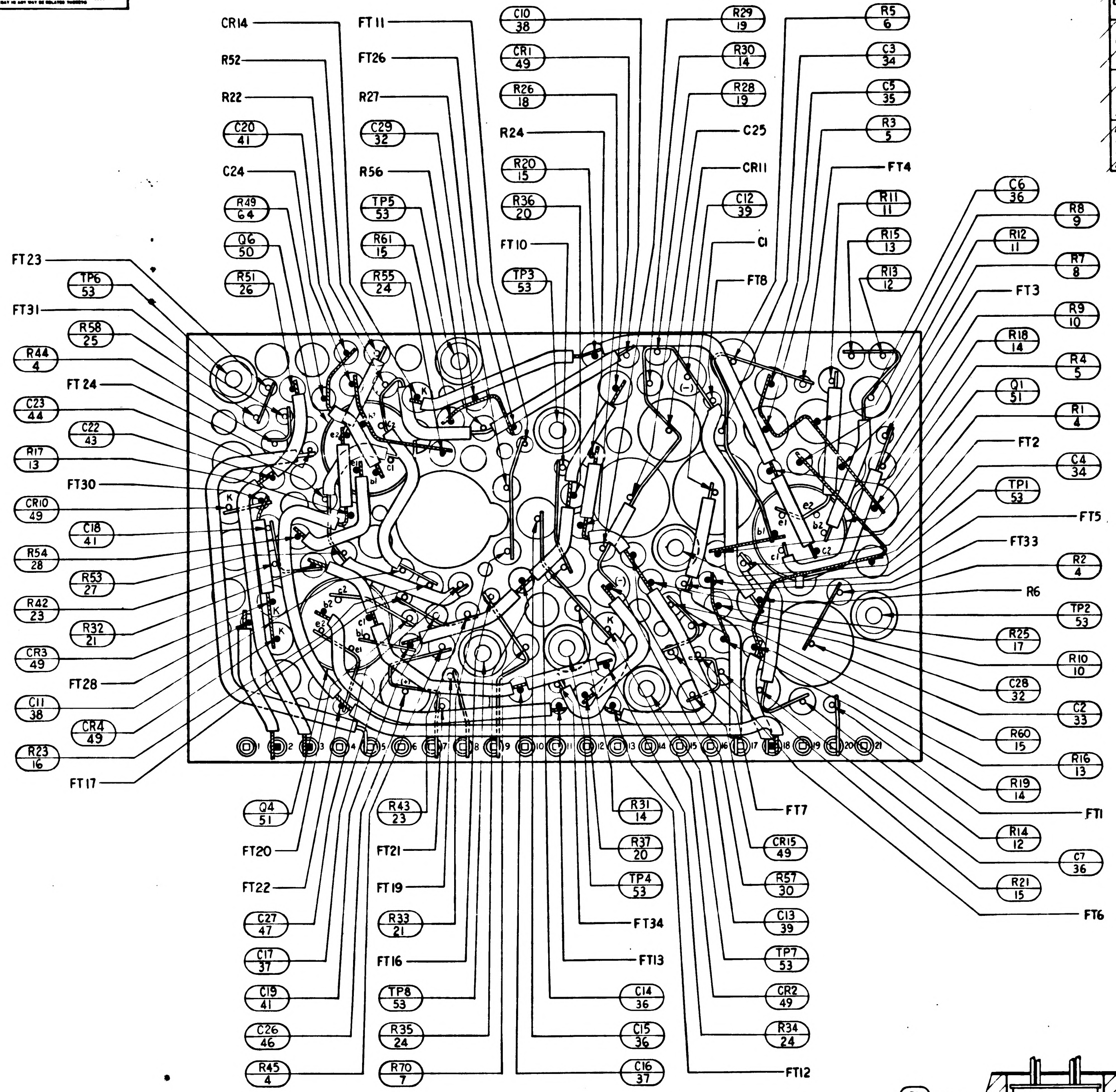
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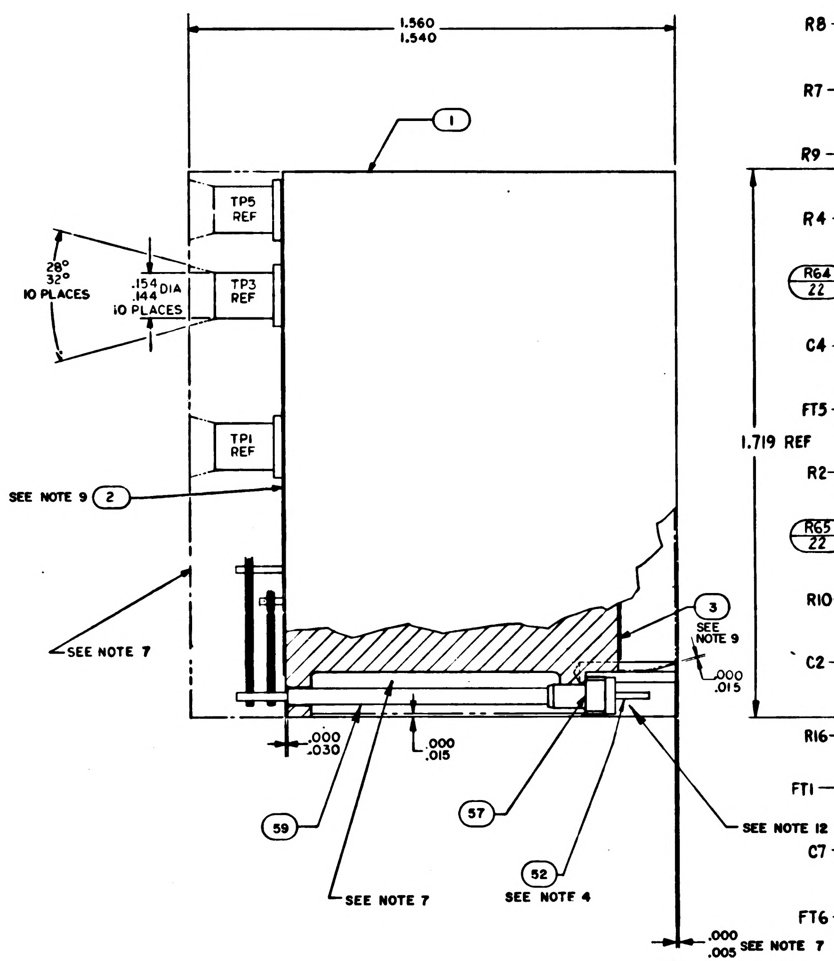
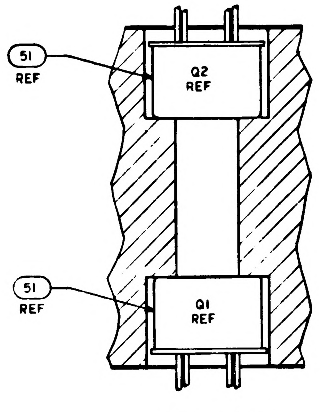
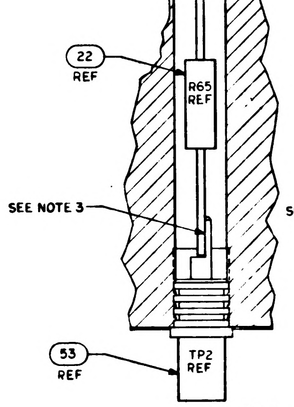
R52
R22
C20 41
C24
R49 64
Q6 50
R51 26
FT11
FT26
R27
C29 32
R56
TP5 53
R61 15
R55 24
C10 38
CR1 49
R26 18
R24
R20 15
R36 20
FT10
TP3 53
R29 19
R30 14
R28 19
C25
CR11
C12 39
C1
FT8
R5 6
C3 34
C5 35
R3 5
FT4
R11 11
R15 13
R13 12
FT23
TP6 53
FT31
R58 25
R44 4
FT24
C23 44
C22 43
R17 13
FT30
CR10 49
C18 41
R54 28
R53 27
R42 23
R32 21
CR3 49
FT28
C11 38
CR4 49
R23 16
FT17
C6 36
R8 9
R12 11
R7 8
FT3
R9 10
R18 14
R4 5
Q1 51
R1 4
FT2
C4 34
TP1 53
FT5
FT33
R2 4
R6
TP2 53
R25 17
R10 10
C28 32
C2 33
R60 15
R16 13
R19 14
FT1
R14 12
C7 36
R21 15
FT6
Q4 51
FT20
FT22
C27 47
C17 37
C19 41
C26 46
R45 4
R43 23
FT21
FT19
R33 21
FT16
TP8 53
R35 24
R70 7
R31 14
R37 20
TP4 53
FT34
FT13
C14 36
C15 36
C16 37
FT7
CR15 49
R57 30
C13 39
TP7 53
CR2 49
R34 24
FT12
K
(+)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

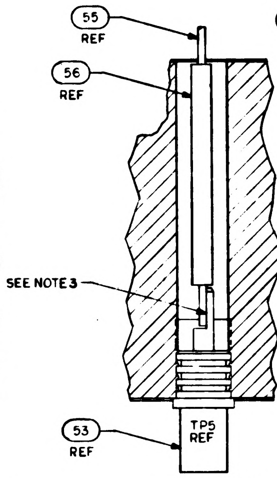
TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXT HEATSINK SURF.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEAT SINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE


1.560
1.540
1
TP5 REF
TP3 REF
TP1 REF
28°
32°
10 PLACES
.154
.144 DIA
10 PLACES
SEE NOTE 9 2
SEE NOTE 7
1.719 REF
3
SEE NOTE 9
.000
.015
.000
.030
.000
.015
59
57
52
SEE NOTE 4
SEE NOTE 12
SEE NOTE 7
.000
.005 SEE NOTE 7


SECTION A-A
51 REF
Q2 REF
51 REF
Q1 REF


SECTION B-B
22 REF
R65 REF
SEE NOTE 3
53 REF
TP2 REF


SECTION C-C
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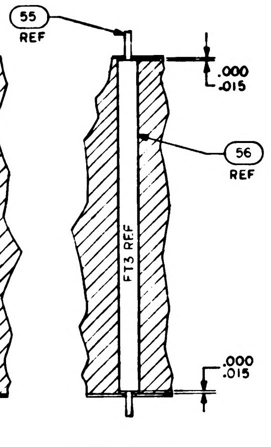
56 REF
SEE NOTE 3
53 REF
TP5 REF


SECTION D-D
55 REF
.000
.015
56 REF
FT3 REF
.000
.015

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. STAKE ALL COMPONENTS AND FIND NO.53 PER ND1002009 METHOD H.
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005
4. MUST MEET REQUIREMENTS OF ND 1002136
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
8. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
9. ON ITEMS 2 AND 3
   BROKEN PATHS INDICATE INSULATION SLEEVING,
   K INDICATES CATHODE SIDE OF DIODE,
   FT() INDICATES FEED THRU
   PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   B INDICATES BASE LEAD OF TRANSISTOR,
   E INDICATES EMITTER LEAD OF TRANSISTOR
   C() INDICATES COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B() INDICATES BASE LEAD OF MULTISTAGE TRANSISTOR
   E() INDICATES EMITTER LEAD OF MULTISTAGE TRANSISTOR
10. PROCURE PER PS 1007019
11. BOND FIND NO. 60 AND FIND NO. 61 TO FIND NO. 57 PER ND 1002237.
12. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069
14. AR DENOTES AS REQUIRED

~~15. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~

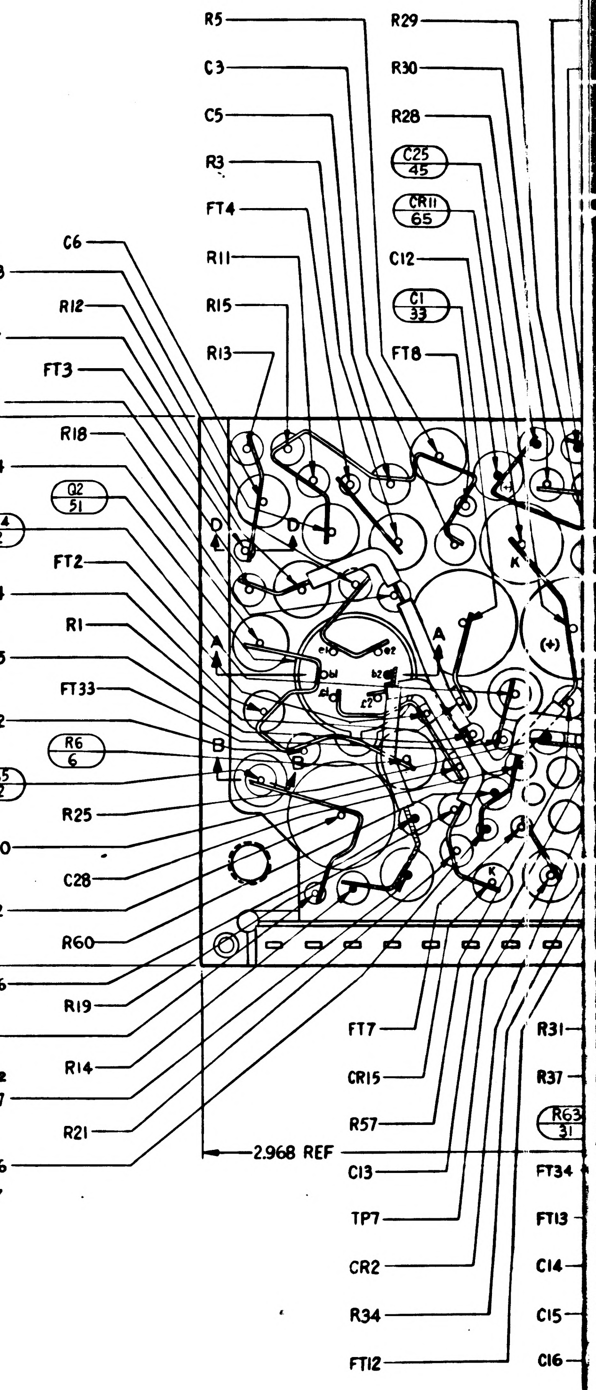
~~16. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~

17. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

18. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

TP CHART

TP	COMPONENT
1	R64
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69


R5
C3
C5
R3
FT4
R11
R15
R13
R29
R30
R28
C25 45
CR11 65
C12
C1 33
FT8
C6
R8
R12
R7
FT3
R9
R18
R4
Q2 51
R64 22
FT2
C4
R1
FT5
FT33
R2
R6 6
R65 22
R25
R10
C28
C2
R60
R16
R19
FT1
R14
C7
R21
FT6
FT7
CR15
R57
C13
TP7
CR2
R34
FT12
R31
R37
R63 31
FT34
FT13
C14
C15
C16
2.968 REF
K
A
B
D
(+)

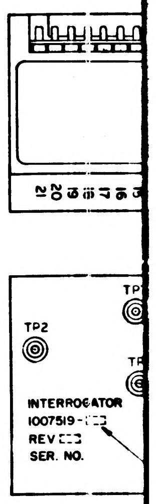
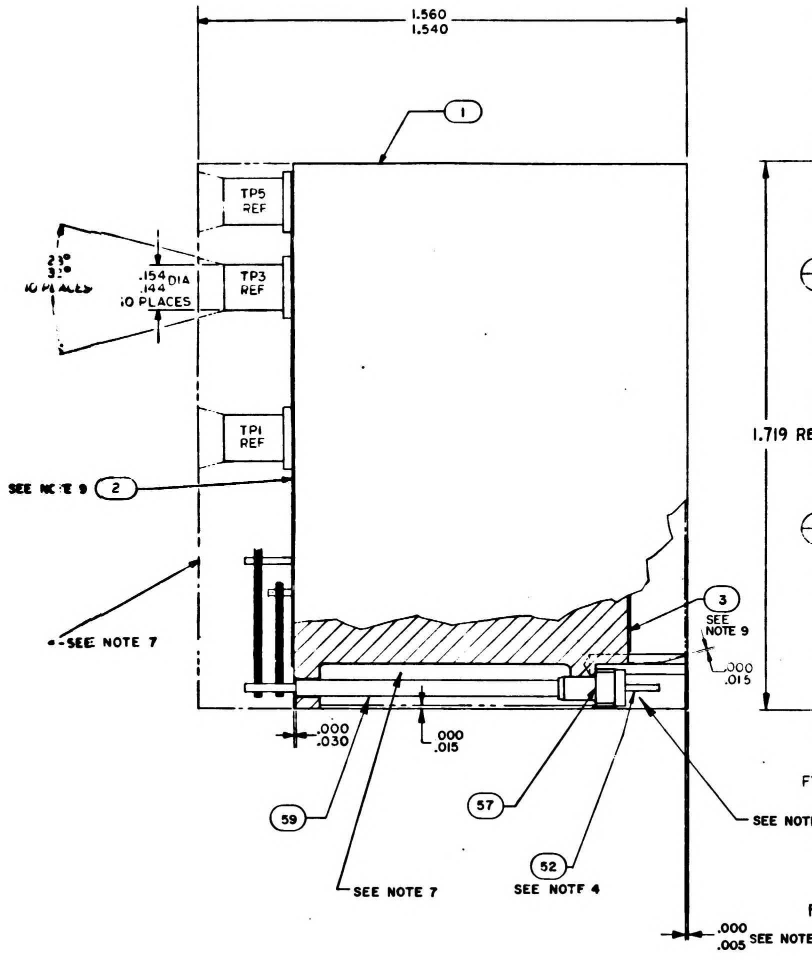

TP2
INTERROGATOR
1007519-
REV
SER. NO.

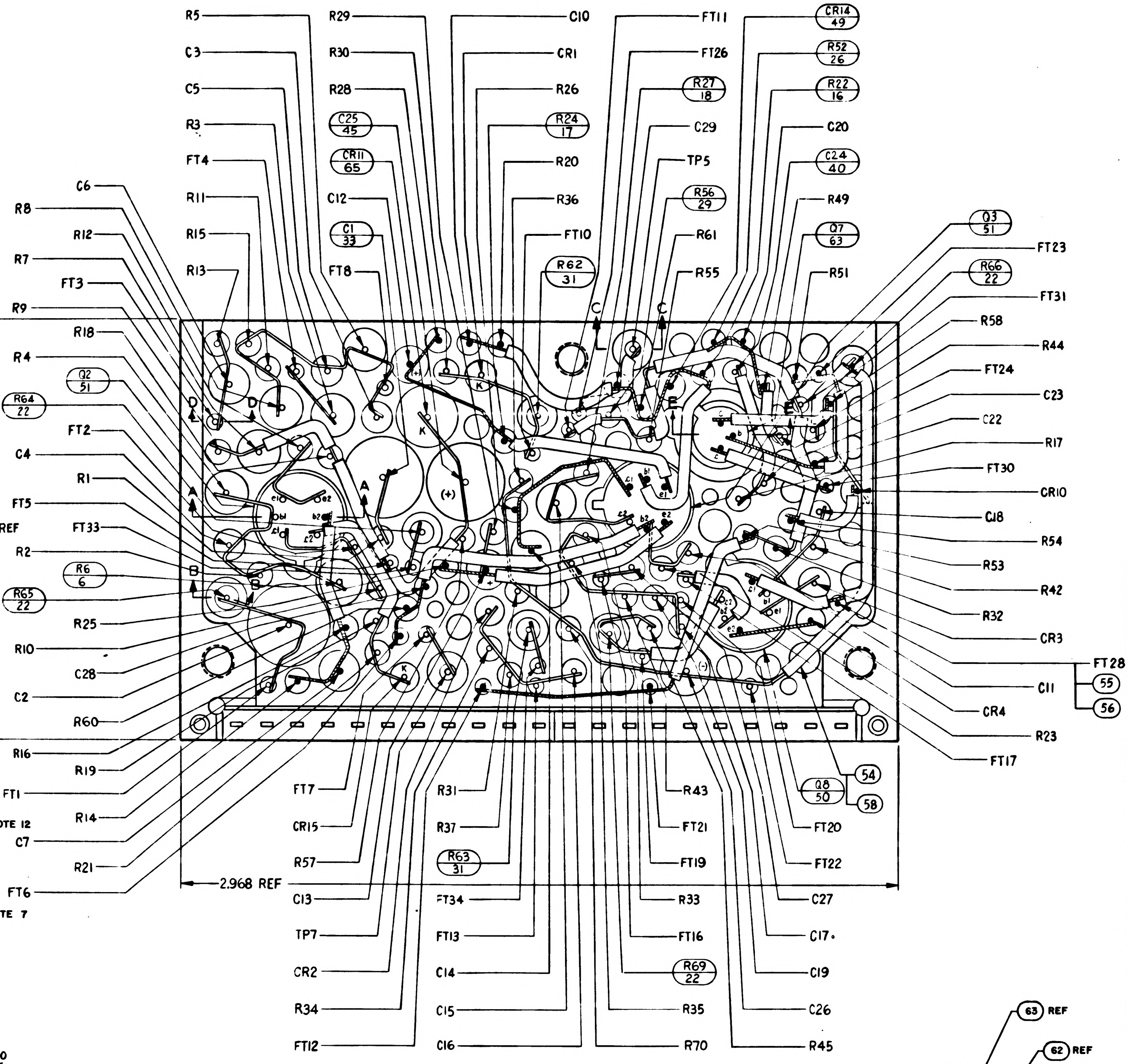
TABLE I

[illegible]IGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
[illegible] AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXT HEATSINK SURF.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
[illegible]	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
[illegible]	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE

REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
A	—	REVISED PER TDRR 16636		[illegible]	
B	—	REVISED PER TDRR 17322		15 MAR 65	GM
C	—	REVISED PER TDRR 17900		[illegible]	
D	—	REVISED PER TDRR-19450	—	2-JUN-65	[illegible]
E	—	REVISED PER TDRR 19502		[illegible] 65	[illegible]
F		REVISED PER TDRR 20143		[illegible] 65	[illegible]


1.560
1.540
1
TP5 REF
TP3 REF
TP1 REF
23°
3°
10 PLACES
.154 DIA
.144
10 PLACES
SEE NOTE 9
2
SEE NOTE 7
3
SEE NOTE 9
.000
.015
.000
.030
.000
.015
59
57
SEE NOTE 12
52
SEE NOTE 4
SEE NOTE 7
.000
.005
SEE NOTE 7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C3
C5
R3
FT4
R11
R15
R13
R29
R30
R28
C25 45
CR11 65
C12
C1 33
FT8
C10
CR1
R26
R24 17
R20
R36
FT10
R62 31
FT11
FT26
R27 18
C29
TP5
R56 29
R61
R55
CR14 49
R52 26
R22 16
C20
C24 40
R49
Q7 63
R51
Q3 51
FT23
R66 22
FT31
R58
R44
FT24
C23
C22
R17
FT30
CR10
C18
R54
R53
R42
R32
CR3
FT28
55
56
C11
CR4
R23
FT17
C6
R8
R12
R7
FT3
R9
R18
R4
Q2 51
R64 22
FT2
C4
R1
FT5
FT33
R2
R6 6
R65 22
R25
R10
C28
C2
R60
R16
R19
FT1
R14
C7
R21
FT6
1.719 REF
2.968 REF
FT7
CR15
R57
C13
TP7
CR2
R34
FT12
R31
R37
R63 31
FT34
FT13
C14
C15
C16
R43
FT21
FT19
R33
FT16
R69 22
R35
R70
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54
58
FT20
FT22
C27
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C19
C26
R45
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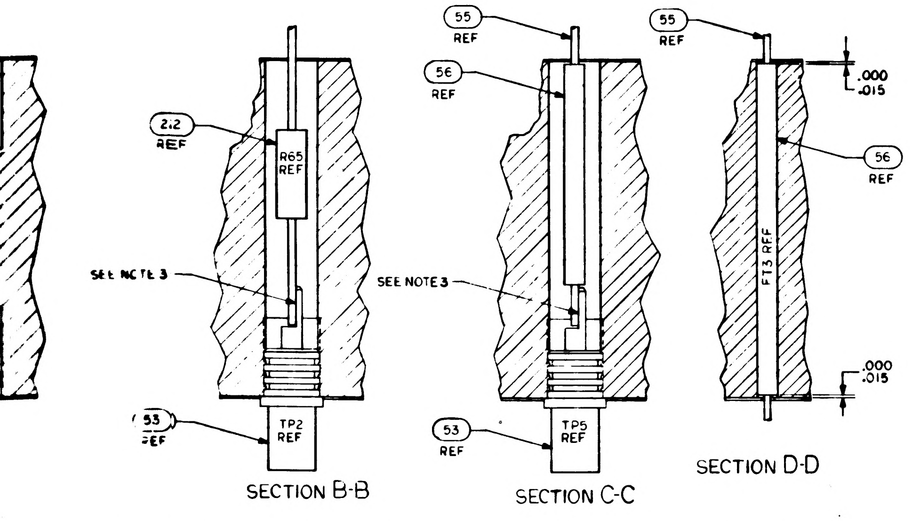
B
C
D
E
K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53 REF
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55 REF
56 REF
SEE NOTE 3
53 REF
TP5 REF
SECTION C-C
55 REF
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.015
56 REF
FT13 REF
.000
.015
SECTION D-D

TP CHART	
TP	COMPONENT
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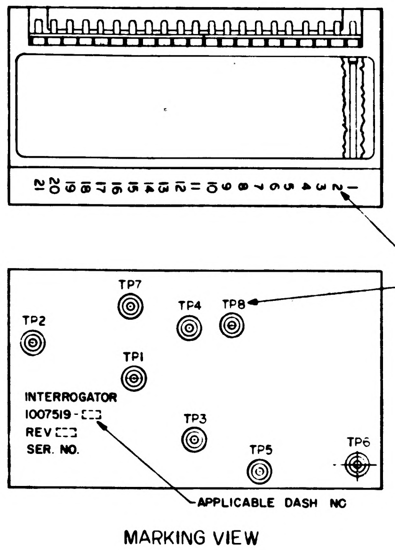
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69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TP4
TP8
TP2
TP1
INTERROGATOR
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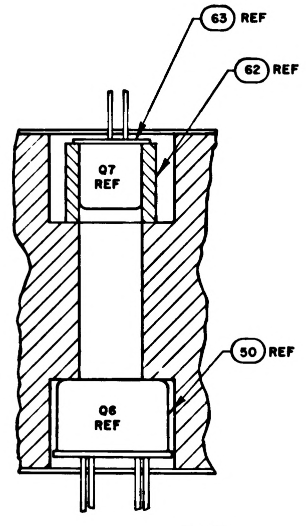
REV [illegible]
SER. NO.
TP3
TP5
TP6
APPLICABLE DASH NO

MARKING VIEW
SCALE 2/1


63 REF
62 REF
Q7 REF
50 REF
Q6 REF

SECTION E-E

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			X		1009522	SCHEMATIC	REF
			1		1006750-51	RESISTOR, FIXED FILM	64
			1		1010675-001	TRANSISTOR	63
			1		1008025-1	INSULATOR BUSHING	62
			1		10[illegible]40 0	GASKET, CONNECTOR MINIATURE	61
			1		1008540-11	GASKET, CONNECTOR MINIATURE	60
			AR		1006776-20	INSULATION SLEEVING	59
			AR		1006776-21	INSULATION SLEEVING	58
			21		1006775	INSULATOR, WRAPOST-MALE, MINAT	57
			AR		1006776-22	INSULATION SLEEVING	56
			AR		1006757-8	WIRE ELEC .020 DIA	55
			AR		1006757-1	WIRE ELEC .010 ± .020	54
			8		1010292-2	TERMINAL FEED THRU INSULATED	53
			21		1006782-4	CONTACT, WRAPOST-MALE, MINAT	52
			4		1010376-1	TRANSISTOR	51
			2		1010395	TRANSISTOR	50
			7		1010385	DIODE	49
			~~1~~		~~1010286-9~~	~~DIODE~~	48
			1		1006777-19	CAPACITOR, CER	47
			1		1006755-79	CAPACITOR, TANT	46
			1		1006755-83	CAPACITOR, TANT	45
			1		1006777-8	CAPACITOR, CER	44
			1		1006777-13	CAPACITOR, CER	43
							42
			3		1006777-12	CAPACITOR, CER	41
			[illegible]		1006777-24	CAPACITOR, CER	40
			2		1006755-69	CAPACITOR, TANT	39
			2		1006777-5	CAPACITOR, CER	38
			2		1006777-7	CAPACITOR, CER	37
			4		1006777-31	CAPACITOR, CER	36
			1		1006777-28	CAPACITOR, CER	35
			2		1006777-27	CAPACITOR, CER	34
			2		1010264-23	CAPACITOR, MYLAR	33
			2		1006777-3	CAPACITOR, CER	32
			2		1006750-63	RESISTOR, FIXED FILM	31
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			1		1006750-1[illegible]	RESISTOR, FIXED FILM	28
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			1		1006750-48	RESISTOR, FIXED FILM	25
			3		1006750-60	RESISTOR, FIXED FILM	24
			2		1006750-66	RESISTOR, FIXED FILM	23
			4		1006750-56	RESISTOR, FIXED FILM	22
			2		1006750-52	RESISTOR, FIXED FILM	21
			2		1006750-49	RESISTOR, FIXED FILM	20
			2		1006750-39	RESISTOR, FIXED FILM	19
			2		1006750-54	RESISTOR, FIXED FILM	18
			2		1006750-55	RESISTOR, FIXED FILM	17
			2		1006750-65	RESISTOR, FIXED FILM	16
			4		1006750-80	RESISTOR, FIXED FILM	15
			4		1006750-53	RESISTOR, FIXED FILM	14
			3		1006750-31	RESISTOR, FIXED FILM	13
			2		1006750-41	RESISTOR, FIXED FILM	12
			2		1006750-25	RESISTOR, FIXED FILM	11
			2		1006750-43	RESISTOR, FIXED FILM	10
			1		1010377-51	RESISTOR, FIXED WW	9
			1		1010377-106	RESISTOR, FIXED WW	8
			1		1006750-42	RESISTOR, FIXED FILM	7
			2		1010377-105	RESISTOR, FIXED WW	6
			2		1010377-49	RESISTOR, FIXED WW	5
			4		1006750-32	RESISTOR, FIXED FILM	4
			1		1008588	INSULATOR, BOTTOM	3
			1		1008587	INSULATOR, TOP	2
			1		1008036	HEATSINK	1
			011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
QUANTITY REQUIRED					LIST OF MATERIALS		

1007519

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN Splane DATE 2 OCT 64
CHECKED U. Udovich 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL 12-8-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INTERROGATOR
ASSEMBLY

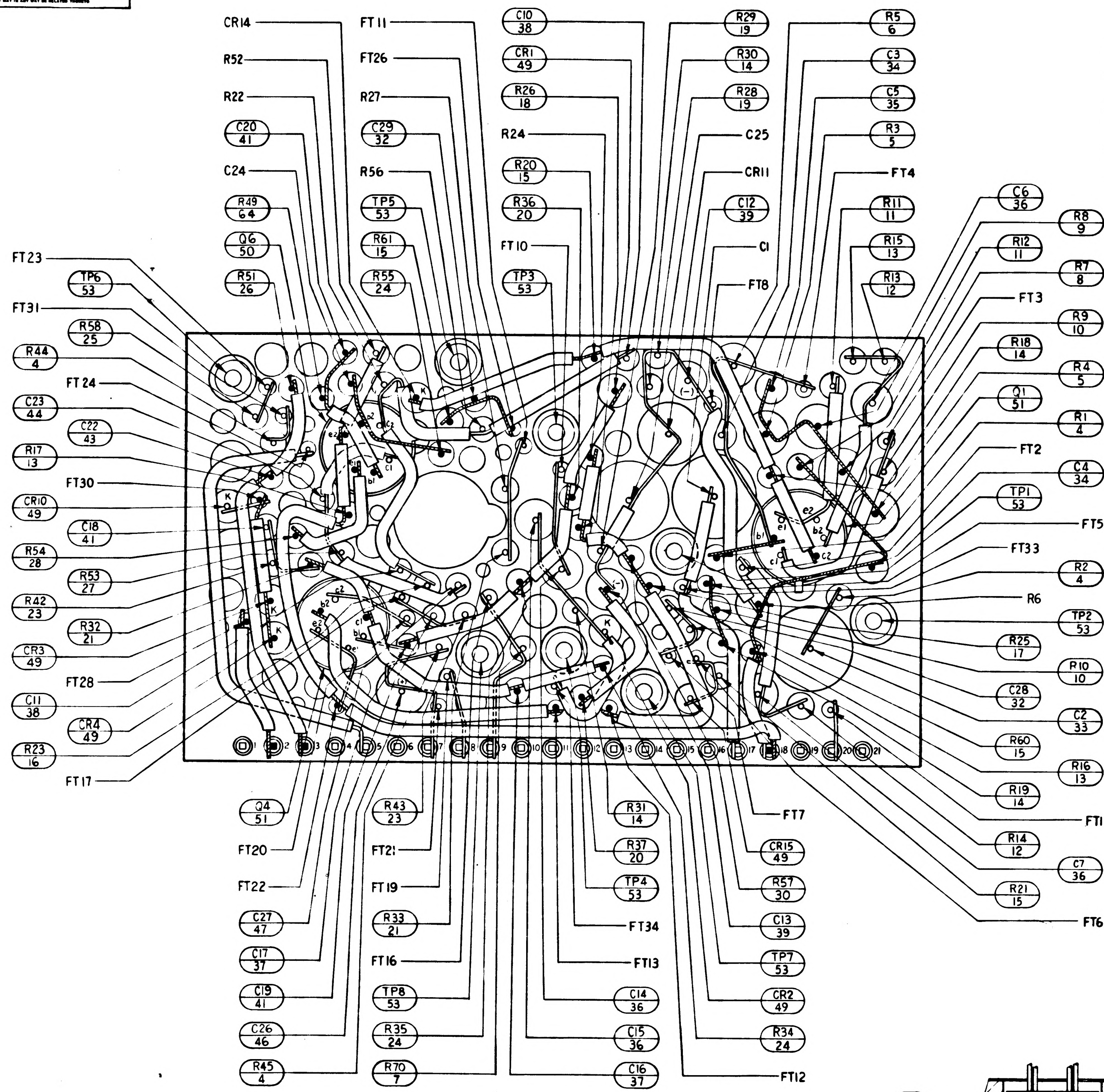
CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007519
SCALE 5/1
WT
SHEET 1 OF 1

[illegible] CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

[illegible] EXCEPT FOR THE [illegible] MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, [illegible] PER [illegible]0729-4. CURE AT 40°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

2/1007519

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.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FT11
C10 38
R29 19
R5 6
R52
FT26
CR1 49
R30 14
C3 34
R22
R27
R26 18
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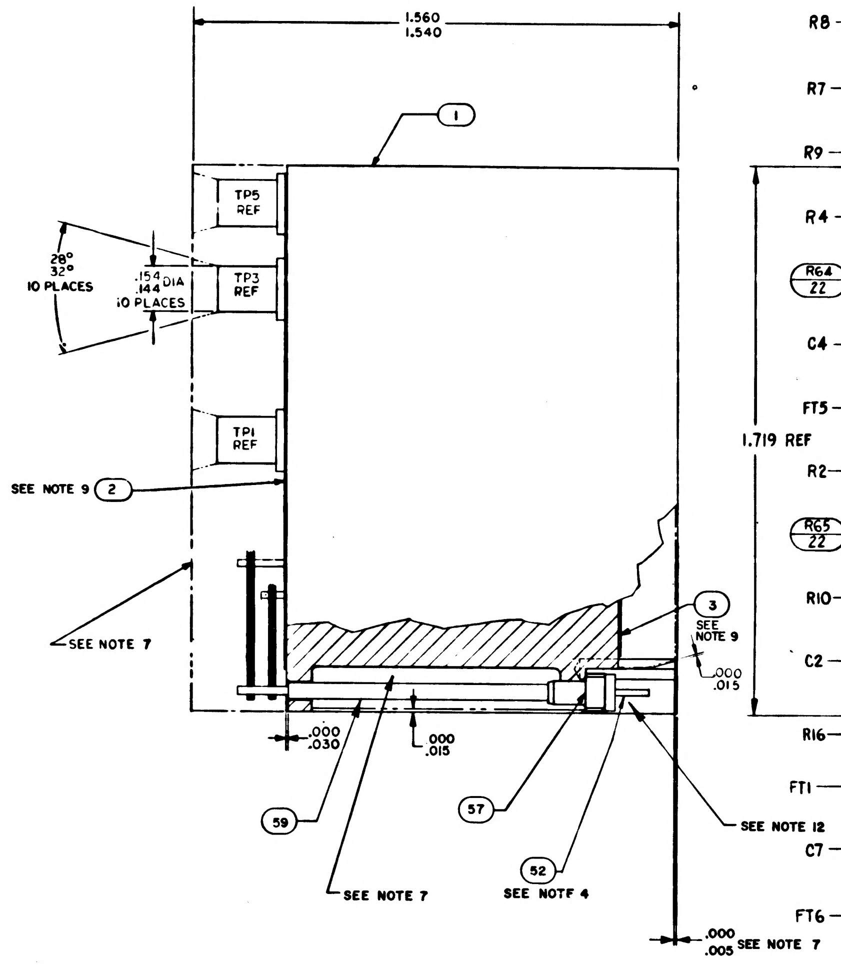
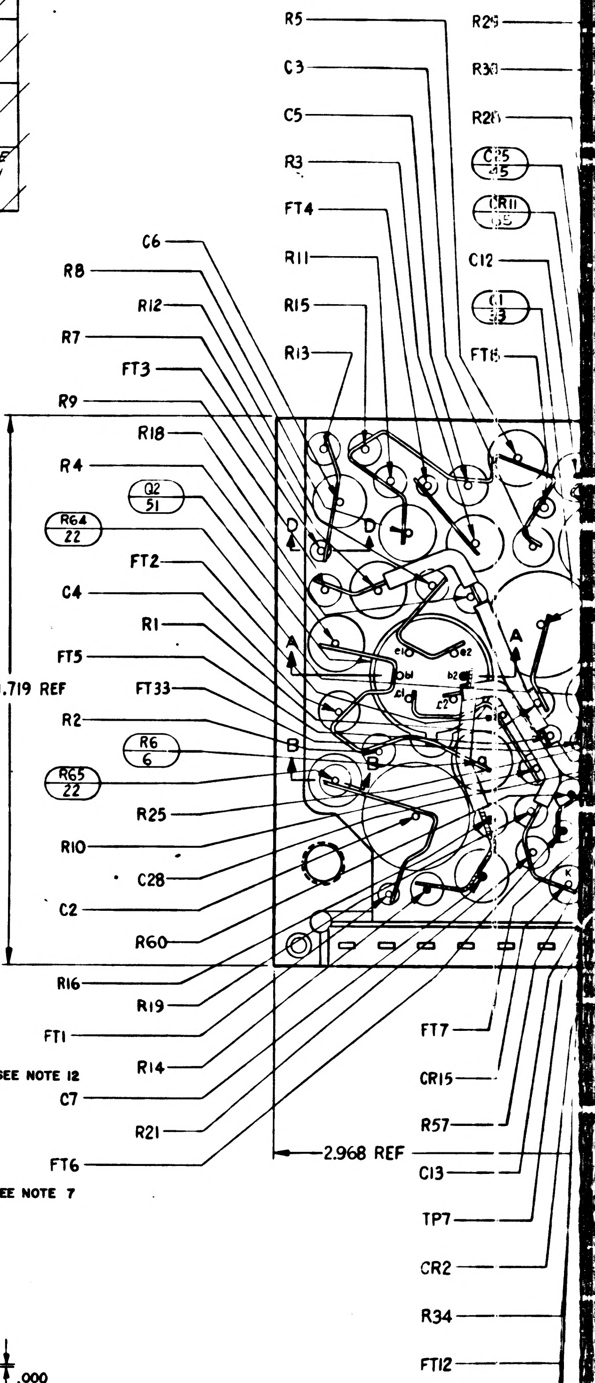
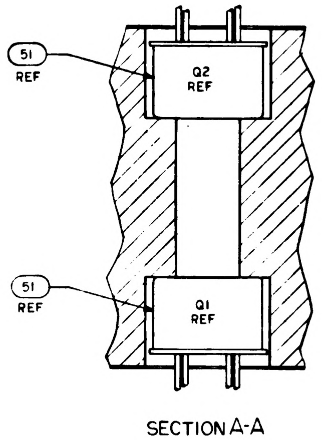
C5 35
C20 41
C29 32
R24
C25
R3 5
C24
R56
R20 15
CR11
FT4
R49 64
TP5 53
R36 20
C12 39
R11 11
C6 36
Q6 50
R61 15
FT10
C1
R15 13
R8 9
FT23
TP6 53
R51 26
R55 24
TP3 53
FT8
R13 12
R12 11
R7 8
FT31
R58 25
FT3
R44 4
R9 10
FT24
R18 14
C23 44
R4 5
C22 43
Q1 51
R17 13
R1 4
FT2
FT30
C4 34
CR10 49
TP1 53
C18 41
FT5
R54 28
FT33
R53 27
R2 4
R42 23
R6
R32 21
TP2 53
CR3 49
R25 17
FT28
R10 10
C11 38
C28 32
CR4 49
C2 33
R23 16
R60 15
FT17
R16 13
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
Q4 51
R43 23
R31 14
FT7
R19 14
FT20
FT21
R37 20
CR15 49
FT1
R14 12
FT22
FT19
TP4 53
R57 30
C7 36
C27 47
R33 21
FT34
C13 39
R21 15
FT6
C17 37
FT16
FT13
TP7 53
C19 41
TP8 53
C14 36
CR2 49
C26 46
R35 24
C15 36
R34 24
R45 4
R70 7
C16 37
FT12

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXT HEATSINK SURF.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEAT SINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE


1.560
1.540
1
TP5 REF
TP3 REF
TP1 REF
28°
32°
10 PLACES
.154
.144 DIA
10 PLACES
SEE NOTE 9
2
SEE NOTE 7
3
SEE NOTE 9
.000
.015
.000
.030
.000
.015
59
57
52
SEE NOTE 4
SEE NOTE 12
SEE NOTE 7
1.719 REF
.000
.005 SEE NOTE 7


R5
R29
C3
R30
C5
R26
R3
C25 45
FT4
CR11 45
R11
C12
C6
R15
C1 33
R8
R12
R13
FT8
R7
FT3
R9
R18
R4
Q2 51
R64 22
FT2
C4
R1
FT5
FT33
R2
R6 6
R65 22
R25
R10
C28
C2
R60
R16
R19
FT1
R14
C7
R21
FT6
FT7
CR15
R57
2.968 REF
C13
TP7
CR2
R34
FT12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REF
Q2
REF
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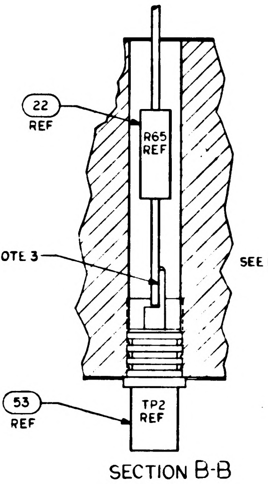
REF
Q1
REF

SECTION A-A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REF
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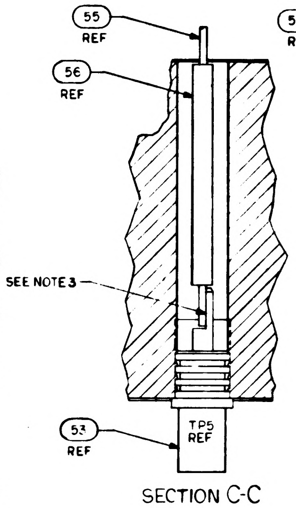
53
REF
TP2
REF

SECTION B-B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REF
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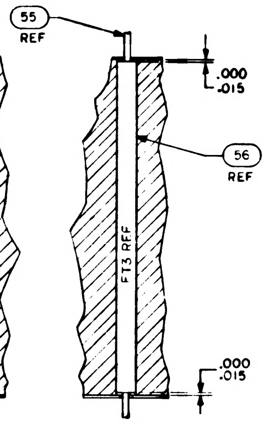
REF
SEE NOTE 3
53
REF
TP5
REF

SECTION C-C


55
REF
.000
.015
56
REF
FT3 REF
.000
.015

SECTION D-D

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. STAKE ALL COMPONENTS AND FIND NO.53 PER ND1002009 METHOD H.
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005
4. MUST MEET REQUIREMENTS OF ND 1002136
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
8. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
9. ON ITEMS 2 AND 3
   BROKEN PATHS INDICATE INSULATION SLEEVING,
   K INDICATES CATHODE SIDE OF DIODE,
   FT() INDICATES FEED THRU
   PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   B INDICATES BASE LEAD OF TRANSISTOR,
   E INDICATES EMITTER LEAD OF TRANSISTOR
   C() INDICATES COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B() INDICATES BASE LEAD OF MULTISTAGE TRANSISTOR
   E() INDICATES EMITTER LEAD OF MULTISTAGE TRANSISTOR
10. PROCURE PER PS 1007019
11. ~~BOND FIND NO. 60 AND FIND NO. 61 TO FIND NO. 57 PER ND 1002237.~~
12. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069
14. AR DENOTES AS REQUIRED
15. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
16. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.
17. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
18. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

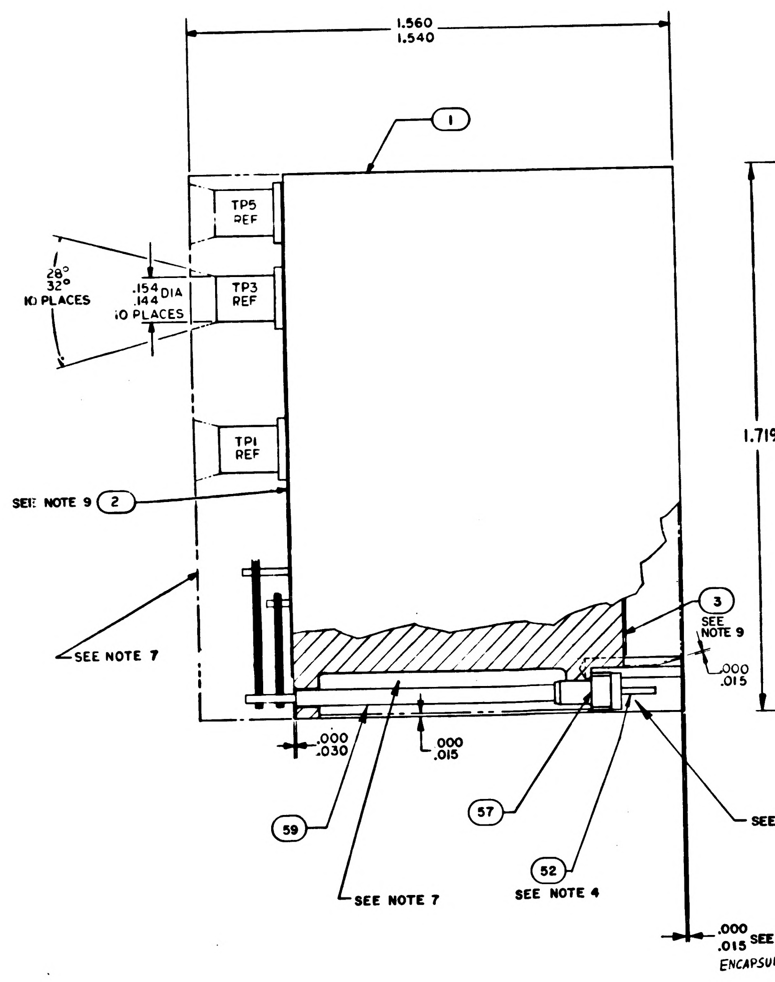
TP CHART

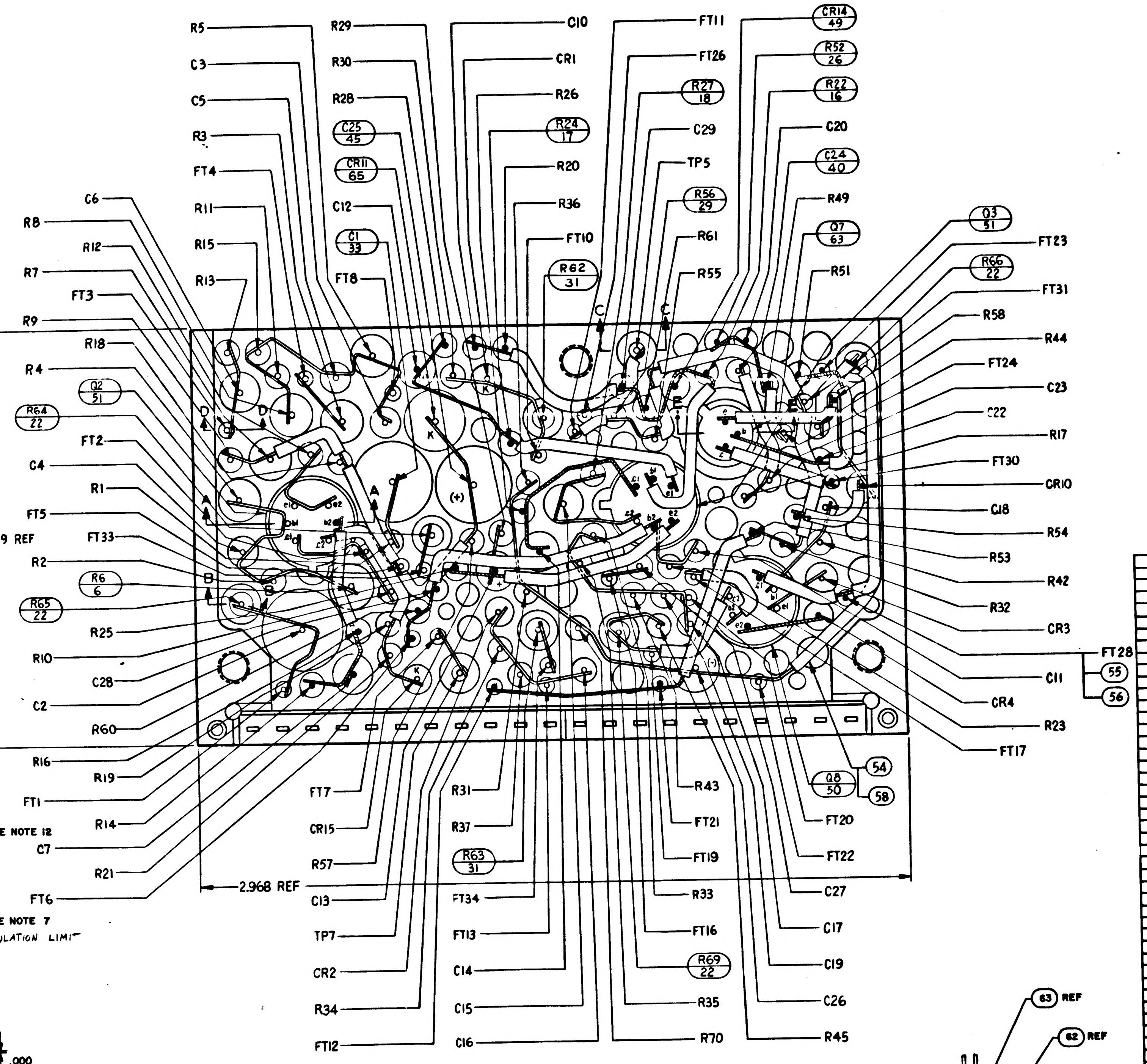
TP	COMPONENT
1	R64
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69

TABLE I

[illegible] AT ON	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
[illegible] AND FLAT [illegible]	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXT HEATSINK SURF.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
[illegible] SURFACE	CONCAVE FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
[illegible] FOAM [illegible]	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
A	—	REVISED PER TDRR 16636		2-FEB-65	
B	—	REVISED PER TDRR 17322		15-MAR 65	
C	—	REVISED PER TDRR 17966		6-APR	
D	—	REVISED PER TDRR-19450	—	2-JUN-65	B
E	—	REVISED PER TDRR 19502		9 JUN 65	
F		REVISED PER TDRR 20143		9 JUN 65	
G		REVISED PER TDRR 22969		12 OCT 65	


1.560
1.540
1
TP5 REF
TP3 REF
TP1 REF
28°
32°
10 PLACES
.154
.144 DIA
10 PLACES
SEE NOTE 9 2
SEE NOTE 7
3
SEE NOTE 9
.000
.015
.000
.030
.000
.015
57
SEE NOTE 12
59
SEE NOTE 7
52
SEE NOTE 4
.000
.015 SEE NOTE 7
ENCAPSULATION LIMIT


R5
C3
C5
R3
FT4
R11
R15
R13
R29
R30
R28
C25 45
CR11 65
C12
C1 33
FT8
C6
R8
R12
R7
FT3
R9
R18
R4
Q2 51
R64 22
FT2
C4
R1
FT5
FT33
R2
R6 6
R65 22
R25
R10
C28
C2
R60
R16
R19
FT1
R14
C7
R21
FT6
C10
CR1
R26
R24 17
R20
R36
FT10
R62 31
FT11
FT26
R27 18
C29
TP5
R56 29
R61
R55
CR14 49
R52 26
R22 16
C20
C24 40
R49
Q7 63
R51
Q3 51
FT23
R66 22
FT31
R58
R44
FT24
C23
C22
R17
FT30
CR10
C18
R54
R53
R42
R32
CR3
FT28
55
56
C11
CR4
R23
FT17
54
Q8 50
58
1.719 REF
2.968 REF
FT7
CR15
R57
C13
TP7
CR2
R34
FT12
R31
R37
R63 31
FT34
FT13
C14
C15
C16
R43
FT21
FT19
R33
FT16
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R35
R70
FT20
FT22
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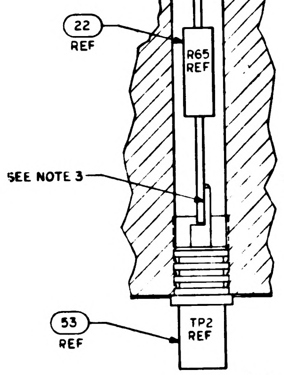
C26
R45
A
B
C
D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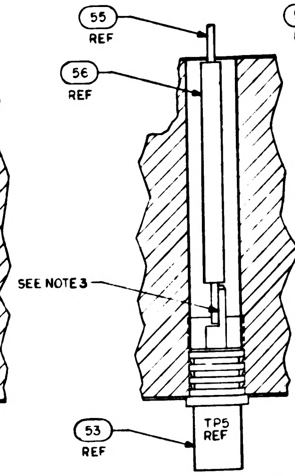
R65 REF
SEE NOTE 3
53 REF
TP2 REF

SECTION B-B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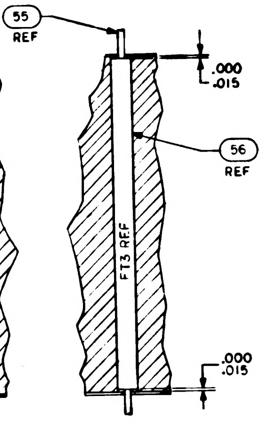
56 REF
SEE NOTE 3
53 REF
TP5 REF

SECTION C-C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56 REF
FT3 REF
.000
.015

SECTION D-D

TP CHART	
TP	COMPONENT
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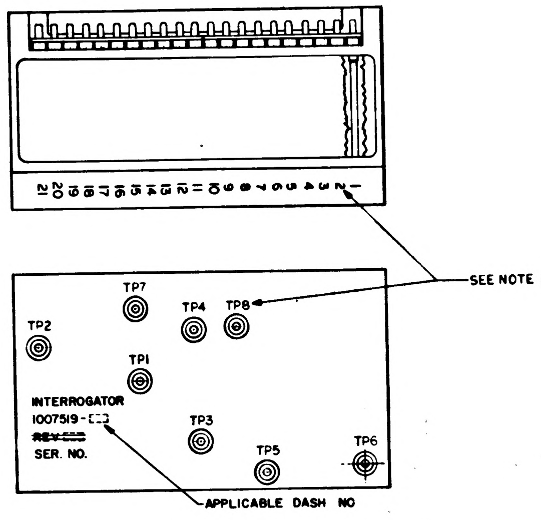
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69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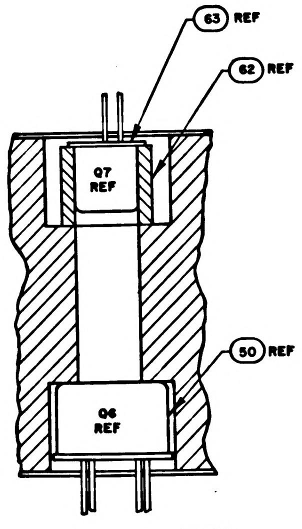
TP4
TP8
TP2
TP1
INTERROGATOR
1007519-
~~REV~~
SER. NO.
TP3
TP5
TP6
APPLICABLE DASH NO

MARKING VIEW
SCALE 2/1


63 REF
62 REF
Q7 REF
50 REF
Q6 REF

SECTION E-E

[illegible] CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

~~[illegible] THE [illegible] MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, [illegible] PAINT PER [illegible], CURE AT 160°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS [illegible] PAINT.~~

[illegible] MODULE MOUNTING SURFACE. PAINT ALL SURFACES PER ND 1002279, USING 1010992 PRIMER AND [illegible] PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

QUANTITY REQUIRED					EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
				011				
				1		1010830-9	ZENER DIODE	65
				X		1009522	SCHEMATIC	REF
				1		1006750-81	RESISTOR, FIXED FILM	64
				1		1010675-001	TRANSISTOR	63
				1		1008025-1	INSULATOR BUSHING	62
				1		1008540-9	GASKET, CONNECTOR MINIATURE	61
				1		1008540-11	GASKET, CONNECTOR MINIATURE	60
				AR		1006776-20	INSULATION SLEEVING	59
				AR		1006776-21	INSULATION SLEEVING	58
				21		1006775	INSULATOR, WRAPOST-MALE, MINAT	57
				AR		1006776-22	INSULATION SLEEVING	56
				AR		1006757-8	WIRE ELEC .020 DIA	55
				AR		1006757-1	WIRE ELEC .010 ± .020	54
				8		1010292-2	TERMINAL FEED THRU INSULATED	53
				21		1006782-4	CONTACT, WRAPOST-MALE, MINAT	52
				4		1010376-1	TRANSISTOR	51
				2		1010395	TRANSISTOR	50
				7		1010385	DIODE	49
				~~1~~		~~1010206-9~~	~~DIODE~~	48
				1		1006777-19	CAPACITOR, CER	47
				1		1006755-79	CAPACITOR, TANT	46
				1		1006755-83	CAPACITOR, TANT	45
				1		1006777-8	CAPACITOR, CER	44
				1		1006777-13	CAPACITOR, CER	43
								42
				3		1006777-12	CAPACITOR, CER	41
				1		1006777-24	CAPACITOR, CER	40
				2		1006755-69	CAPACITOR, TANT	39
				2		1006777-5	CAPACITOR, CER	38
				2		1006777-7	CAPACITOR, CER	37
				4		1006777-31	CAPACITOR, CER	36
				1		1006777-28	CAPACITOR, CER	35
				2		1006777-27	CAPACITOR, CER	34
				2		1010264-23	CAPACITOR, MYLAR	33
				2		1006777-3	CAPACITOR, CER	32
				2		1006750-63	RESISTOR, FIXED FILM	31
				1		1006750-24	RESISTOR, FIXED FILM	30
				1		1006750-45	RESISTOR, FIXED FILM	29
				1		1006750-1[illegible]	RESISTOR, FIXED FILM	28
				1		1006750-46	RESISTOR, FIXED FILM	27
				2		1006750-36	RESISTOR, FIXED FILM	26
				1		1006750-48	RESISTOR, FIXED FILM	25
				3		1006750-60	RESISTOR, FIXED FILM	24
				2		1006750-66	RESISTOR, FIXED FILM	23
				4		1006750-56	RESISTOR, FIXED FILM	22
				2		1006750-52	RESISTOR, FIXED FILM	21
				2		1006750-49	RESISTOR, FIXED FILM	20
				2		1006750-39	RESISTOR, FIXED FILM	19
				2		1006750-54	RESISTOR, FIXED FILM	18
				2		1006750-55	RESISTOR, FIXED FILM	17
				2		1006750-65	RESISTOR, FIXED FILM	16
				4		1006750-80	RESISTOR, FIXED FILM	15
				4		1006750-53	RESISTOR, FIXED FILM	14
				3		1006750-31	RESISTOR, FIXED FILM	13
				2		1006750-41	RESISTOR, FIXED FILM	12
				2		1006750-25	RESISTOR, FIXED FILM	11
				2		1006750-43	RESISTOR, FIXED FILM	10
				1		1010377-51	RESISTOR, FIXED WW	9
				1		1010377-106	RESISTOR, FIXED WW	8
				1		1006750-42	RESISTOR, FIXED FILM	7
				2		1010377-105	RESISTOR, FIXED WW	6
				2		1010377-49	RESISTOR, FIXED WW	5
				4		1006750-32	RESISTOR, FIXED FILM	4
				1		1008588	INSULATOR, BOTTOM	3
				1		1008587	INSULATOR, TOP	2
				1		1008036	HEATSINK	1

LIST OF MATERIALS

1007519 G

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

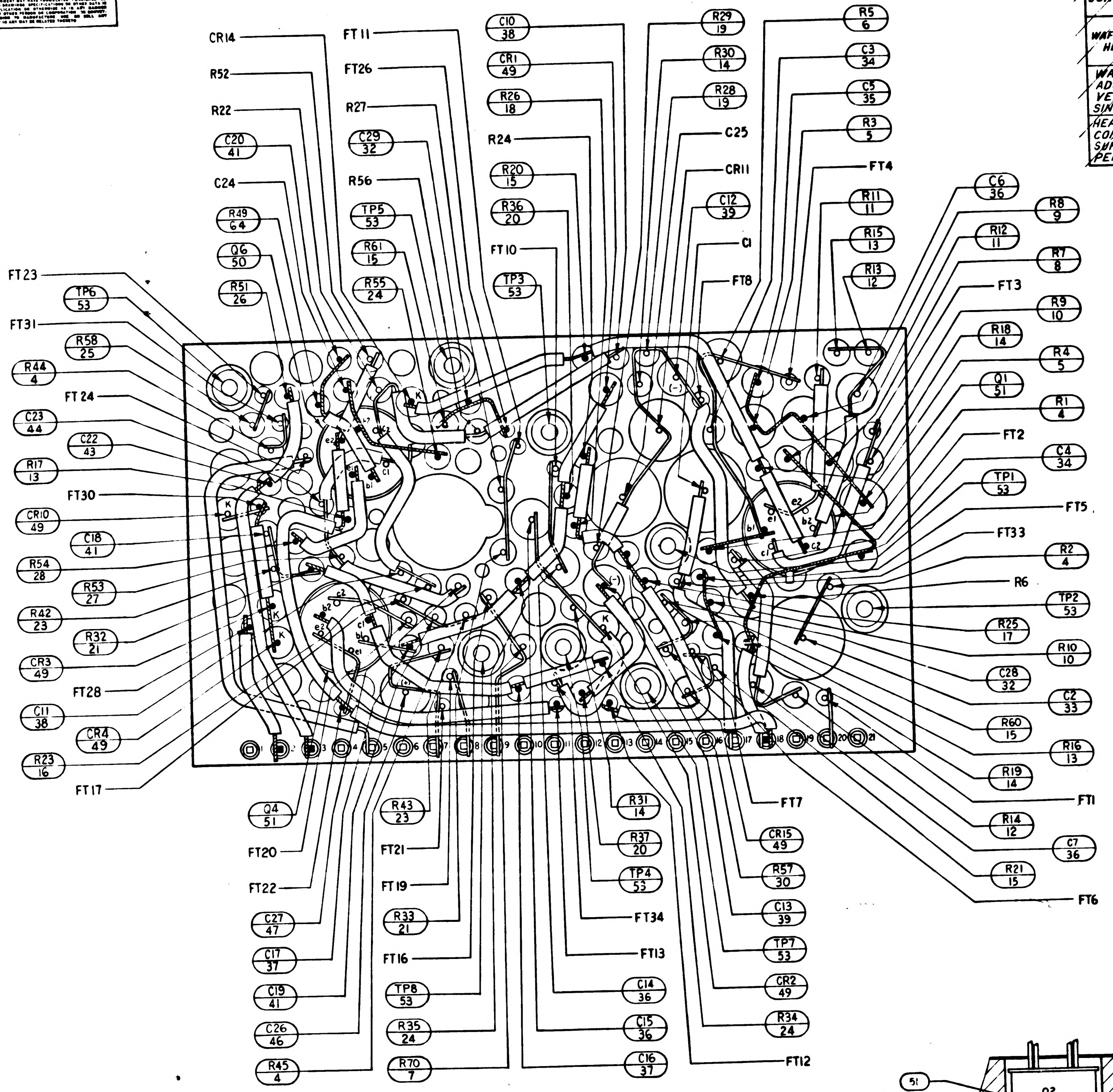
MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
Contract NAS 9-497
DRAWN Splane DATE 2 OCT 64
CHECKED A. Udovich 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL W. J. Rhine 12-8-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INTERROGATOR
ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007519
SCALE 5/1
WT
SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO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R29 19
R5 6
R52
FT26
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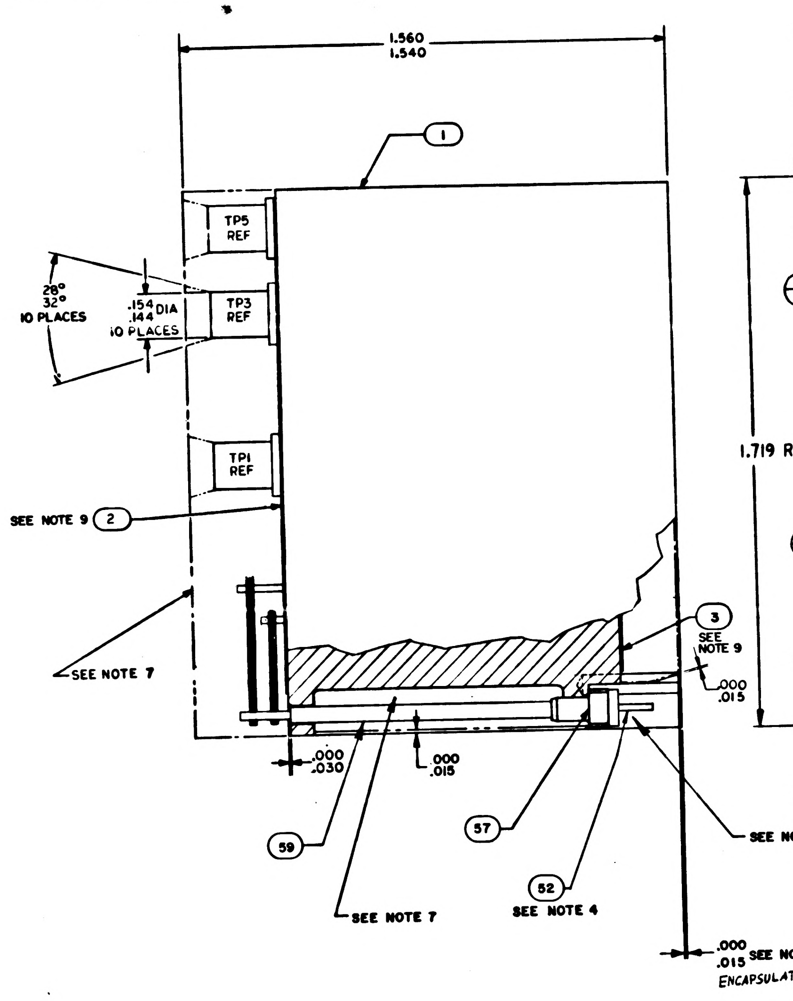
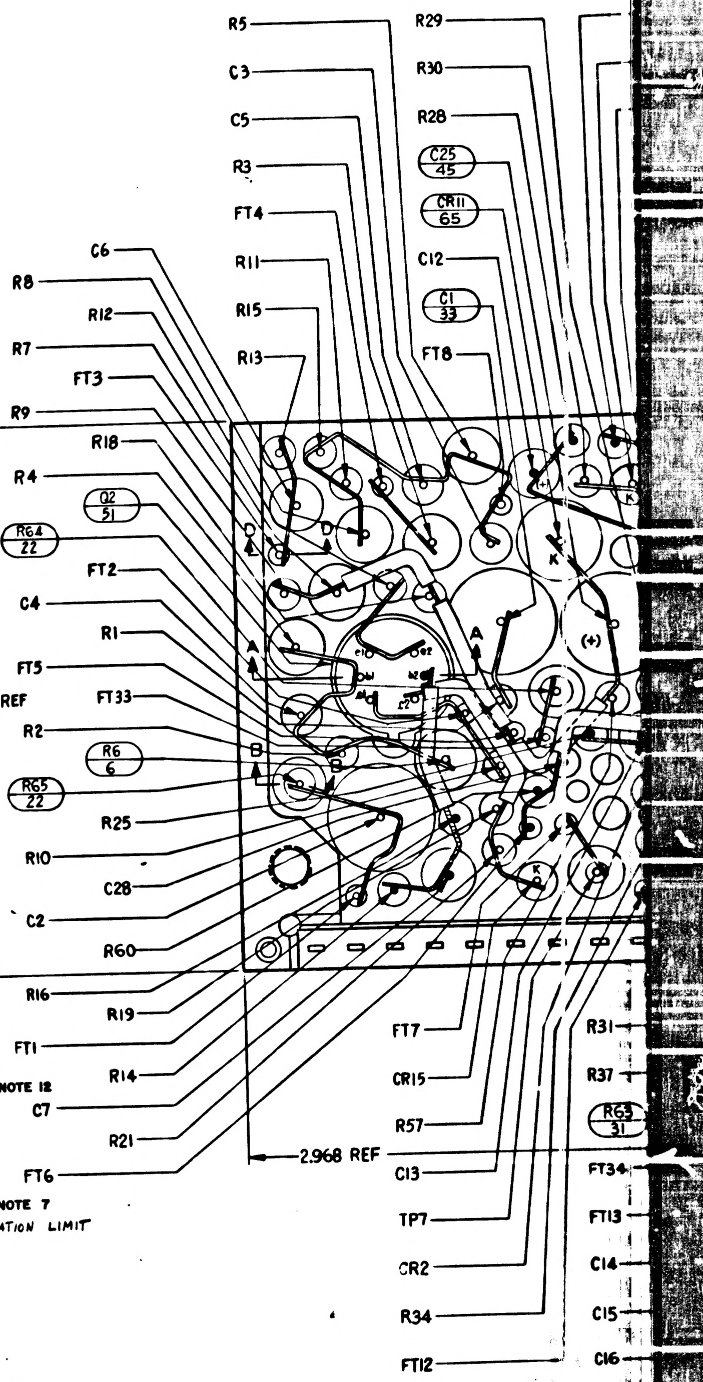
R22
R27
R26 18
R28 19
C5 35
C20 41
C29 32
R24
C25
R3 5
C24
R56
R20 15
CR11
FT4
R49 64
TP5 53
R36 20
C12 39
R11 11
C6 36
R8 9
Q6 50
R61 15
FT10
C1
R15 13
R12 11
R7 8
FT23
R51 26
R55 24
TP3 53
FT8
R13 12
FT3
R9 10
TP6 53
R18 14
R4 5
FT31
R58 25
Q1 51
R1 4
R44 4
FT2
FT24
C4 34
C23 44
C22 43
TP1 53
FT5
R17 13
FT33
FT30
R2 4
CR10 49
C18 41
R6
R54 28
R53 27
TP2 53
R42 23
R25 17
R10 10
CR3 49
R32 21
C28 32
C2 33
FT28
R60 15
C11 38
CR4 49
R16 13
R23 16
R19 14
FT17
FT1
R14 12
Q4 51
R43 23
R31 14
FT7
C7 36
FT20
FT21
R37 20
CR15 49
R21 15
FT6
FT22
FT19
TP4 53
R57 30
C27 47
R33 21
FT34
C13 39
C17 37
FT13
TP7 53
FT16
C14 36
CR2 49
C19 41
TP8 53
R34 24
C26 46
R35 24
C15 36
R45 4
R70 7
C16 37
FT12

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
~~WAFER AND FLAT HEATSINK~~	~~100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXT HEATSINK SURF.~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~WAFER AND ADJACENT VERTICAL HEAT SINK SURFACE~~	~~CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~HEATSINK FOAM CONTACT SURFACE PERIMETER~~	~~N/A~~	~~N/A~~	~~.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE~~


1.560
1.540
1
TP5 REF
TP3 REF
TP1 REF
28°
32°
10 PLACES
.154
.144
DIA
10 PLACES
SEE NOTE 9
2
SEE NOTE 7
3
SEE NOTE 9
.000
.015
.000
.030
.000
.015
59
57
52
SEE NOTE 4
SEE NOTE 12
SEE NOTE 7
.000
.015
SEE NOTE 7
ENCAPSULATION LIMIT
1.719 REF


R5
R29
C3
R30
C5
R28
R3
C25 45
CR11 65
FT4
R11
C12
R15
C1 33
R13
FT8
C6
R8
R12
R7
FT3
R9
R18
R4
Q2 51
R64 22
FT2
C4
R1
FT5
FT33
R2
R6 6
R65 22
R25
R10
C28
C2
R60
R16
R19
FT1
R14
C7
R21
FT6
2.968 REF
FT7
CR15
R57
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TP7
CR2
R34
FT12
R31
R37
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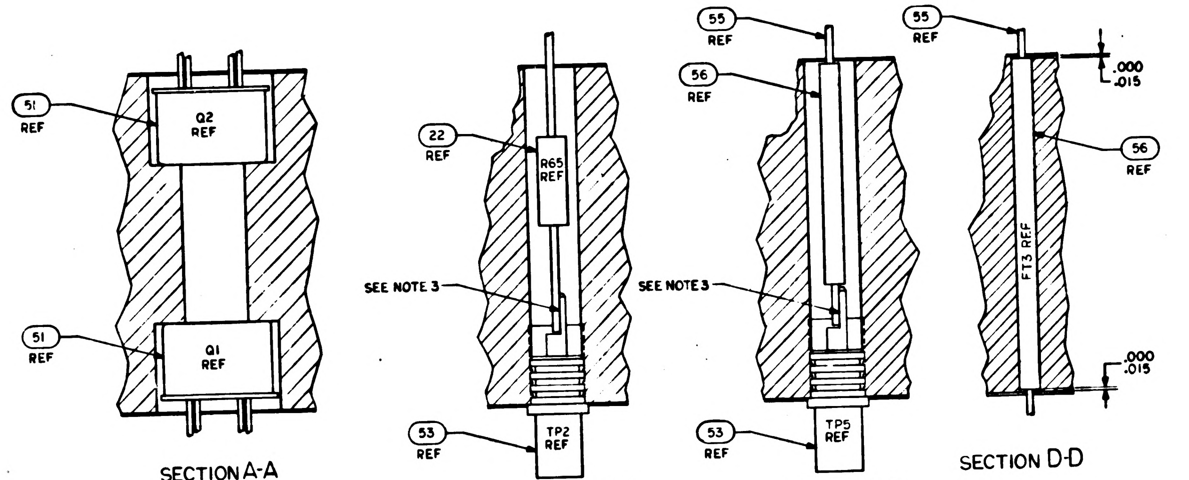
FT34
FT13
C14
C15
C16


51 REF
Q2 REF
51 REF
Q1 REF
22 REF
R65 REF
SEE NOTE 3
53 REF
TP2 REF
55 REF
56 REF
SEE NOTE 3
53 REF
TP5 REF
55 REF
.000
.015
FT3 REF
56 REF
.000
.015

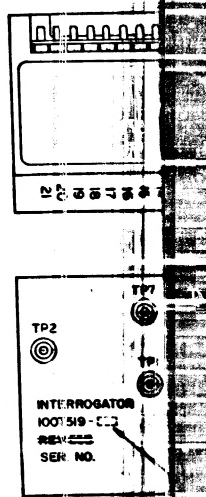
SECTION A-A

SECTION B-B

SECTION C-C

SECTION D-D

TP CHART	
TP	COMPONENT
1	R64
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69

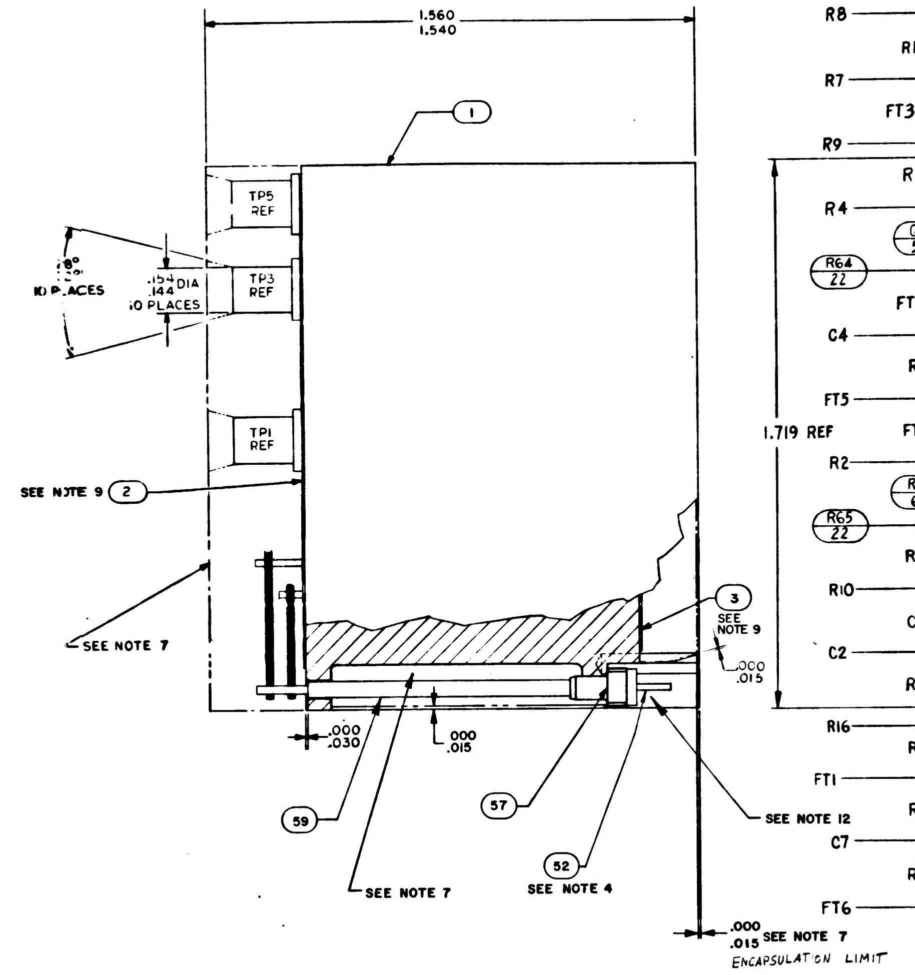

TP2
TP7
INTERROGATOR
1007519-
SER. NO.

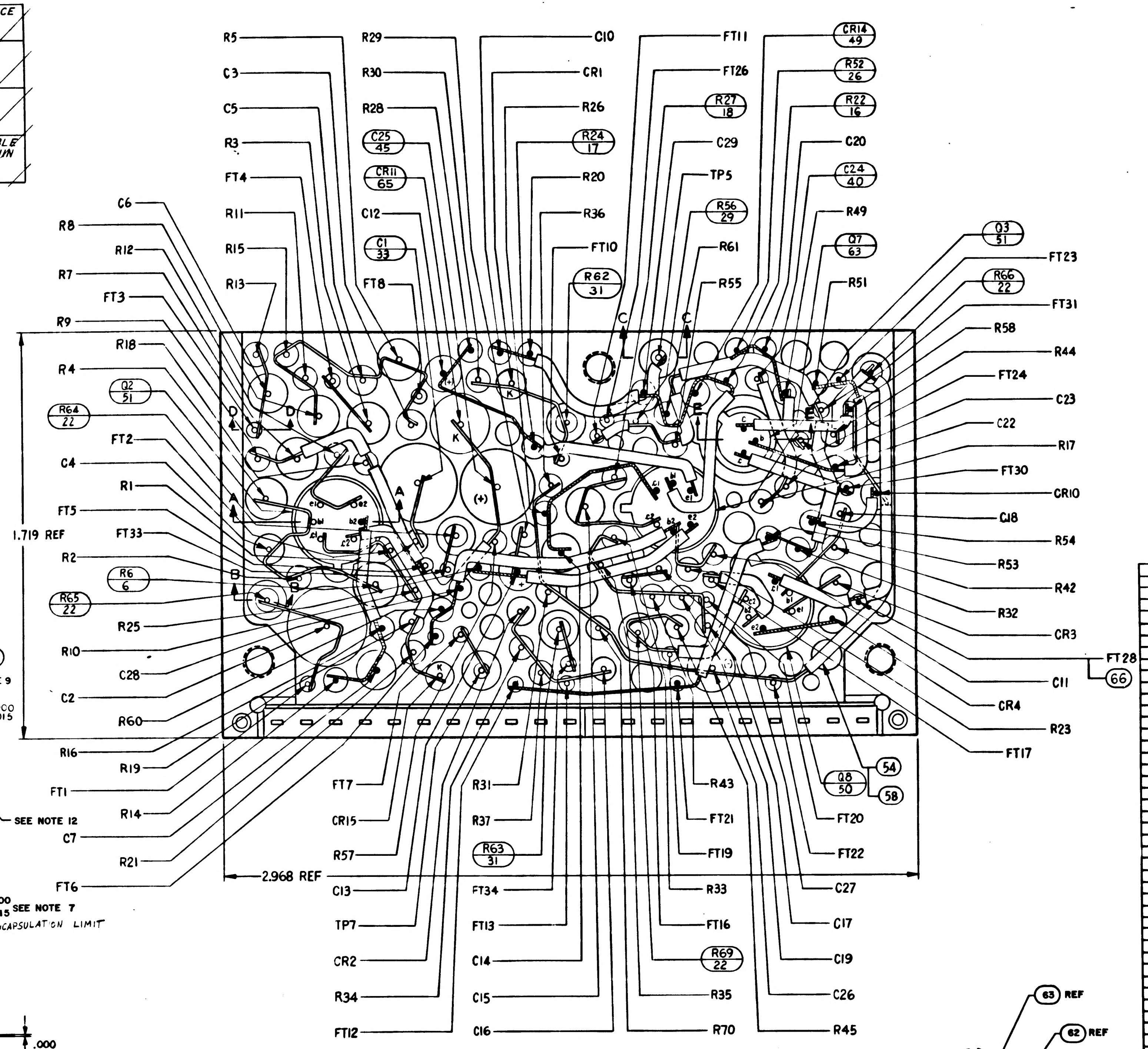
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. STAKE ALL COMPONENTS AND FIND NO.53 PER ND1002009 METHOD ~~H~~ J.
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005
4. MUST MEET REQUIREMENTS OF ND 1002136
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
8. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
9. ON ITEMS 2 AND 3
   BROKEN PATHS INDICATE INSULATION SLEEVING,
   K INDICATES CATHODE SIDE OF DIODE,
   FT() INDICATES FEED THRU
   PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   B INDICATES BASE LEAD OF TRANSISTOR,
   E INDICATES EMITTER LEAD OF TRANSISTOR
   C() INDICATES COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B() INDICATES BASE LEAD OF MULTISTAGE TRANSISTOR
   E() INDICATES EMITTER LEAD OF MULTISTAGE TRANSISTOR
10. PROCURE PER PS 1007019
11. ~~BOND FIND NO. 60 AND FIND NO. 61 TO FIND NO. 57 PER ND 1002237.~~
12. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069
14. AR DENOTES AS REQUIRED
15. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
16. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
17. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
18. ~~EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010720-1, CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.~~
18. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

TABLE I

[illegible]URATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
[illegible] AND FLAT [illegible]	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXT HEATSINK SURF	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
[illegible]	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
[illegible]	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE


1.560
1.540
1
TP5 REF
TP3 REF
TP1 REF
8°
10 PLACES
.154 DIA
.144
10 PLACES
SEE NOTE 9
2
SEE NOTE 7
3
SEE NOTE 9
.000
.015
.000
.030
.000
.015
57
59
SEE NOTE 7
52
SEE NOTE 4
SEE NOTE 12
.000
.015
SEE NOTE 7
ENCAPSULATION LIMIT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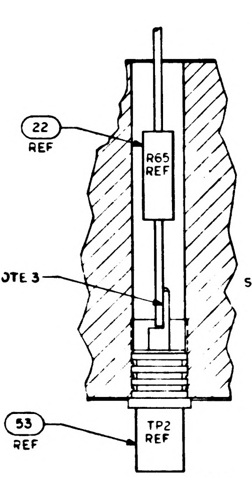
C3
C5
R3
FT4
R11
R15
R13
C6
R8
R12
R7
FT3
R9
R18
R4
Q2 51
R64 22
FT2
C4
R1
FT5
FT33
R2
R6 6
R65 22
R25
R10
C28
C2
R60
R16
R19
FT1
R14
C7
R21
FT6
R29
R30
R28
C25 45
CR11 65
C12
C1 33
FT8
C10
CR1
R26
R24 17
R20
R36
FT10
R62 31
FT11
FT26
R27 18
C29
TP5
R56 29
R61
R55
CR14 49
R52 26
R22 16
C20
C24 40
R49
Q7 63
R51
Q3 51
FT23
R66 22
FT31
R58
R44
FT24
C23
C22
R17
FT30
CR10
C18
R54
R53
R42
R32
CR3
FT28
66
C11
CR4
R23
FT17
Q8 50
54
58
FT7
CR15
R57
C13
TP7
CR2
R34
FT12
R31
R37
R63 31
FT34
FT13
C14
C15
C16
R43
FT21
FT19
R33
FT16
R69 22
R35
R70
FT20
FT22
C27
C17
C19
C26
R45
1.719 REF
2.968 REF
A
B
C
D
K

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
A	—	REVISED PER TDRR 10636		[illegible]	
B	—	REVISED PER TDRR 17322		15-MAR 65	
C	—	REVISED PER TDRR 17906		[illegible]	
D	—	REVISED PER TDRR-19450	—	[illegible]	
E	—	REVISED PER TDRR 19502		[illegible]	
F		REVISED PER TDRR 20143		[illegible]	
G		REVISED PER TDRR 22969		12 OCT 65	
H		REVISED PER TDRR 23888		[illegible]	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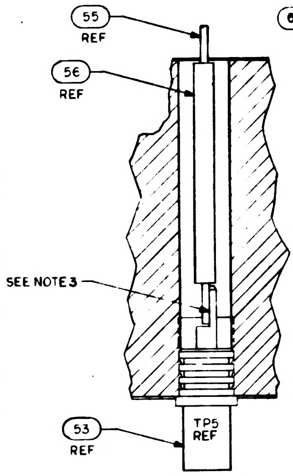
53
REF
TP2
REF

SECTION B-B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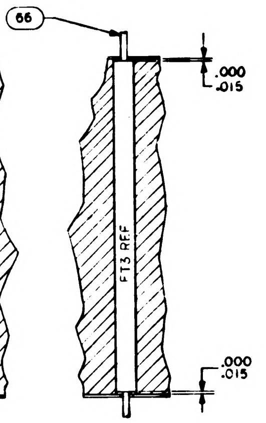
REF
TP5
REF

SECTION C-C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FT3 REF
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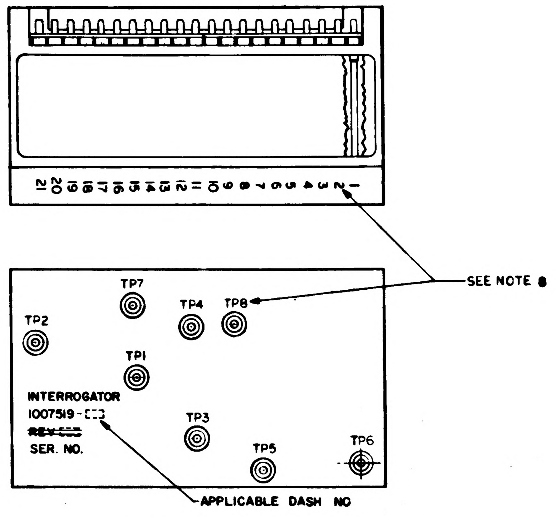
.015

SECTION D-D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TP2
TP4
TP8
TP1
INTERROGATOR
1007519-
~~REV~~
SER. NO.
TP3
TP5
TP6
APPLICABLE DASH NO

MARKING VIEW
SCALE 2/1

TP CHART	
TP	COMPONENT
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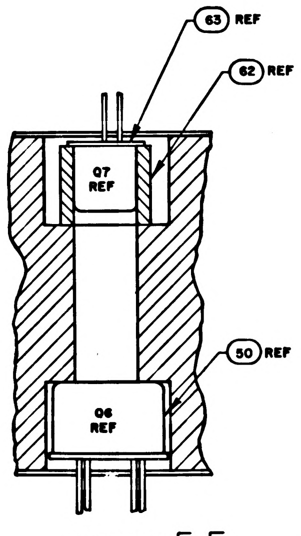
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69


63 REF
62 REF
Q7
REF
50 REF
Q6
REF

SECTION E-E

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			1		1010830-9	ZENER DIODE	65
			X		1009522	SCHEMATIC	REF
			1		1006750-51	RESISTOR, FIXED FILM	64
			1		1010675-001	TRANSISTOR	63
			1		1008025-1	INSULATOR BUSHING	62
			1		10[illegible]	GASKET, CONNECTOR MINIATURE	61
			1		1008540-11	GASKET, CONNECTOR MINIATURE	60
			AR		1006776-20	INSULATION SLEEVING	59
			AR		1006776-21	INSULATION SLEEVING	58
			21		1006775	INSULATOR, WRAPOST-MALE, MINAT	57
			AR		1006776-22	INSULATION SLEEVING	56
			AR		1006757-8	WIRE ELEC .020 DIA	55
			AR		1006757-1	WIRE ELEC .010 ± .020	54
			8		1010292-2	TERMINAL FEED THRU INSULATED	53
			21		1006782-4	CONTACT, WRAPOST-MALE, MINAT	52
			4		1010376-1	TRANSISTOR	51
			2		1010395	TRANSISTOR	50
			7		1010385	DIODE	49
			~~1~~		~~1010286-9~~	~~DIODE~~	48
			1		1006777-19	CAPACITOR, CER	47
			1		1006755-79	CAPACITOR, TANT	46
			1		1006755-83	CAPACITOR, TANT	45
			1		1006777-8	CAPACITOR, CER	44
			1		1006777-13	CAPACITOR, CER	43
							42
			3		1006777-12	CAPACITOR, CER	41
			[illegible]		1006777-24	CAPACITOR, CER	40
			2		1006755-69	CAPACITOR, TANT	39
			2		1006777-5	CAPACITOR, CER	38
			2		1006777-7	CAPACITOR, CER	37
			4		1006777-31	CAPACITOR, CER	36
			1		1006777-28	CAPACITOR, CER	35
			2		1006777-27	CAPACITOR, CER	34
			2		1010264-23	CAPACITOR, MYLAR	33
			2		1006777-3	CAPACITOR, CER	32
			2		1006750-63	RESISTOR, FIXED FILM	31
			1		1006750-24	RESISTOR, FIXED FILM	30
			1		1006750-45	RESISTOR, FIXED FILM	29
			1		1006750-1[illegible]	RESISTOR, FIXED FILM	28
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			1		1006750-48	RESISTOR, FIXED FILM	25
			3		1006750-60	RESISTOR, FIXED FILM	24
			2		1006750-66	RESISTOR, FIXED FILM	23
			4		1006750-56	RESISTOR, FIXED FILM	22
			2		1006750-52	RESISTOR, FIXED FILM	21
			2		1006750-49	RESISTOR, FIXED FILM	20
			2		1006750-39	RESISTOR, FIXED FILM	19
			2		1006750-54	RESISTOR, FIXED FILM	18
			2		1006750-55	RESISTOR, FIXED FILM	17
			2		1006750-65	RESISTOR, FIXED FILM	16
			4		1006750-80	RESISTOR, FIXED FILM	15
			4		1006750-53	RESISTOR, FIXED FILM	14
			3		1006750-31	RESISTOR, FIXED FILM	13
			2		1006750-41	RESISTOR, FIXED FILM	12
			2		1006750-25	RESISTOR, FIXED FILM	11
			2		1006750-43	RESISTOR, FIXED FILM	10
			1		1010377-51	RESISTOR, FIXED WW	9
			1		1010377-106	RESISTOR, FIXED WW	8
			1		1006750-42	RESISTOR, FIXED FILM	7
			2		1010377-105	RESISTOR, FIXED WW	6
			2		1010377-49	RESISTOR, FIXED WW	5
			4		1006750-32	RESISTOR, FIXED FILM	4
			1		1008588	INSULATOR, BOTTOM	3
			1		1008587	INSULATOR, TOP	2
			1		1008036	HEATSINK	1
			011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
QUANTITY REQUIRED					LIST OF MATERIALS		

H
1007519

12. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

~~EXCEPT FOR THE [illegible] MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING [illegible] PER [illegible], CURE AT [illegible] FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.~~

EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND10C2279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

1007574		
1007573		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN Splane DATE 2 OCT 64
CHECKED A. Uporich 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL 12-8-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INTERROGATOR
ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007519
SCALE 5/1
WT
SHEET 1 OF 1

㉔

2/1007519

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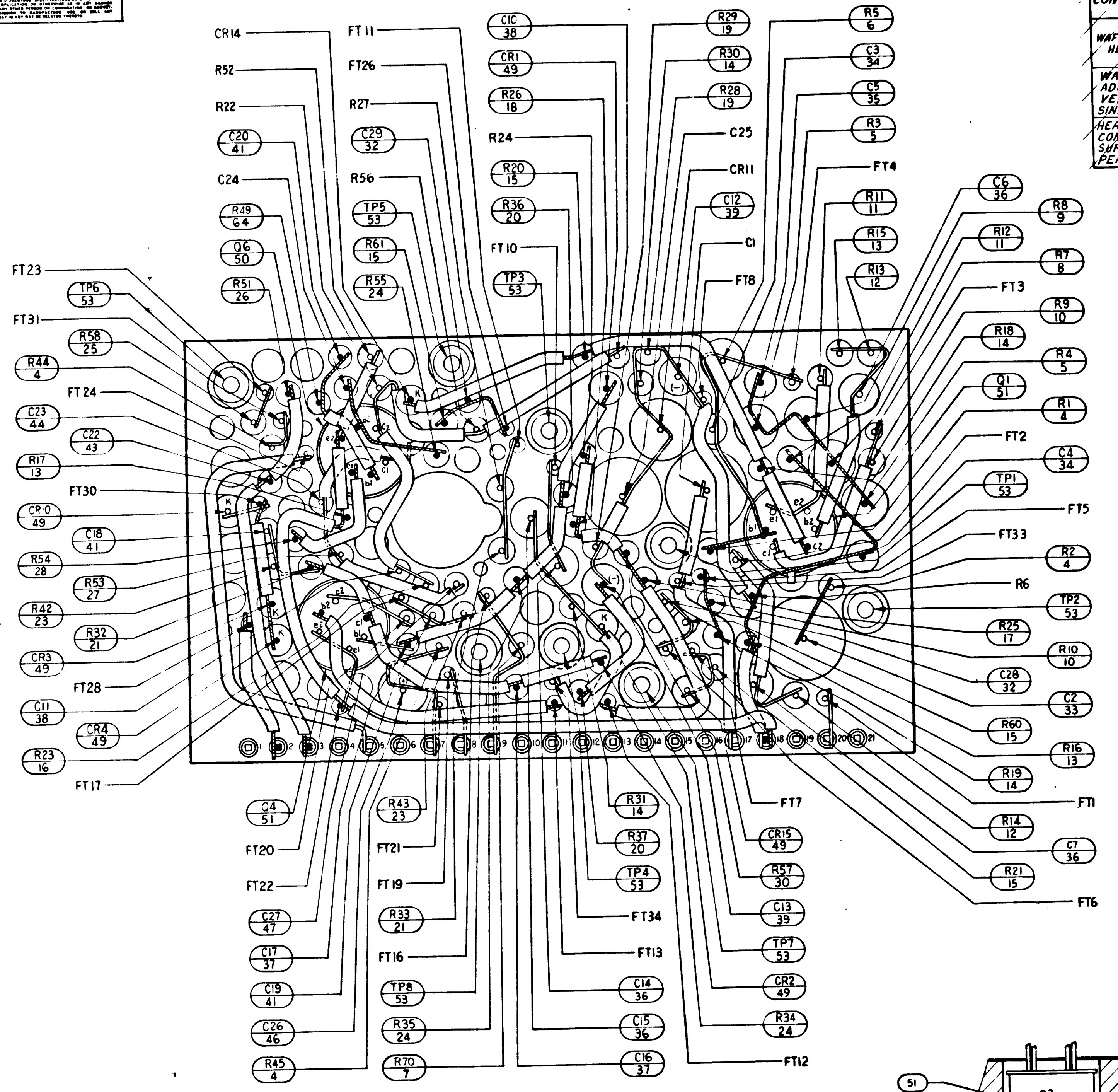
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R52
R22
C20 41
C24
R49 64
Q6 50
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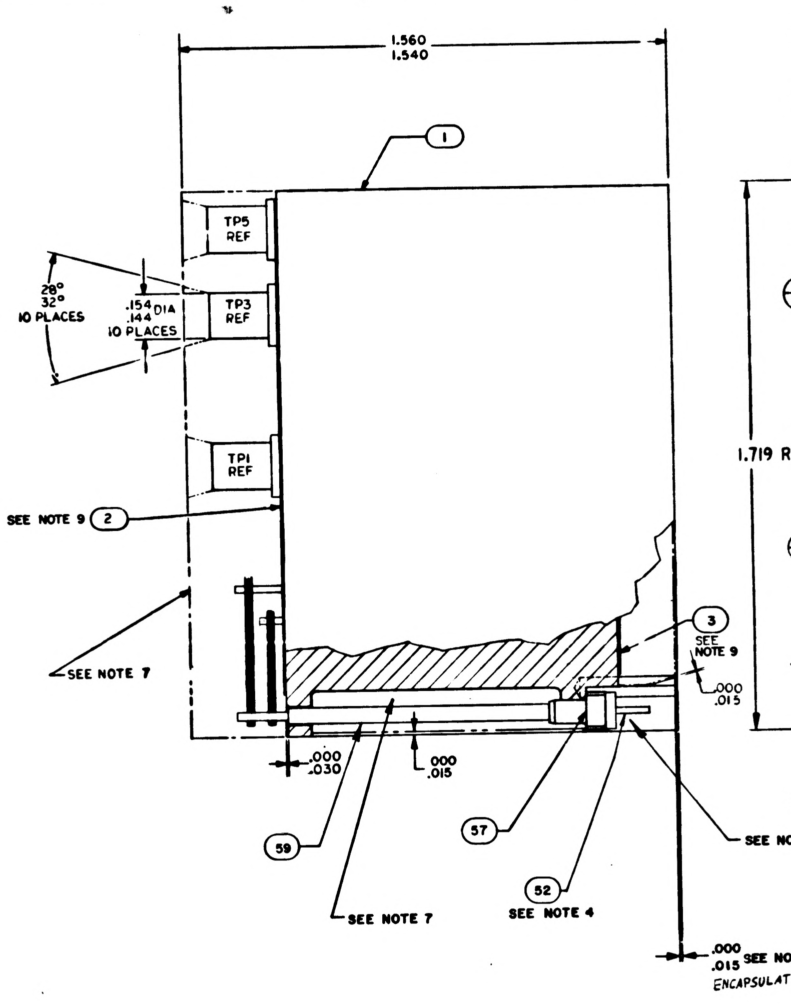
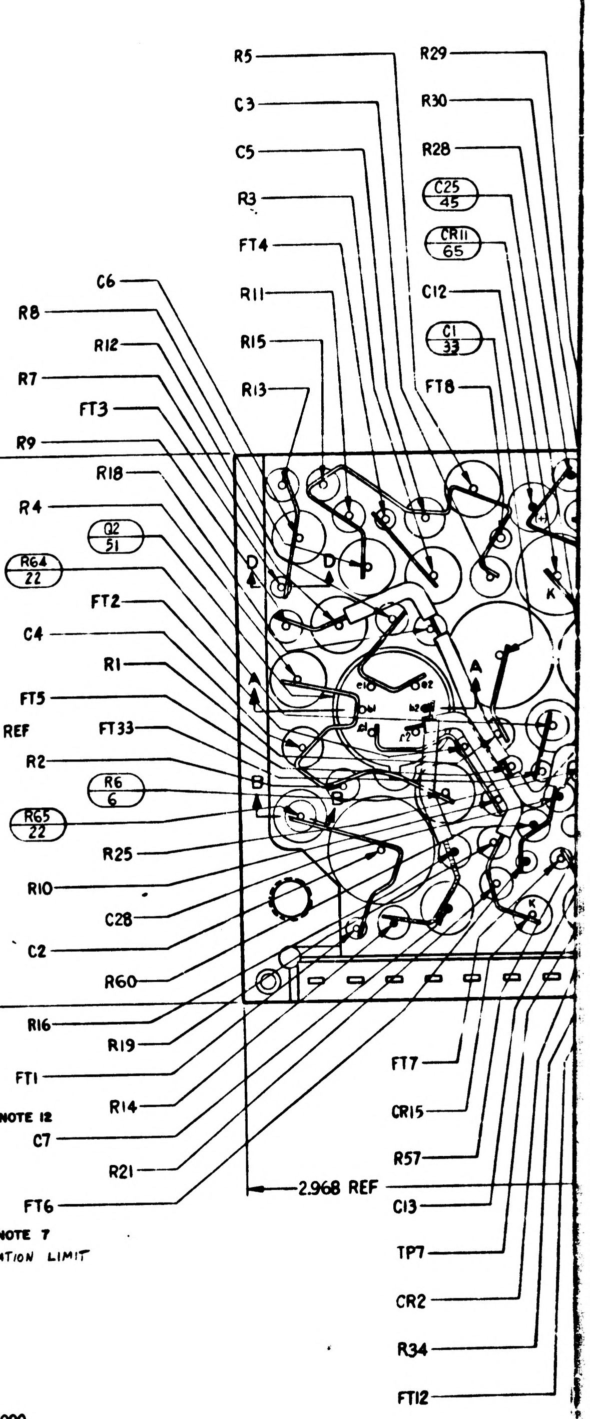
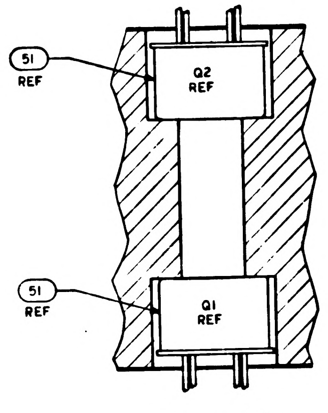
FT11
FT26
R27
C29 32
R56
TP5 53
R61 15
R55 24
C1C 38
CR1 49
R26 18
R24
R20 15
R36 20
FT10
TP3 53
R29 19
R30 14
R28 19
C25
CR11
C12 39
C1
FT8
R5 6
C3 34
C5 35
R3 5
FT4
R11 11
R15 13
R13 12
C6 36
R12 11
R8 9
R7 8
FT3
R9 10
R18 14
R4 5
Q1 51
R1 4
FT2
C4 34
TP1 53
FT5
FT33
R2 4
R6
TP2 53
R25 17
R10 10
C28 32
C2 33
R60 15
R16 13
R19 14
FT1
R14 12
C7 36
R21 15
FT6
FT23
TP6 53
FT31
R58 25
R44 4
FT24
C23 44
C22 43
R17 13
FT30
CR10 49
C18 41
R54 28
R53 27
R42 23
R32 21
CR3 49
FT28
C11 38
CR4 49
R23 16
FT17
Q4 51
FT20
FT22
C27 47
C17 37
C19 41
C26 46
R45 4
R43 23
FT21
FT19
R33 21
FT16
TP8 53
R35 24
R70 7
R31 14
R37 20
TP4 53
FT34
FT13
C14 36
C15 36
C16 37
FT7
CR15 49
R57 30
C13 39
TP7 53
CR2 49
R34 24
FT12

TABLE I

~~CONFIGURATION~~	~~BOND BETWEEN WAFER AND HEATSINK~~	~~TOP OF WAFER~~	~~HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE~~
~~WAFER AND FLAT HEATSINK~~	~~100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXT HEATSINK SURF.~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~WAFER AND ADJACENT VERTICAL HEAT SINK SURFACE~~	~~CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~HEATSINK FOAM CONTACT SURFACE PERIMETER~~	~~N/A~~	~~N/A~~	~~.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE~~


1.560
1.540
1
TP5 REF
TP3 REF
TP1 REF
28°
32°
10 PLACES
.154
.144 DIA
10 PLACES
SEE NOTE 9
2
SEE NOTE 7
3
SEE NOTE 9
.000
.015
.000
.030
.000
.015
59
57
52
SEE NOTE 4
SEE NOTE 7
SEE NOTE 12
.000
.015 SEE NOTE 7
ENCAPSULATION LIMIT


R5
C3
C5
R3
FT4
R11
R15
R13
R29
R30
R28
C25 45
CR11 65
C12
C1 33
FT8
C6
R8
R12
R7
FT3
R9
R18
R4
Q2 51
R64 22
FT2
C4
R1
FT5
FT33
R2
R6 6
R65 22
R25
R10
C28
C2
R60
R16
R19
FT1
R14
C7
R21
FT6
1.719 REF
2.968 REF
FT7
CR15
R57
C13
TP7
CR2
R34
FT12
A
B
D
K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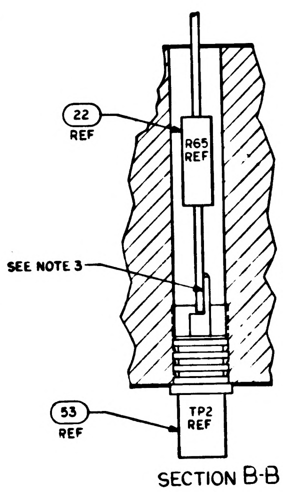
Q2
REF
51
REF
Q1
REF

SECTION A-A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REF
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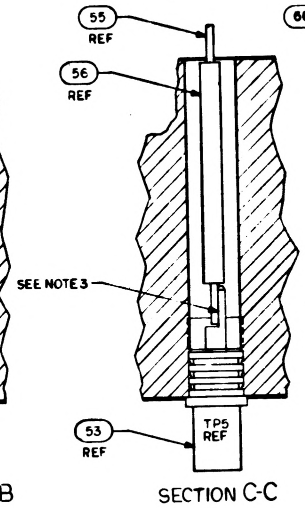
REF
SEE NOTE 3
53
REF
TP2
REF

SECTION B-B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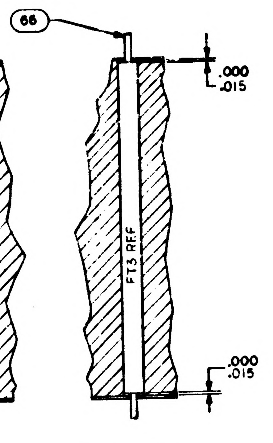
REF
56
REF
SEE NOTE 3
53
REF
TP5
REF

SECTION C-C


66
.000
.015
FT3 REF
.000
.015

SECTION D-D

TP CHART	
TP	COMPONENT
1	R64
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69

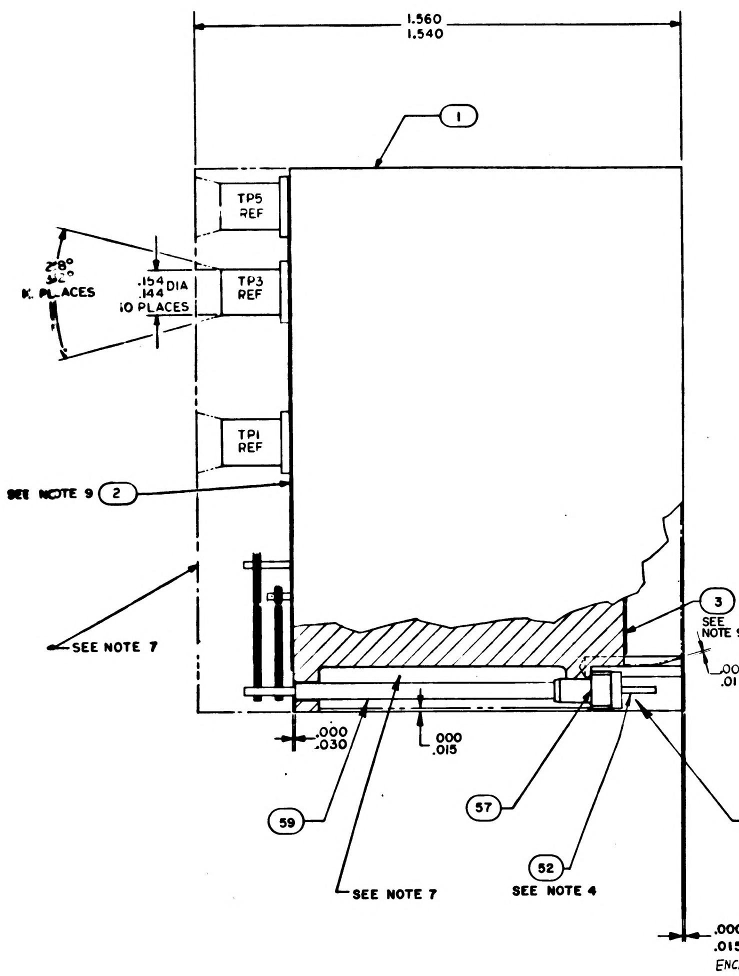
NOTES:

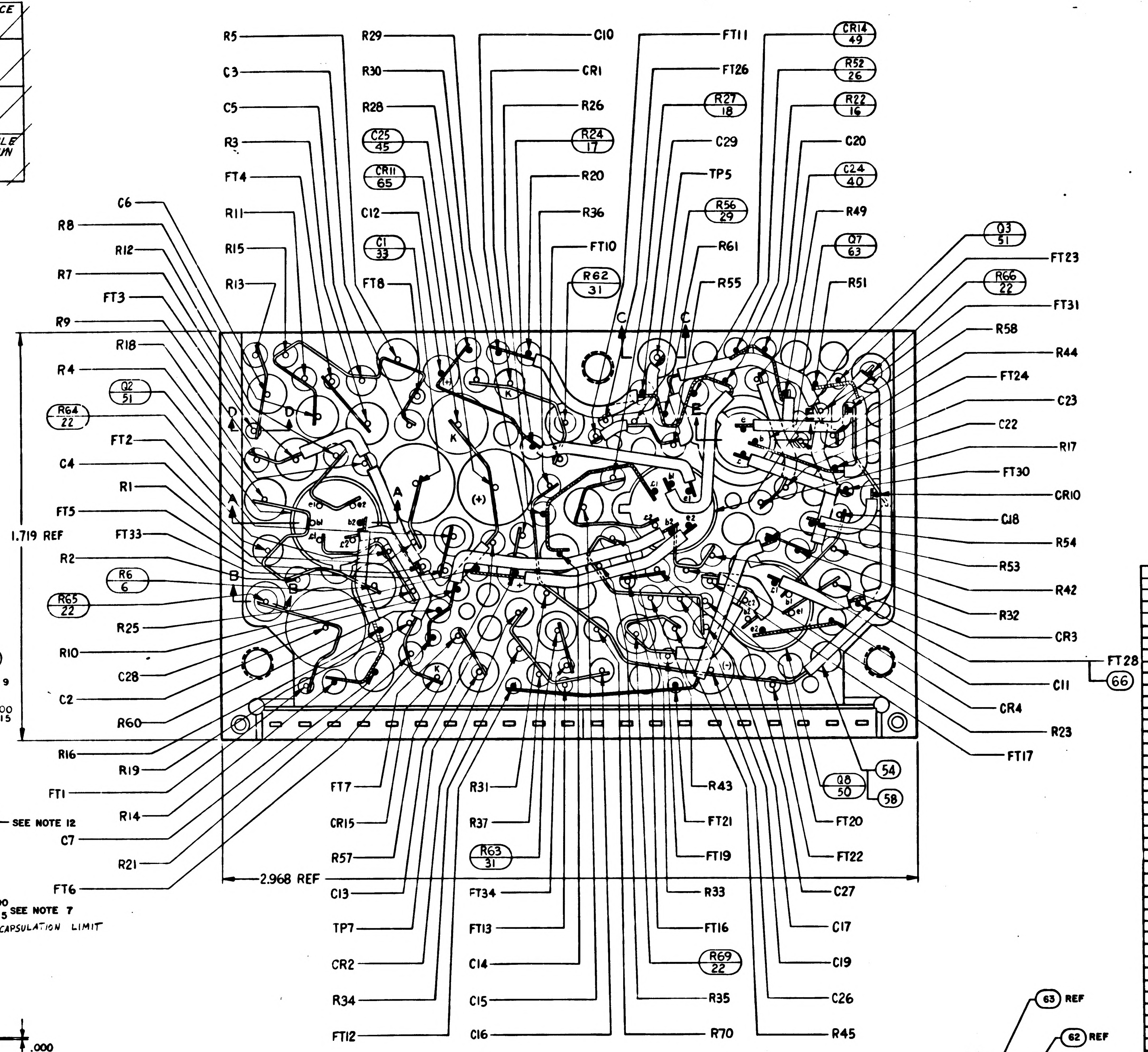
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. STAKE ALL COMPONENTS AND FIND NO.53 PER ND1002009 METHOD ~~**~~ J.
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005
4. MUST MEET REQUIREMENTS OF ND 1002136
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
8. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
9. ON ITEMS 2 AND 3
   BROKEN PATHS INDICATE INSULATION SLEEVING,
   K INDICATES CATHODE SIDE OF DIODE,
   FT() INDICATES FEED THRU
   PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   B INDICATES BASE LEAD OF TRANSISTOR,
   E INDICATES EMITTER LEAD OF TRANSISTOR
   C() INDICATES COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B() INDICATES BASE LEAD OF MULTISTAGE TRANSISTOR
   E() INDICATES EMITTER LEAD OF MULTISTAGE TRANSISTOR
10. PROCURE PER PS 1007019
11. ~~BOND FIND NO. 60 AND FIND NO. 61 TO FIND NO. 57 PER ND 1002237.~~
12. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069
14. AR DENOTES AS REQUIRED
15. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
16. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
17. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
18. ~~EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4, CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.~~
18. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXT HEATSINK SURF.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
[illegible]	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
[illegible]	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
A	—	REVISED PER TDRR 16636		2-FEB-65	
B	—	REVISED PER TDRR 17322		15-MAR-65	CGM
C	—	REVISED PER TDRR 17900		6-APR	
D	—	REVISED PER TDRR-19450	—	2-JUN-65	B.
E	—	REVISED PER TDRR 19502		3-JUN-65	
F		REVISED PER TDRR 20143		JUN 65	RH
G		REVISED PER TDRR 22969		12 OCT 65	
H		REVISED PER TDRR 23583			
J		REVISED PER TDRR 25544		4 FEB 66	


1.560
1.540
1
TP5 REF
TP3 REF
TP1 REF
28°
30'
K PLACES
.154
.144 DIA
10 PLACES
SEE NOTE 9
2
SEE NOTE 7
3
SEE NOTE 9
.000
.015
.000
.030
.000
.015
59
57
SEE NOTE 12
52
SEE NOTE 7
SEE NOTE 4
.000
.015
SEE NOTE 7
ENCAPSULATION LIMIT


R5
C3
C5
R3
FT4
R11
R15
R13
R29
R30
R28
C25 45
CR11 65
C12
C1 33
FT8
C10
CR1
R26
R24 17
R20
R36
FT10
R62 31
FT11
FT26
R27 18
C29
TP5
R56 29
R61
R55
CR14 49
R52 26
R22 16
C20
C24 40
R49
Q7 63
R51
Q3 51
R66 22
FT23
FT31
R58
R44
FT24
C23
C22
R17
FT30
CR10
C18
R54
R53
R42
R32
CR3
FT28
66
C11
CR4
R23
FT17
54
Q6 50
58
C6
R8
R12
R7
FT3
R9
R18
R4
Q2 51
R64 22
FT2
C4
R1
FT5
FT33
R2
R6 6
R65 22
R25
R10
C28
C2
R60
R16
R19
FT1
R14
C7
R21
FT6
1.719 REF
2.968 REF
FT7
CR15
R57
C13
TP7
CR2
R34
FT12
R31
R37
R63 31
FT34
FT13
C14
C15
C16
R43
FT21
FT19
R33
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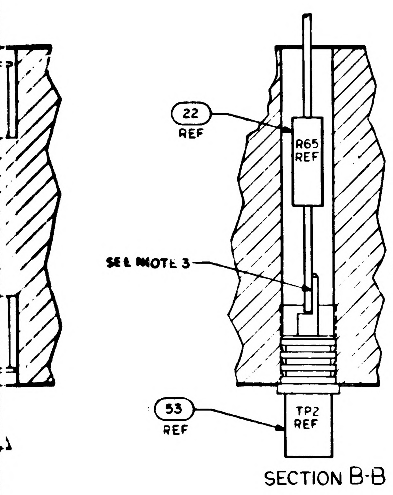
B
C
D
E
K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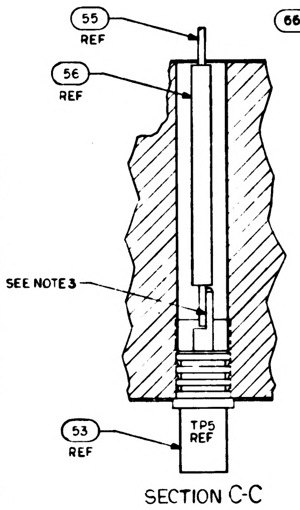
REF

SECTION B-B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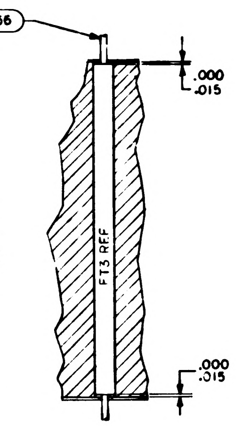
SECTION C-C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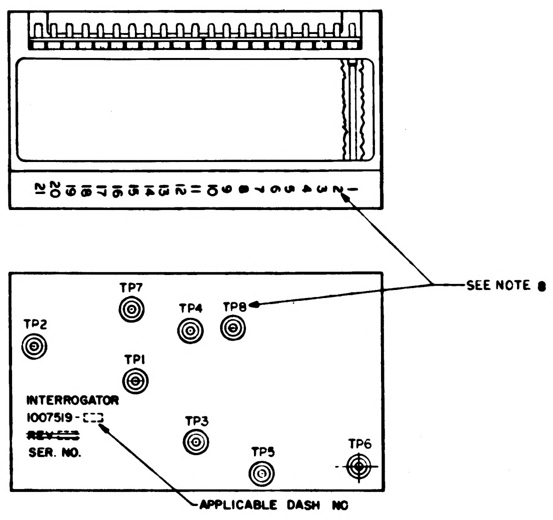
.000
.015
FT3 REF
.000
.015

SECTION D-D

TP CHART	
TP	COMPONENT
1	R64
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69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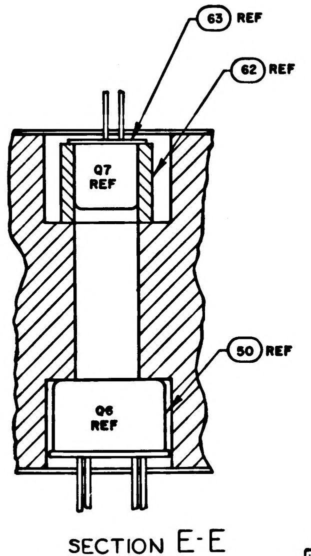
TP2
TP7
TP4
TP8
TP1
TP3
TP5
TP6
INTERROGATOR
1007519-
REV
SER. NO.
APPLICABLE DASH NO

MARKING VIEW
SCALE 2/1


63 REF
62 REF
Q7 REF
50 REF
Q6 REF

SECTION E-E

12. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

~~10. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, [illegible] CURE AT [illegible] FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE [illegible]~~

10. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
			011				
			AR		1010848-2	WIRE, ELECTRICAL- NICKEL	66
			1		1010830-9	ZENER DIODE	65
			✕		1009522	SCHEMATIC	REF
			1		1006750-51	RESISTOR, FIXED FILM	64
			1		1010675-001	TRANSISTOR	63
			1		1008025-1	INSULATOR BUSHING	62
			1		1008540-10	GASKET, CONNECTOR MINIATURE	61
			1		1008540-11	GASKET, CONNECTOR MINIATURE	60
			AR		1006776-20	INSULATION SLEEVING	59
			AR		1006776-21	INSULATION SLEEVING	58
			21		1006775	INSULATOR, WRAPOST-MALE, MINAT	57
			AR		1006776-22	INSULATION SLEEVING	56
			AR		1006757-8	WIRE ELEC .020 DIA	55
			AR		1006757-1	WIRE ELEC .010 ± .020	54
			8		1010292-2	TERMINAL FEED THRU INSULATED	53
			21		1006782-4	CONTACT, WRAPOST-MALE, MINAT	52
			4		1010376-1	TRANSISTOR	51
			2		1010395	TRANSISTOR	50
			7		1010385	DIODE	49
			~~1~~		~~1010286-9~~	~~DIODE~~	48
			1		1006777-19	CAPACITOR, CER	47
			1		1006755-79	CAPACITOR, TANT	46
			1		1006755-83	CAPACITOR, TANT	45
			1		1006777-8	CAPACITOR, CER	44
			1		1006777-13	CAPACITOR, CER	43
							42
			3		1006777-12	CAPACITOR, CER	41
			1		1006777-24	CAPACITOR, CER	40
			2		1006755-69	CAPACITOR, TANT	39
			2		1006777-5	CAPACITOR, CER	38
			2		1006777-7	CAPACITOR, CER	37
			4		1006777-31	CAPACITOR, CER	36
			1		1006777-28	CAPACITOR, CER	35
			2		1006777-27	CAPACITOR, CER	34
			2		1010264-23	CAPACITOR, MYLAR	33
			2		1006777-3	CAPACITOR, CER	32
			2		1006750-63	RESISTOR, FIXED FILM	31
			1		1006750-24	RESISTOR, FIXED FILM	30
			1		1006750-45	RESISTOR, FIXED FILM	29
			1		1006750-12	RESISTOR, FIXED FILM	28
			1		1006750-46	RESISTOR, FIXED FILM	27
			2		1006750-36	RESISTOR, FIXED FILM	26
			1		1006750-48	RESISTOR, FIXED FILM	25
			3		1006750-60	RESISTOR, FIXED FILM	24
			2		1006750-62	RESISTOR, FIXED FILM	23
			4		1006750-56	RESISTOR, FIXED FILM	22
			2		1006750-52	RESISTOR, FIXED FILM	21
			2		1006750-49	RESISTOR, FIXED FILM	20
			2		1006750-39	RESISTOR, FIXED FILM	19
			2		1006750-54	RESISTOR, FIXED FILM	18
			2		1006750-55	RESISTOR, FIXED FILM	17
			2		1006750-65	RESISTOR, FIXED FILM	16
			4		1006750-80	RESISTOR, FIXED FILM	15
			4		1006750-53	RESISTOR, FIXED FILM	14
			3		1006750-31	RESISTOR, FIXED FILM	13
			2		1006750-41	RESISTOR, FIXED FILM	12
			2		1006750-25	RESISTOR, FIXED FILM	11
			2		1006750-43	RESISTOR, FIXED FILM	10
			1		1010377-51	RESISTOR, FIXED WW	9
			1		1010377-106	RESISTOR, FIXED WW	8
			1		1006750-42	RESISTOR, FIXED FILM	7
			2		1010377-105	RESISTOR, FIXED WW	6
			2		1010377-49	RESISTOR, FIXED WW	5
			4		1006750-32	RESISTOR, FIXED FILM	4
			1		1008588	INSULATOR, BOTTOM	3
			1		1008587	INSULATOR, TOP	2
			1		1008036	HEATSINK	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		
APPLICATION		

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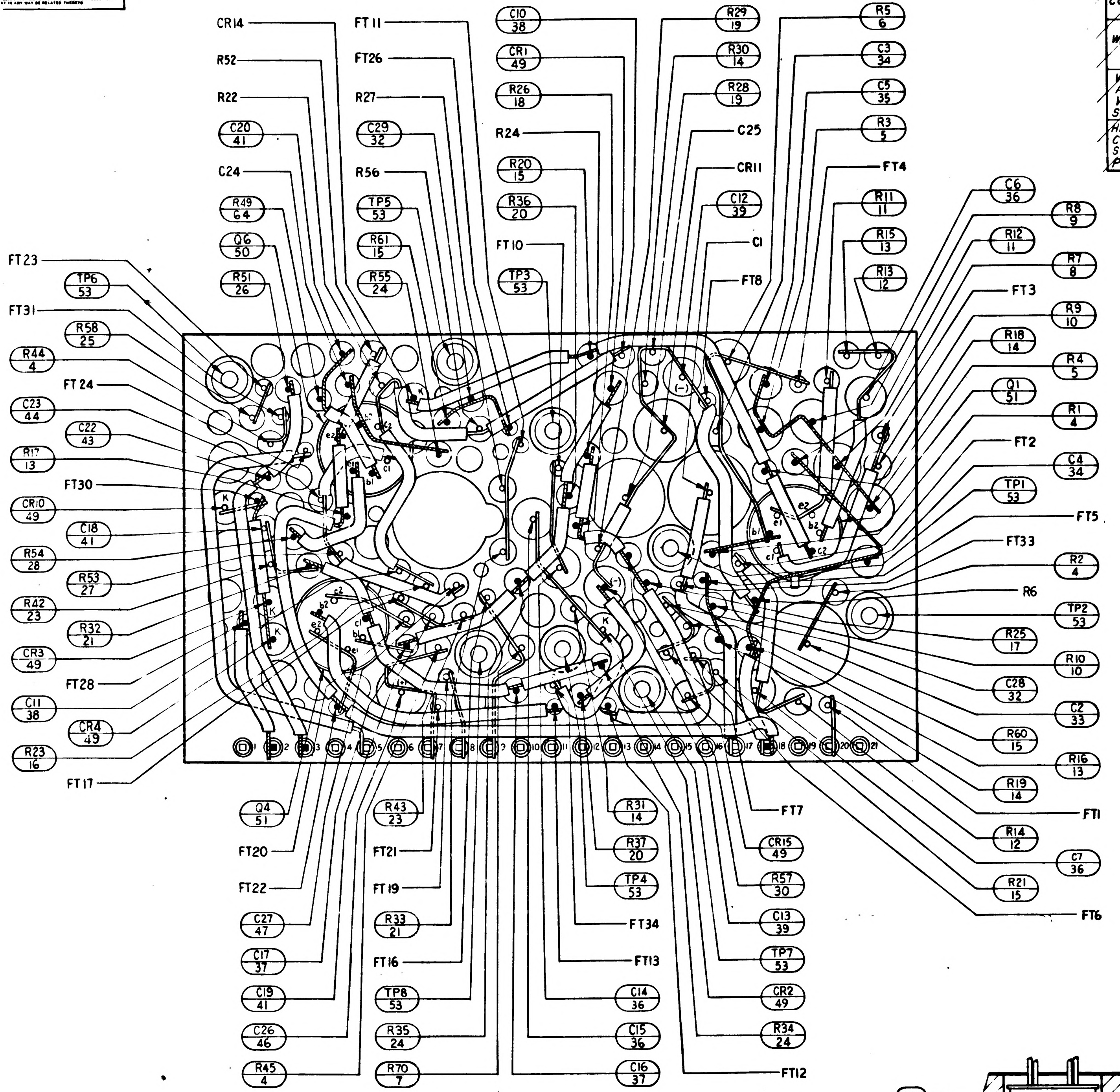
SCALE 5/1
WT
SHEET 1 OF 1

J 1007519

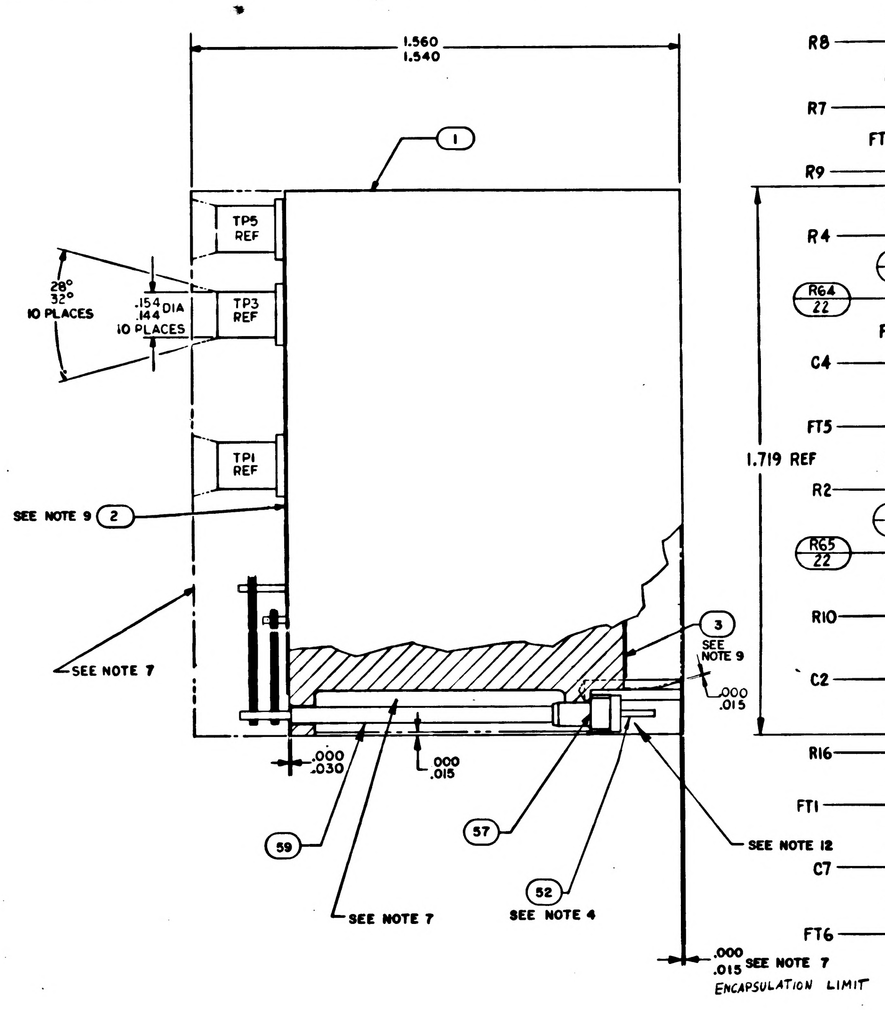
27 1007519

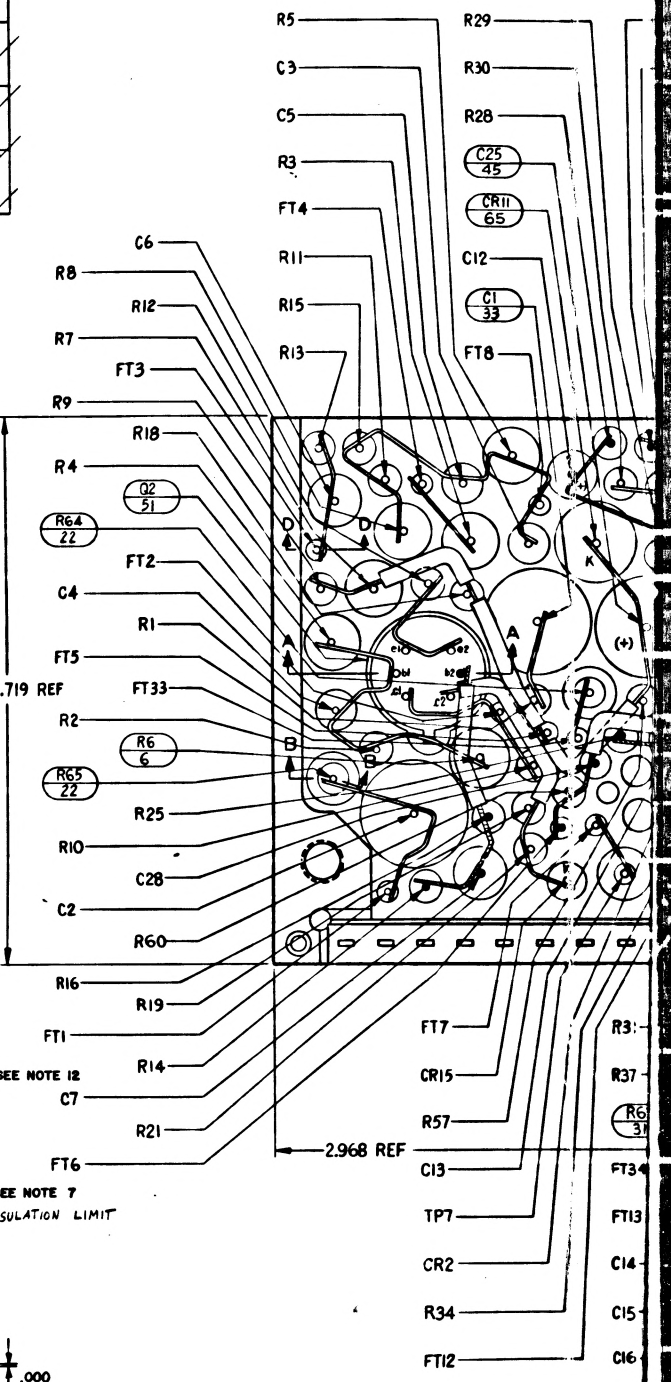
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO


CR14
R52
R22
C20 41
C24
R49 64
Q6 50
R51 26
FT23
TP6 53
FT31
R58 25
R44 4
FT24
C23 44
C22 43
R17 13
FT30
CR10 49
C18 41
R54 28
R53 27
R42 23
R32 21
CR3 49
FT28
C11 38
CR4 49
R23 16
FT17
FT11
FT26
R27
C29 32
R56
TP5 53
R61 15
R55 24
C10 38
CR1 49
R26 18
R24
R20 15
R36 20
FT10
TP3 53
R29 19
R30 14
R28 19
C25
CR11
C12 39
C1
FT8
R5 6
C3 34
C5 35
R3 5
FT4
R11 11
R15 13
R13 12
C6 36
R8 9
R12 11
R7 8
FT3
R9 10
R18 14
R4 5
Q1 51
R1 4
FT2
C4 34
TP1 53
FT5
FT33
R2 4
R6
TP2 53
R25 17
R10 10
C28 32
C2 33
R60 15
R16 13
R19 14
FT1
R14 12
C7 36
R21 15
FT6
Q4 51
FT20
FT22
C27 47
C17 37
C19 41
C26 46
R45 4
R43 23
FT21
FT19
R33 21
FT16
TP8 53
R35 24
R70 7
R31 14
R37 20
TP4 53
FT34
FT13
C14 36
C15 36
C16 37
FT7
CR15 49
R57 30
C13 39
TP7 53
CR2 49
R34 24
FT12

~~TABLE I~~

~~CONFIGURATION~~	~~BOND BETWEEN WAFER AND HEATSINK~~	~~TOP OF WAFER~~	~~HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE~~
~~WAFER AND FLAT HEATSINK~~	~~100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXT HEATSINK SURF.~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~WAFER AND ADJACENT VERTICAL HEAT SINK SURFACE~~	~~CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~HEATSINK FOAM CONTACT SURFACE PERIMETER~~	~~N/A~~	~~N/A~~	~~.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE~~


1.560
1.540
1
TP5 REF
TP3 REF
TP1 REF
28°
32°
10 PLACES
.154
.144 DIA
10 PLACES
SEE NOTE 9
2
SEE NOTE 7
3
SEE NOTE 9
.000
.015
1.719 REF
.000
.030
.000
.015
59
57
SEE NOTE 12
52
SEE NOTE 7
SEE NOTE 4
.000
.015 SEE NOTE 7
ENCAPSULATION LIMIT


R5
C3
C5
R3
FT4
R11
R15
R13
C6
R8
R12
R7
FT3
R9
R18
R4
Q2 51
R64 22
FT2
C4
R1
FT5
FT33
R2
R6 6
R65 22
R25
R10
C28
C2
R60
R16
R19
FT1
R14
C7
R21
FT6
2.968 REF
R29
R30
R28
C25 45
CR11 65
C12
C1 33
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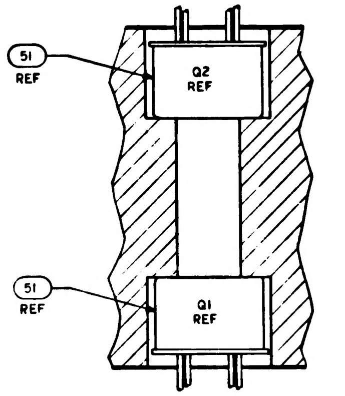
FT12
FT34
FT13
C14
C15
C16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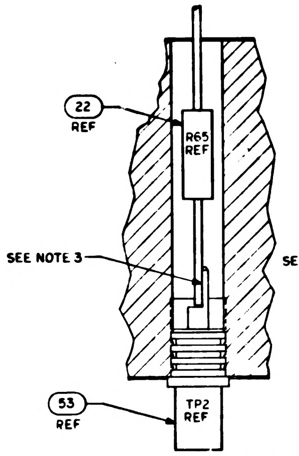
Q2
REF
51
REF
Q1
REF

SECTION A-A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R65
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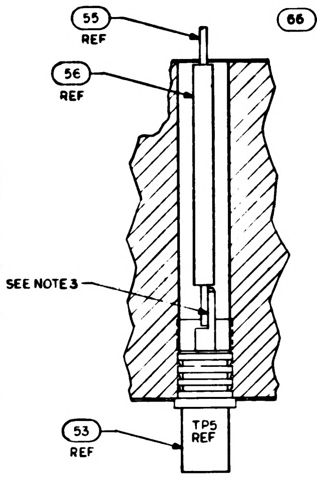
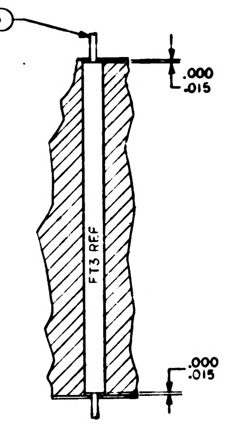
SEE NOTE 3
53
REF
TP2
REF

SECTION B-B


55
REF
56
REF
SEE NOTE 3
53
REF
TP5
REF

SECTION C-C


66
.000
.015
FT3 REF
.000
.015

SECTION D-D

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. STAKE ALL COMPONENTS AND FIND NO.53 PER ND1002009 METHOD ~~#~~ J.
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005
4. MUST MEET REQUIREMENTS OF ND 1002136
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
8. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
9. ON ITEMS 2 AND 3
   BROKEN PATHS INDICATE INSULATION SLEEVING,
   K INDICATES CATHODE SIDE OF DIODE,
   FT() INDICATES FEED THRU
   PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   B INDICATES BASE LEAD OF TRANSISTOR,
   E INDICATES EMITTER LEAD OF TRANSISTOR
   C() INDICATES COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B() INDICATES BASE LEAD OF MULTISTAGE TRANSISTOR
   E() INDICATES EMITTER LEAD OF MULTISTAGE TRANSISTOR
10. PROCURE PER PS 1007019
~~11. BOND FIND NO. 60 AND FIND NO. 61 TO FIND NO. 57 PER ND 1002237.~~
12. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069
14. AR DENOTES AS REQUIRED
~~15. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
~~16. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~

17. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

~~18. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.~~

18. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

TP CHART

TP	COMPONENT
1	R64
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69

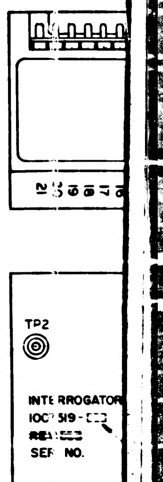
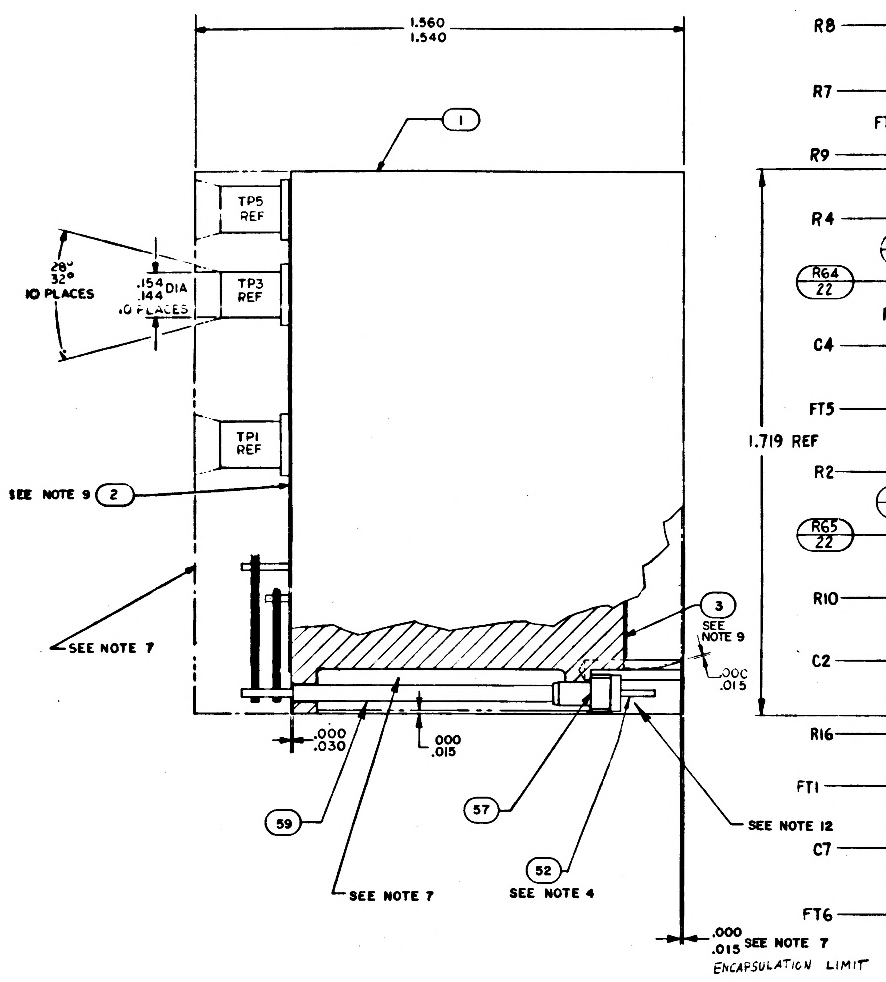

TP2
INTERROGATOR
SER NO.

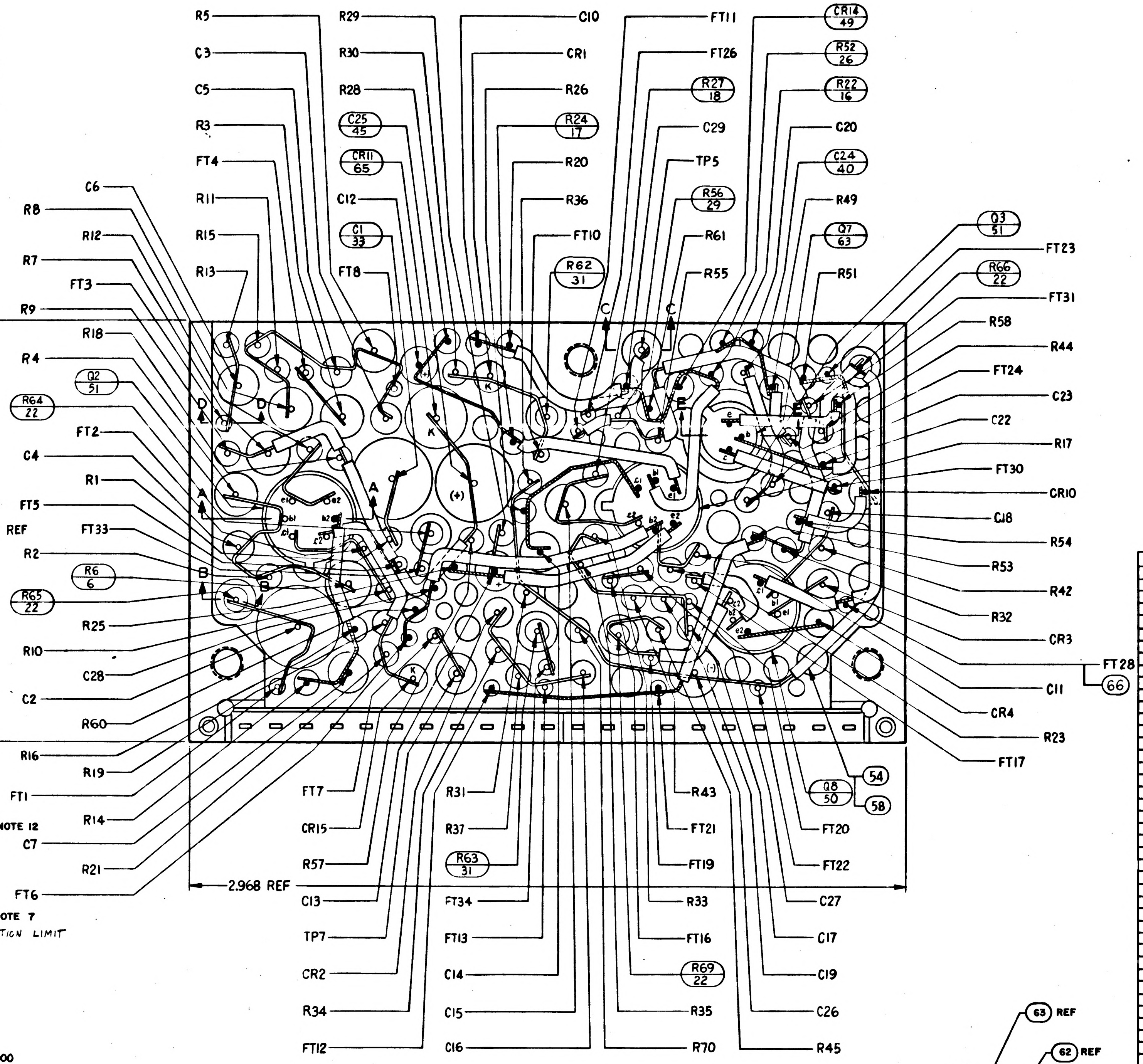
TABLE I

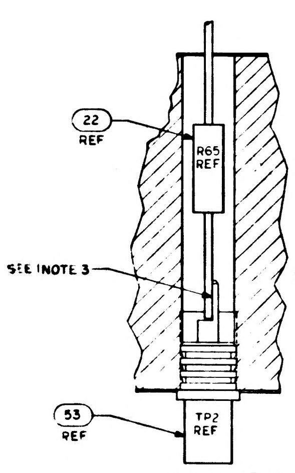
…ATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
…D FLAT	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXT HEATSINK SURF.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
… AND …T …-HEAT …F-CE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
… FOAM …EP	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE

REVISIONS

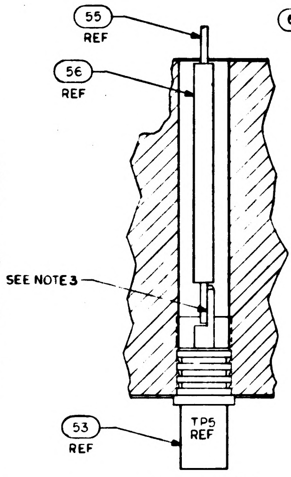
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
A	—	REVISED PER TDRR 10636		[illegible] 65	
B	—	REVISED PER TDRR 17322		15-MAR 65	GM
C	—	REVISED PER TDRR 17966		6-APR [illegible]	
D	—	REVISED PER TDRR-19450	—	2-JUN-65	
E	—	REVISED PER TDRR 19502		9 JUN 65	
F		REVISED PER TDRR 20143		9 JUN 65	RH
G		REVISED PER TDRR 22969		12 OCT 65	
H		REVISED PER TDRR 23588		[illegible] 65	
J		REVISED PER TDRR 25544		4 FEB 66	
K		REVISED PER TDRR 26397		25 FEB 66	RP


1.560
1.540
TP5 REF
TP3 REF
TP1 REF
28°
32°
10 PLACES
.154
.144 DIA
10 PLACES
1
SEE NOTE 9
2
SEE NOTE 7
3
SEE NOTE 9
.000
.015
.000
.030
.000
.015
59
57
SEE NOTE 12
52
SEE NOTE 4
SEE NOTE 7
.000
.015
SEE NOTE 7
ENCAPSULATION LIMIT

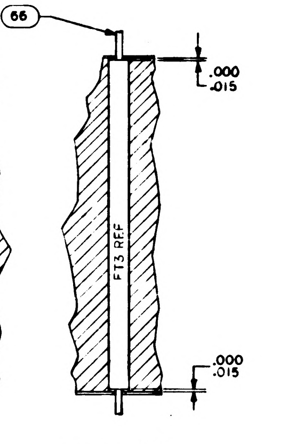

R5
C3
C5
R3
FT4
R11
R15
R13
C6
R8
R12
R7
FT3
R9
R18
R4
Q2 51
R64 22
FT2
C4
R1
FT5
FT33
R2
R6 6
R65 22
R25
R10
C28
C2
R60
R16
FT1
R19
R14
C7
R21
FT6
R29
R30
R28
C25 45
CR11 65
C12
C1 33
FT8
C10
CR1
R26
R24 17
C29
TP5
R20
R36
FT10
R62 31
R61
R55
FT11
FT26
R27 18
CR14 49
R52 26
R22 16
C20
C24 40
R49
R56 29
Q7 63
R51
Q3 51
R66 22
FT23
FT31
R58
R44
FT24
C23
C22
R17
FT30
CR10
C18
R54
R53
R42
R32
CR3
FT28
66
C11
CR4
R23
FT17
54
Q8 50
58
FT20
FT22
C27
C17
C19
C26
R45
R43
FT21
FT19
R33
FT16
R69 22
R35
R70
R31
R37
R63 31
FT34
FT13
C14
C15
C16
FT7
CR15
R57
C13
TP7
CR2
R34
FT12
1.719 REF
2.968 REF
A
B
C
D
K


22 REF
R65 REF
SEE NOTE 3
53 REF
TP2 REF

SECTION B-B

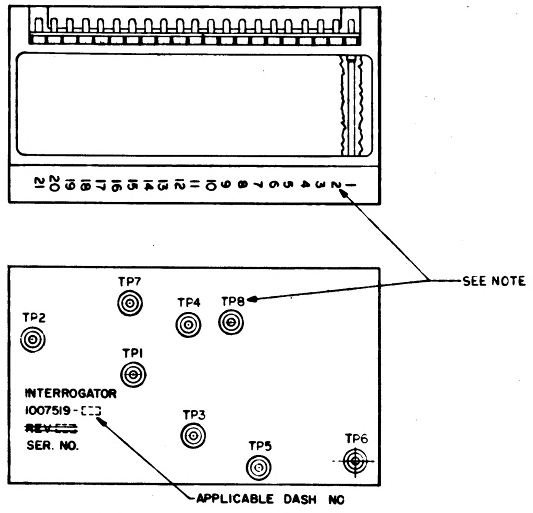

55 REF
56 REF
SEE NOTE 3
53 REF
TP5 REF

SECTION C-C

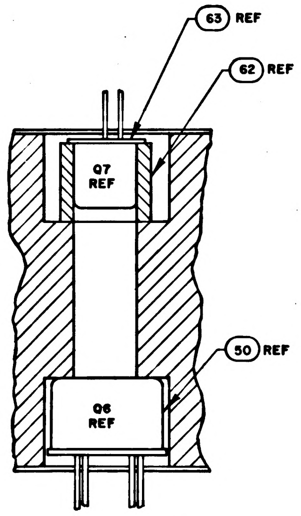

66
.000
.015
FT13 REF
.000
.015

SECTION D-D

TP CHART	
TP	COMPONENT
1	R64
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
SEE NOTE 8
TP7
TP2
TP4
TP8
TP1
INTERROGATOR
1007519-
~~REV~~
SER. NO.
TP3
TP5
TP6
APPLICABLE DASH NO

MARKING VIEW
SCALE 2/1


63 REF
62 REF
Q7 REF
50 REF
Q8 REF

SECTION E-E

… CLEAN … WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

~~… EXCEPT … MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, … PAINT PER … CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS … PHOTO PAINT.~~

… EXCEPT … MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND … PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

… MOISTURE PROOF PER ND1002292 AS REQUIRED BY FIND NO. (67) USING INSULATION TAPE … ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 … PAINTING AND STENCILLING.

LIST OF MATERIALS

QUANTITY REQUIRED		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		AR	—		SEE NOTE 19	MOISTUREPROOFING	67
		AR	AR		1010848-2	WIRE, ELECTRICAL- NICKEL	66
		1	1		1010830-9	ZENER DIODE	65
		╳	╳		1009522	SCHEMATIC	REF
		1	1		1006750-51	RESISTOR, FIXED FILM	64
		1	1		1010675-001	TRANSISTOR	63
		1	1		1008025-1	INSULATOR BUSHING	62
		1	1		1008540-10	GASKET, CONNECTOR MINIATURE	61
		1	1		1008540-11	GASKET, CONNECTOR MINIATURE	60
		AR	AR		1006776-20	INSULATION SLEEVING	59
		AR	AR		1006776-21	INSULATION SLEEVING	58
		21	21		1006775	INSULATOR, WRAPOST-MALE, MINAT	57
		AR	AR		1006776-22	INSULATION SLEEVING	56
		AR	AR		1006757-8	WIRE ELEC .020 DIA	55
		AR	AR		1006757-1	WIRE ELEC .010 ± .020	54
		8	8		1010292-2	TERMINAL FEED THRU INSULATED	53
		21	21		1006782-4	CONTACT, WRAPOST-MALE, MINAT	52
		4	4		1010376-1	TRANSISTOR	51
		2	2		1010395	TRANSISTOR	50
		7	7		1010385	DIODE	49
			~~1~~		~~1010286-9~~	~~DIODE~~	48
		1	1		1006777-19	CAPACITOR, CER	47
		1	1		1006755-79	CAPACITOR, TANT	46
		1	1		1006755-83	CAPACITOR, TANT	45
		1	1		1006777-8	CAPACITOR, CER	44
		1	1		1006777-13	CAPACITOR, CER	43
							42
		3	3		1006777-12	CAPACITOR, CER	41
		1	1		1006777-24	CAPACITOR, CER	40
		2	2		1006755-69	CAPACITOR, TANT	39
		2	2		1006777-5	CAPACITOR, CER	38
		2	2		1006777-7	CAPACITOR, CER	37
		4	4		1006777-31	CAPACITOR, CER	36
		1	1		1006777-28	CAPACITOR, CER	35
		2	2		1006777-27	CAPACITOR, CER	34
		2	2		1010264-23	CAPACITOR, MYLAR	33
		2	2		1006777-3	CAPACITOR, CER	32
		2	2		1006750-63	RESISTOR, FIXED FILM	31
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		1	1		1006750-45	RESISTOR, FIXED FILM	29
		1	1		1006750-12	RESISTOR, FIXED FILM	28
		1	1		1006750-46	RESISTOR, FIXED FILM	27
		2	2		1006750-36	RESISTOR, FIXED FILM	26
		1	1		1006750-48	RESISTOR, FIXED FILM	25
		3	3		1006750-60	RESISTOR, FIXED FILM	24
		2	2		1006750-62	RESISTOR, FIXED FILM	23
		4	4		1006750-56	RESISTOR, FIXED FILM	22
		2	2		1006750-52	RESISTOR, FIXED FILM	21
		2	2		1006750-49	RESISTOR, FIXED FILM	20
		2	2		1006750-39	RESISTOR, FIXED FILM	19
		2	2		1006750-54	RESISTOR, FIXED FILM	18
		2	2		1006750-55	RESISTOR, FIXED FILM	17
		2	2		1006750-65	RESISTOR, FIXED FILM	16
		4	4		1006750-80	RESISTOR, FIXED FILM	15
		4	4		1006750-53	RESISTOR, FIXED FILM	14
		3	3		1006750-31	RESISTOR, FIXED FILM	13
		2	2		1006750-41	RESISTOR, FIXED FILM	12
		2	2		1006750-25	RESISTOR, FIXED FILM	11
		2	2		1006750-43	RESISTOR, FIXED FILM	10
		1	1		1010377-51	RESISTOR, FIXED WW	9
		1	1		1010377-106	RESISTOR, FIXED WW	8
		1	1		1006750-42	RESISTOR, FIXED FILM	7
		2	2		1010377-105	RESISTOR, FIXED WW	6
		2	2		1010377-49	RESISTOR, FIXED WW	5
		4	4		1006750-32	RESISTOR, FIXED FILM	4
		1	1		1008588	INSULATOR, BOTTOM	3
		1	1		1008587	INSULATOR, TOP	2
		1	1		1008036	HEATSINK	1

K
1007519

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		— —

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN Splane DATE 2 OCT 64
CHECKED W. Udovich 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL 12-8-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INTERROGATOR
ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007519
SCALE 5/1
WT
SHEET 1 OF 1

27/1007519

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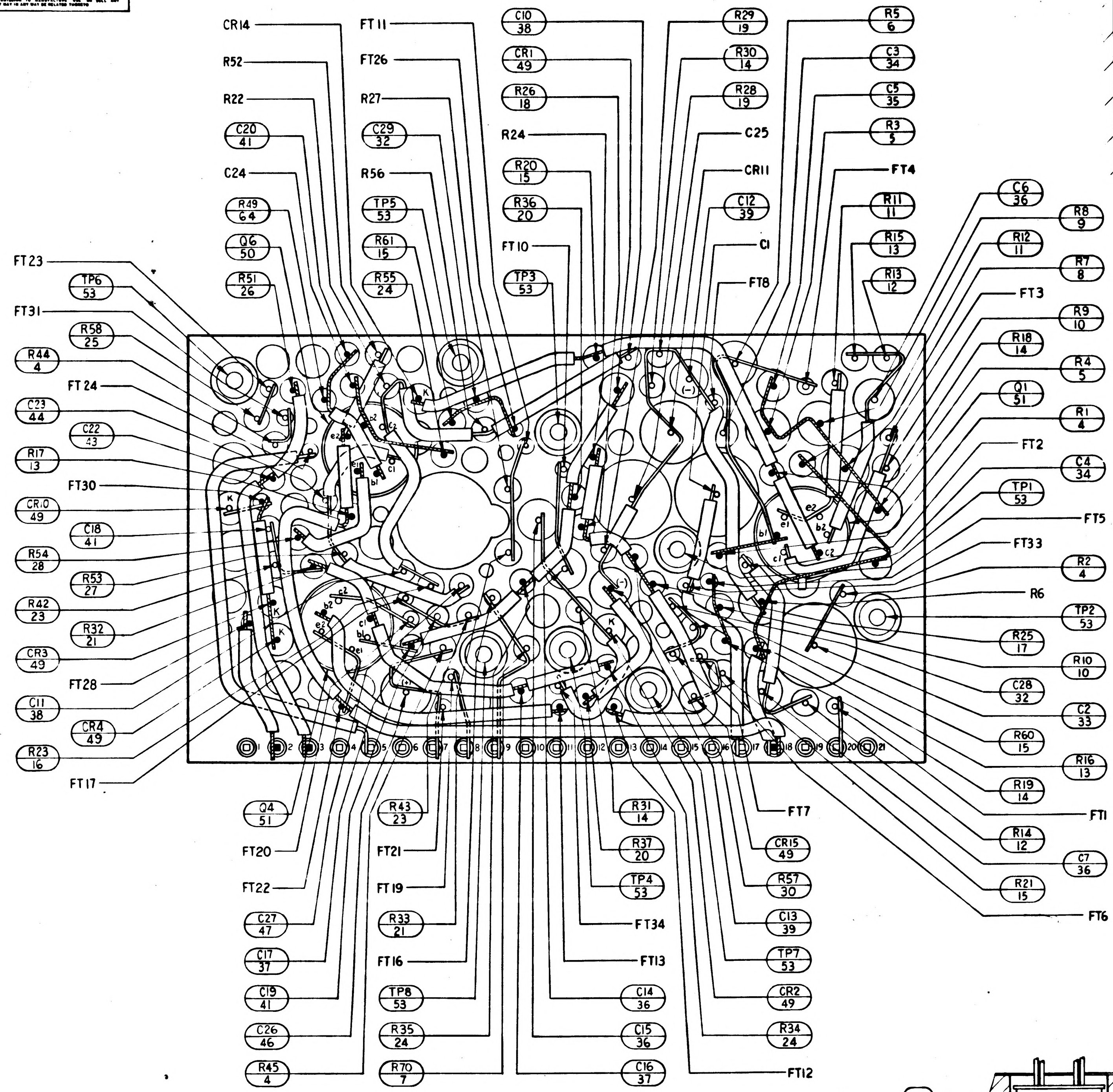
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FT30
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R42 23
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FT28
C11 38
CR4 49
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FT17
FT11
FT26
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R24
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TP3 53
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C1
FT8
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FT4
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C6 36
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FT3
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R6
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C2 33
R60 15
R16 13
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FT1
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C7 36
R21 15
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FT22
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C17 37
C19 41
C26 46
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FT19
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FT16
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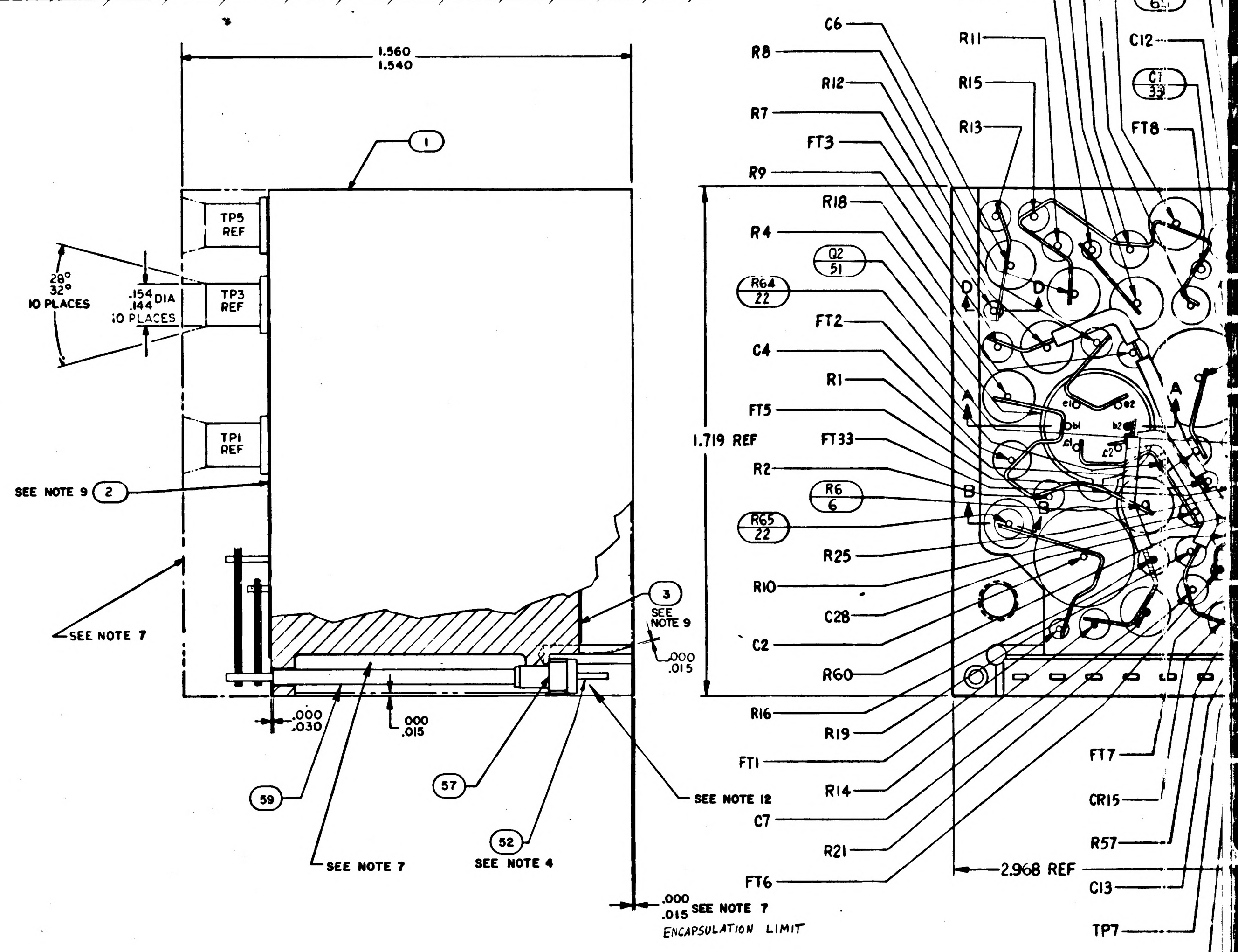
R37 20
TP4 53
FT34
FT13
C14 36
C15 36
C16 37
FT7
CR15 49
R57 30
C13 39
TP7 53
CR2 49
R34 24
FT12

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXT HEATSINK SURF.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEAT SINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE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1
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TP3 REF
TP1 REF
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32°
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.144 DIA
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SEE NOTE 9 2
SEE NOTE 7
3 SEE NOTE 9
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57
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SEE NOTE 4
SEE NOTE 7
SEE NOTE 12
.000
.015 SEE NOTE 7
ENCAPSULATION LIMIT
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2.968 REF
C6
R8
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R18
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R64 22
FT2
C4
R1
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R6 6
R65 22
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C28
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R14
C7
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A
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C3
C5
R3
FT4
R11
R15
R13
R29
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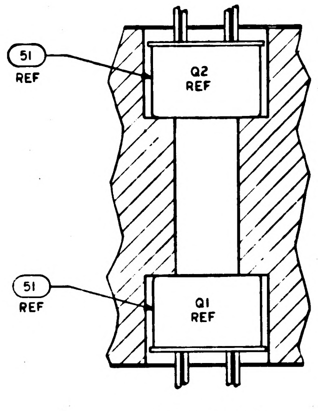
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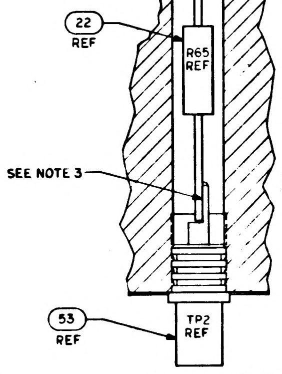
SECTION A-A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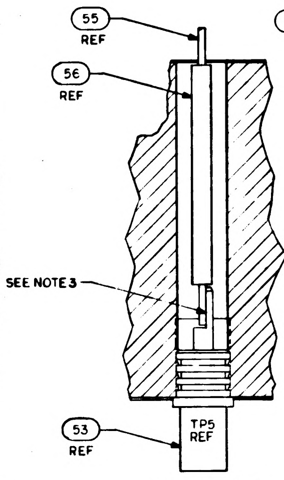
TP2 REF

SECTION B-B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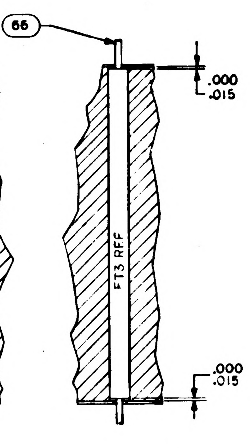
SECTION C-C


66
.000
.015
FT3 REF
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.015

SECTION D-D

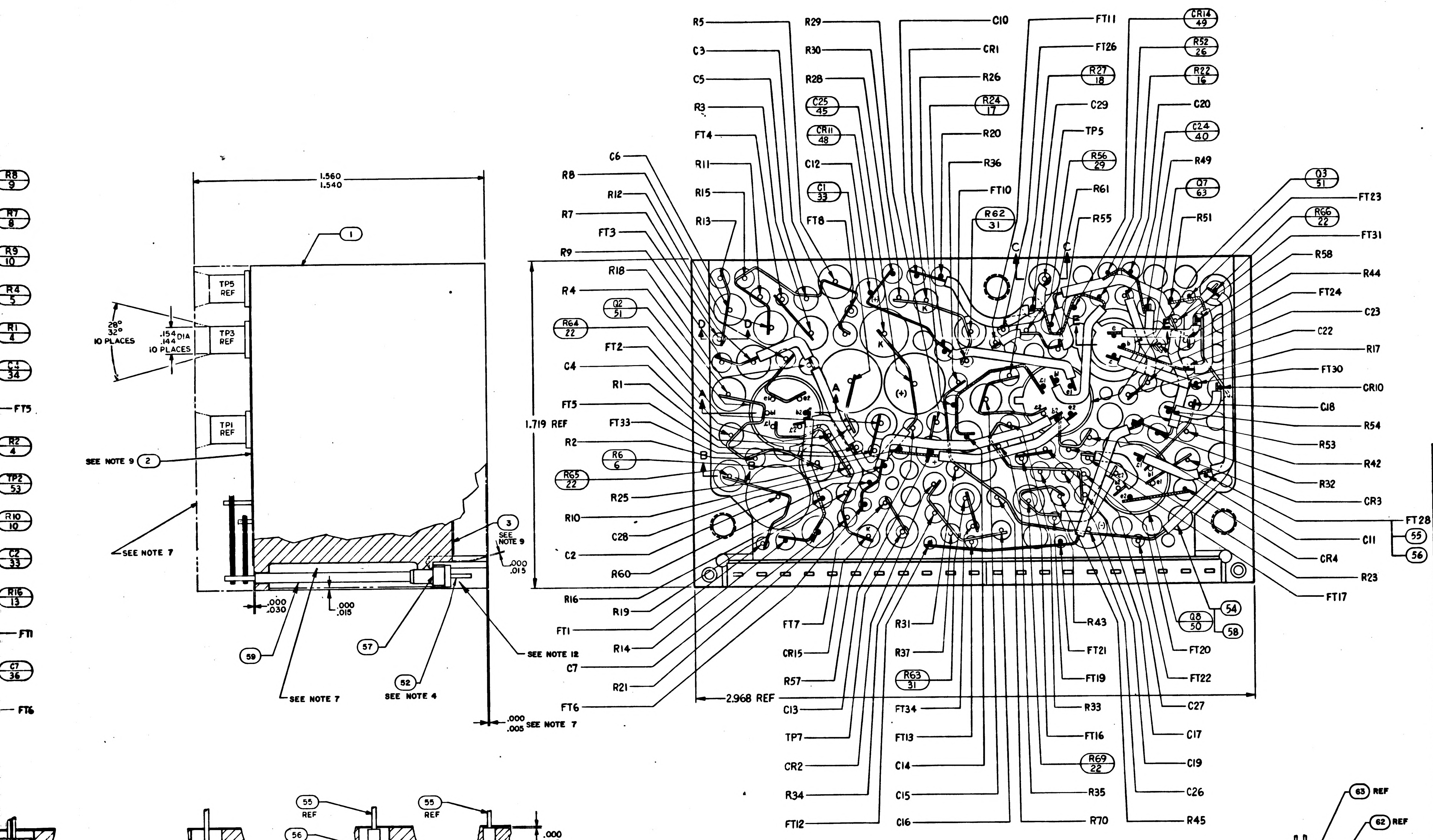
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. STAKE ALL COMPONENTS AND FIND NO 53 PER ND1002009 METHOD J.
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005
4. MUST MEET REQUIREMENTS OF ND 1002136
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
8. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
9. ON ITEMS 2 AND 3
   BROKEN PATHS INDICATE INSULATION SLEEVING,
   K INDICATES CATHODE SIDE OF DIODE,
   FT() INDICATES FEED THRU
   PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   B INDICATES BASE LEAD OF TRANSISTOR,
   E INDICATES EMITTER LEAD OF TRANSISTOR
   C() INDICATES COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B() INDICATES BASE LEAD OF MULTISTAGE TRANSISTOR
   E() INDICATES EMITTER LEAD OF MULTISTAGE TRANSISTOR
10. PROCURE PER PS 1007019
~~11. BOND FIND NO. 60 AND FIND NO. 61 TO FIND NO. 57 PER ND 1002237.~~
12. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069
14. AR DENOTES AS REQUIRED
~~15. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
~~16. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
17. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
~~18. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.~~
18. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
19. MOISTUREPROOF PER ND1002292 AS REQUIRED BY FIND NO. (67) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.

TP CHART

TP	COMPONENT
1	R64
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD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FT1
C7 36
FT6
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1.540
1
TP5 REF
TP3 REF
TP1 REF
28°
32°
10 PLACES
.154 DIA
.144
10 PLACES
SEE NOTE 9
2
SEE NOTE 7
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SEE NOTE 9
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.030
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57
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SEE NOTE 4
SEE NOTE 12
SEE NOTE 7
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SEE NOTE 7
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R4
Q2 51
R64 22
FT2
C4
R1
FT5
FT33
R2
R6 6
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R25
R10
C28
C2
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FT1
R14
C7
R21
FT6
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2.968 REF
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R30
R28
C25 45
CR11 48
C12
C1 33
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C10
CR1
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FT10
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FT11
FT26
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C29
TP5
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R61
R55
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R52 26
R22 16
C20
C24 40
R49
Q7 63
R51
Q3 51
FT23
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R58
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C22
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FT30
CR10
C18
R54
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R42
R32
CR3
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55
56
C11
CR4
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54
Q8 50
58
A
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FT7
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R57
C13
TP7
CR2
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R37
R63 31
FT34
FT13
C14
C15
C16
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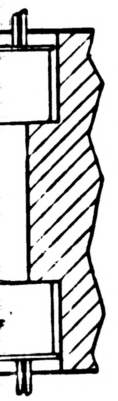
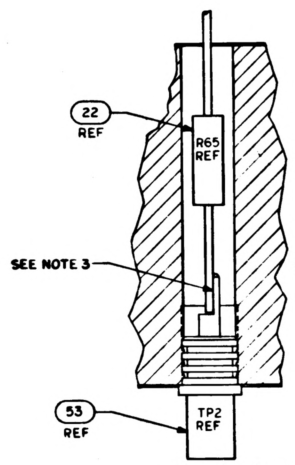
C19
C26
R45



ON A-A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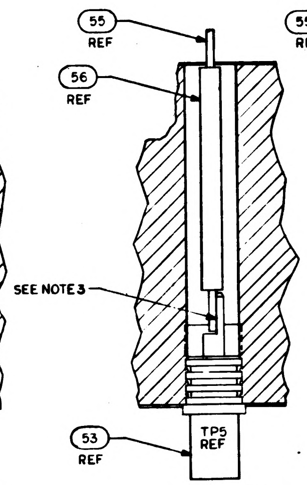
SECTION B-B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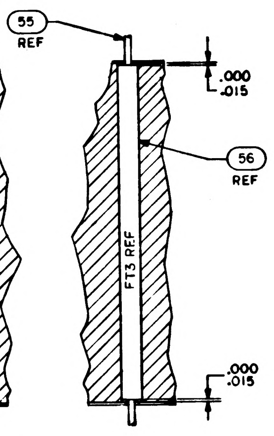
SECTION C-C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SECTION D-D

TP CHART	
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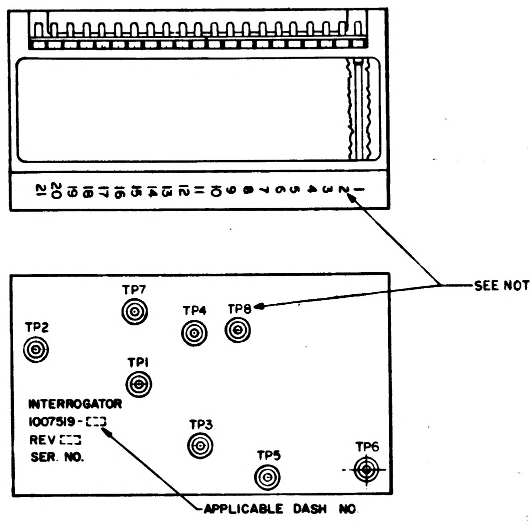
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69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APPLICABLE DASH NO

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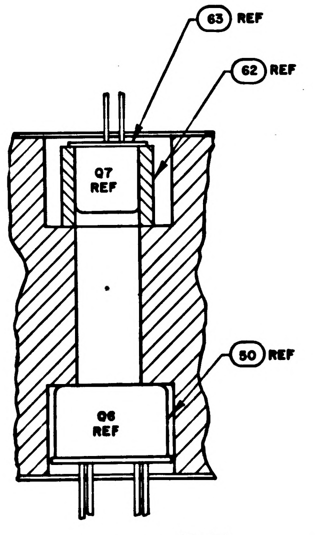
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Q6 REF

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			1		1010675	TRANSISTOR	63
			1		1008025-1	INSULATOR BUSHING	62
			1		1008540-10	GASKET, CONNECTOR MINIATURE	61
			1		1008540-11	GASKET, CONNECTOR MINIATURE	60
			AR		1006776-20	INSULATION SLEEVING	59
			AR		1006776-21	INSULATION SLEEVING	58
			21		1006775	INSULATOR, WRAPOST-MALE, MINAT	57
			AR		1006776-22	INSULATION SLEEVING	56
			AR		1006757-8	WIRE ELEC .020 DIA	55
			AR		1006757-1	WIRE ELEC .010 ± .020	54
			8		1010292-2	TERMINAL FEED THRU INSULATED	53
			21		1006782-4	CONTACT, WRAPOST-MALE, MINAT	52
			4		1010376-1	TRANSISTOR	51
			2		1010395	TRANSISTOR	50
			7		1010385	DIODE	49
			1		1010286-9	DIODE	48
			1		1006777-19	CAPACITOR, CER	47
			1		1006755-79	CAPACITOR, TANT	46
			1		1006755-83	CAPACITOR, TANT	45
			1		1006777-8	CAPACITOR, CER	44
			1		1006777-13	CAPACITOR, CER	43
							42
			3		1006777-12	CAPACITOR, CER	41
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			2		1006755-69	CAPACITOR, TANT	39
			2		1006777-5	CAPACITOR, CER	38
			2		1006777-7	CAPACITOR, CER	37
			4		1006777-31	CAPACITOR, CER	36
			1		1006777-28	CAPACITOR, CER	35
			2		1006777-27	CAPACITOR, CER	34
			2		1010264-23	CAPACITOR, MYLAR	33
			2		1006777-3	CAPACITOR, CER	32
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			2		1006750-36	RESISTOR, FIXED FILM	26
			1		1006750-48	RESISTOR, FIXED FILM	25
			3		1006750-60	RESISTOR, FIXED FILM	24
			2		1006750-66	RESISTOR, FIXED FILM	23
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1007573		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
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TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
Contract NAS 9-497
DRAWN Splene DATE 2 oct 64
CHECKED A. Udovich 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL W. J. Rhine 12-8-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INTERROGATOR
ASSEMBLY

CODE IDENT NO. | SIZE J | NASA DRAWING NO. 1007519
SCALE 5/1 | WT | SHEET 1 OF 1

1007519

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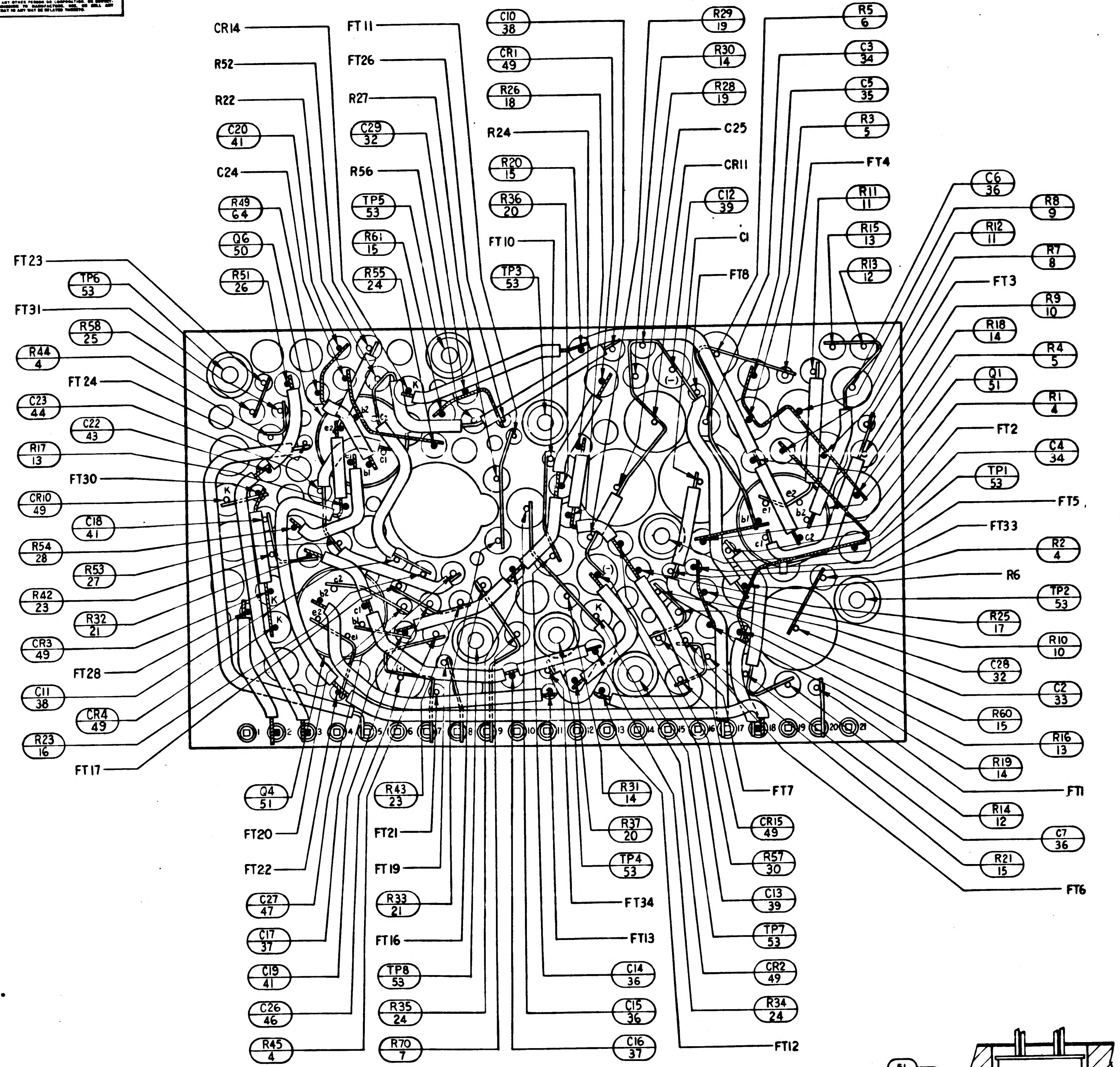
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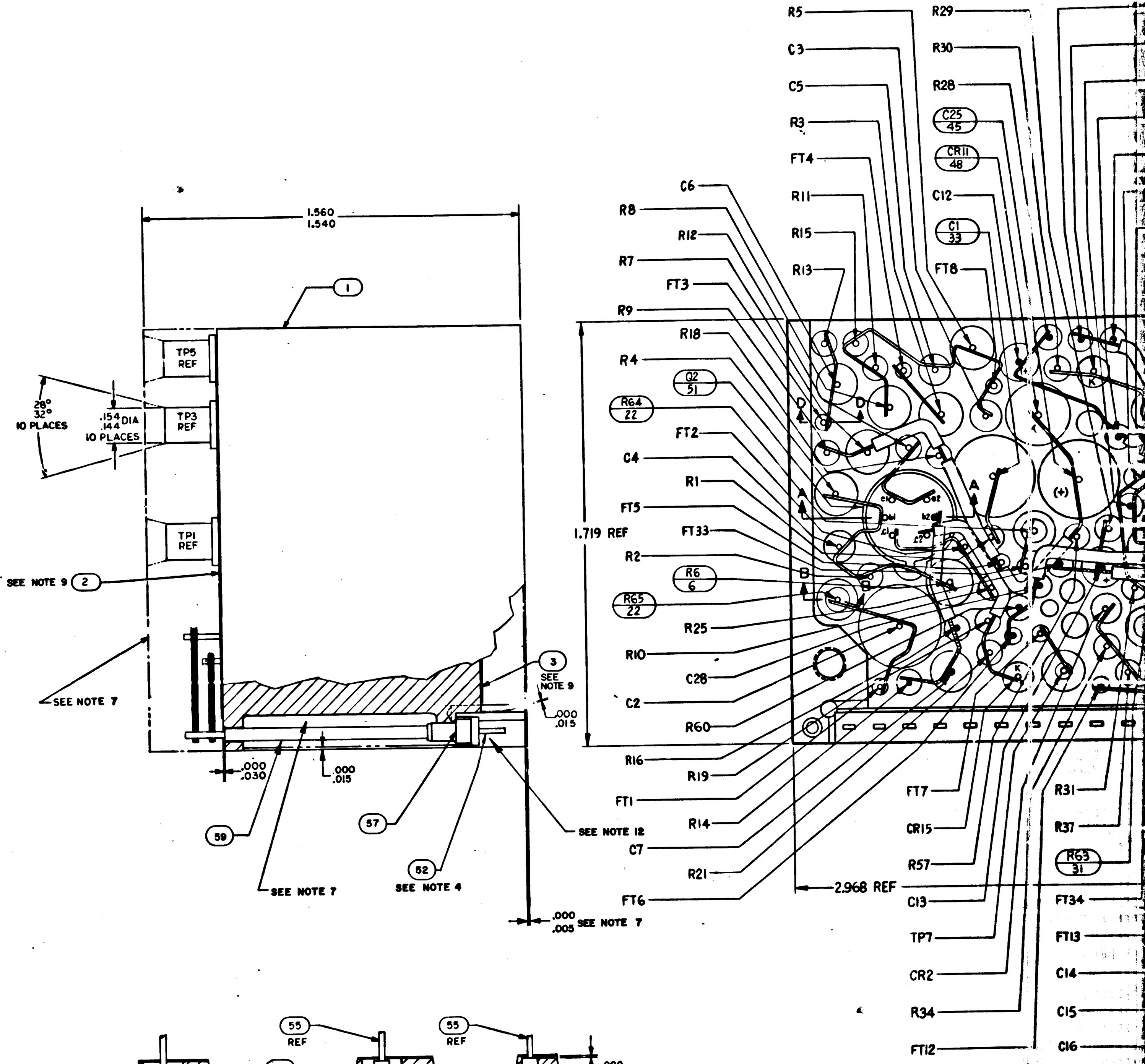
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C3
C5
R3
FT4
R11
R15
R13
R29
R30
R28
C25 45
CR11 48
C12
C1 33
FT8
C6
R8
R12
R7
FT3
R9
R18
R4
Q2 51
R64 22
FT2
C4
R1
FT5
FT33
R2
R6 6
R65 22
R25
R10
C28
C2
R60
R16
FT1
R19
R14
C7
R21
FT6
FT7
CR15
R57
C13
TP7
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K
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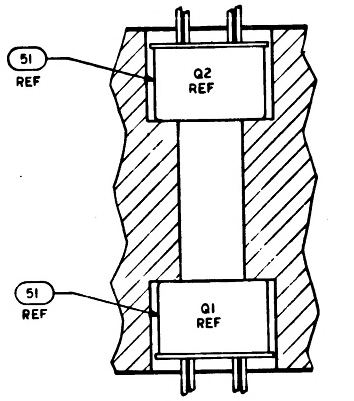
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Q1
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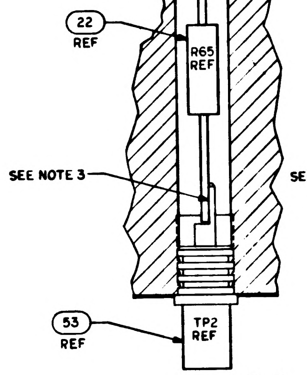
SECTION A-A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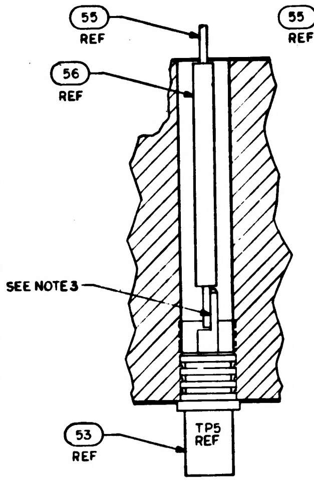
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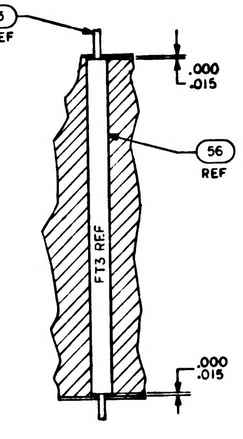
SECTION C-C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FT3 REF
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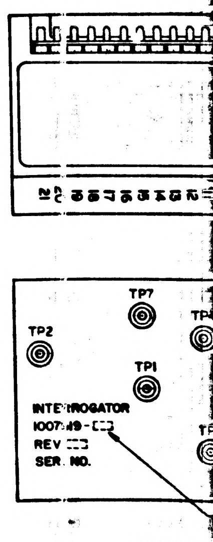
SECTION D-D

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. STAKE ALL COMPONENTS AND FIND NO.53 PER ND1002009 METHOD C
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005
4. MUST MEET REQUIREMENTS OF ND 1002136
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
8. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
9. ON ITEMS 2 AND 3
   BROKEN PATHS INDICATE INSULATION SLEEVING,
   K INDICATES CATHODE SIDE OF DIODE,
   FT() INDICATES FEED THRU
   PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   B INDICATES BASE LEAD OF TRANSISTOR,
   E INDICATES EMITTER LEAD OF TRANSISTOR
   C() INDICATES COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B() INDICATES BASE LEAD OF MULTISTAGE TRANSISTOR
   E() INDICATES EMITTER LEAD OF MULTISTAGE TRANSISTOR
10. PROCURE PER PS 1007019
11. BOND FIND NO. 60 AND FIND NO. 61 TO FIND NO. 57 PER ND 1002237.
12. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069
14. AR DENOTES AS REQUIRED

TP CHART

TP	COMPONENT
1	R64
2	R65
3	R62
4	R63
5	FIND 55 & 56
6	R66
7	FIND 55 & 56
8	R69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TP7
TP1
INTERROGATOR
1007549-
REV
SER. NO.

MARKIN
SCAL

REVISIONS 14702					
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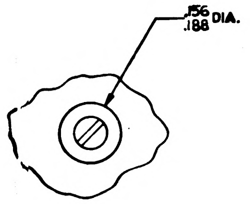
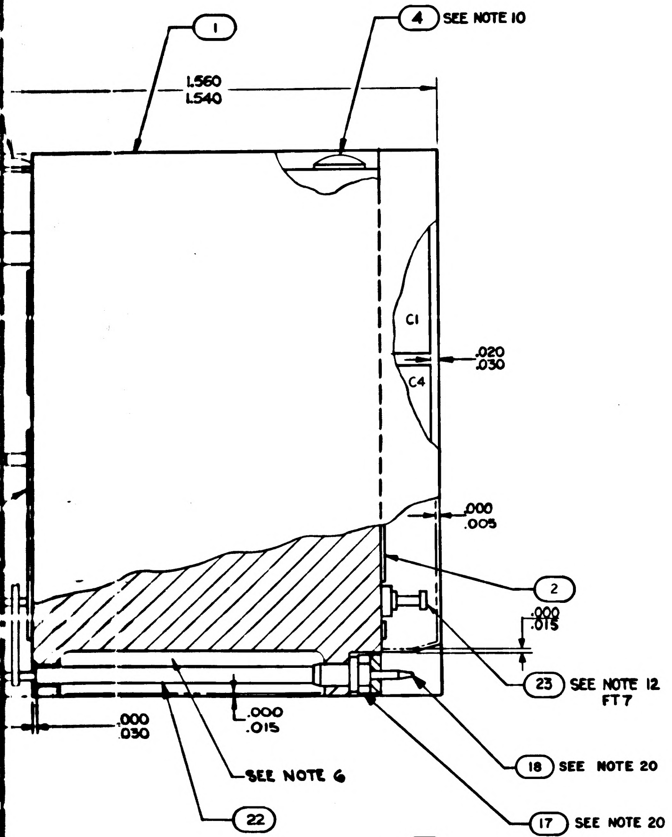


VIEW B-B
2 PLACES
SEE NOTE 14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SEE NOTE 6
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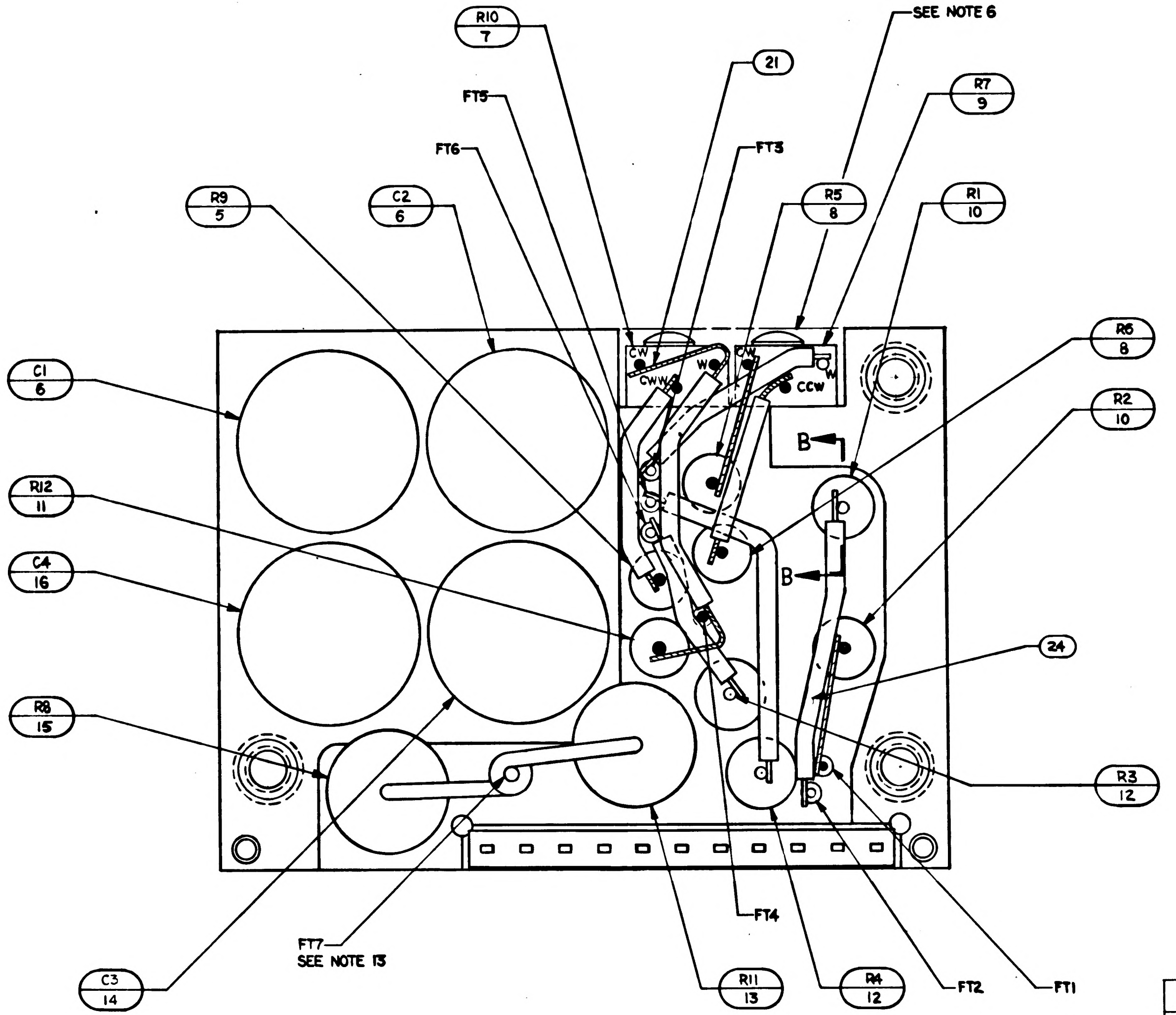
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CCW
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R6
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C1
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R2
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B
B
R12
11
C4
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R4
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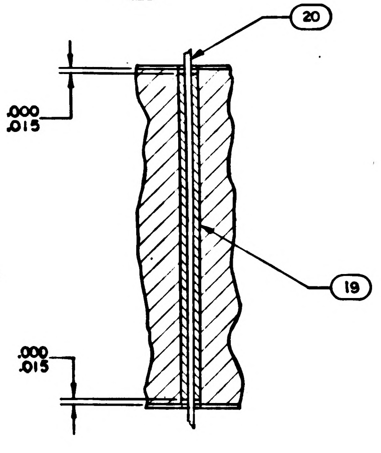
FT2
FT1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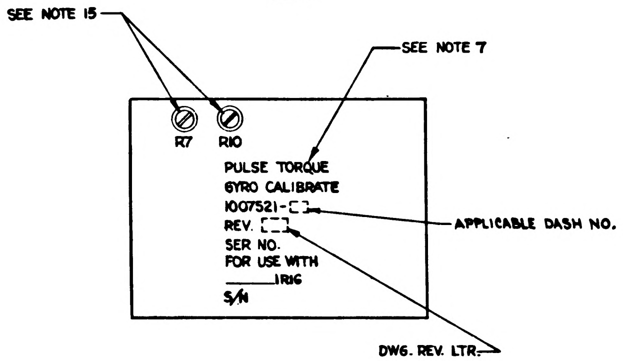
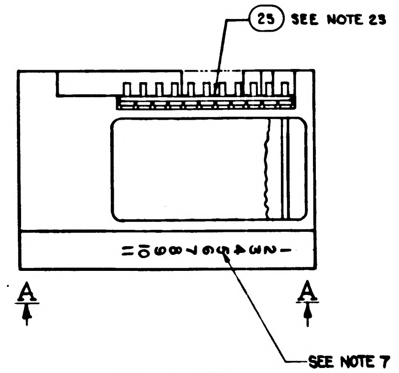
SECTION A-A


SEE NOTE 15
SEE NOTE 7
R7
R10
PULSE TORQUE
GYRO CALIBRATE
1007521-[ ]
REV. [ ]
SER NO.
FOR USE WITH
______IRIG
S/N
APPLICABLE DASH NO.
DWG. REV. LTR.

VIEW A-A


25 SEE NOTE 23
A
A
SEE NOTE 7

MARKING VIEW
SCALE 2/1

CHART B

PART NO	VALUE	PART NO	VALUE
1010377-337	82.5K	1010377-281	53K
-338	83.75K	-282	64K
-339	85.0K	-283	73K
-344	86.25K	-284	127K
-2	87.5K	-285	136K
-3	88.75K	-286	145K
-4	90.0K	-287	154K
-5	91.25K	-288	163K
-6	92.5K	-289	172K
-7	93.75K	-290	181K
-8	95.0K	-291	190K
-9	96.25K	-292	199K
-10	97.5K	-293	208K
-11	98.75K	-294	217K
-12	100.0K	-295	226K
-13	101.25K	-296	235K
-14	102.5K	-297	244K
-15	103.75K	-298	253K
-16	105.0K	-299	262K
-17	106.25K	-300	271K
-18	107.5K		
-19	108.75K		
-20	110.0K		
-21	111.25K		
-22	112.5K		
-340	113.75K		
-341	115.0K		
-342	116.25K		
-343	117.5K		

— 021 CONFIGURATION

CHART F

PART NO.	VALUE	PART NO.	VALUE
1010377-76	82.5K	1010377-281	53K
-77	83.75K	-282	64K
-78	85.0K	-283	73K
-79	86.25K	-284	127K
-80	87.5K	-285	136K
-81	88.75K	-286	145K
-82	90.0K	-287	154K
-83	91.25K	-288	163K
-84	92.5K	-289	172K
-85	93.75K	-290	181K
-86	95.0K	-291	190K
-87	96.25K	-292	199K
-88	97.5K	-293	208K
-89	98.75K	-294	217K
-90	100.0K	-295	226K
-91	101.25K	-296	235K
-92	102.5K	-297	244K
-93	103.75K	-298	253K
-94	105.0K	-299	262K
-95	106.25K	-300	271K
-96	107.5K		
-97	108.75K		
-98	110.0K		
-99	111.25K		
-100	112.5K		
-101	113.75K		
-102	115.0K		
-103	116.25K		
-104	117.5K		

— 011 CONFIGURATION

CHART E

PART NO	VALUE
1010373-9	5K
1010373-10	10K

CHART C

PART NO.	VALUE
1010283-12	25.13K
-13	12.56K
-14	8.38K
-15	6.28K
-16	5.03K

CHART D

PART NO.	VALUE Ω
1010253 -13	49.001
-14	49.581
-15	50.175
-16	50.784
-17	51.407
-18	52.046
-19	52.701
-20	53.373
-21	54.062
-22	54.772

CHART A

PART NO.	VALUE UF
1010289-019	0.0350
1010289-020	0.0375
1010289-021	0.0400
1010289-022	0.0425
1010289-023	0.0450
1010289-024	0.0475
1010289-025	0.0500
1010289-026	0.0525
1010289-027	0.0550
1010289-028	0.0575
1010289-029	0.0600
1010289-030	0.0625
1010289-031	0.0650
1010289-032	0.0675
1010289-033	0.0700
1010289-034	0.0725
1010289-035	0.0750
1010289-036	0.0775
1010289-016	0.0220
1010289-017	0.0228
1010289-018	0.0330

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		—	☒		1010011	SCHEMATIC	REF
		1	1		1008540-11	GASKET, CONNECTOR-MINIATURE	25
		☒	—		1009542	SCHEMATIC	REF
		AR	AR		1006776-21	INSULATION, SLEEVING	24
		1	1		1006784-6	TERMINAL, FEEDTHRU, INSULATED	23
		AR	AR		1006776-20	INSULATION, SLEEVING	22
		AR	AR		1006757-1	WIRE, ELEC .010 X .020	21
		AR	AR		1006757-8	WIRE, ELEC .020 DIA	20
		AR	AR		1006776-22	INSULATION, SLEEVING	19
		11	11		1006782-4	CONTACT, WRAPOST, MALE MIN	18
		11	11		1006775	INSULATOR, WRAPOST, MALE, MIN	17
		1	1		SEE NOTE 16	CAPACITOR, .0220 UF-.0775UF 200V ±1%	16
		1	1		1010253-12	RESISTOR, FXD, WW 10Ω 1W ±.01%	15
		1	1		SEE NOTE 16	CAPACITOR, .0220 UF-.0775UF 200V ±1%	14
		1	1		SEE NOTE 19	RESISTOR, FXD, WW 1W ±.01%	13
		2	2		1010389-93	RESISTOR, FXD, WW 600 Ω 3W ±1%	12
		1	1		SEE NOTE 18	RESISTOR, FXD, WW 1/10W ±.1%	11
		2	2		1010262-1	RESISTOR, FXD, WW 525 Ω 10W ±1%	10
		1	1		SEE NOTE 21	RESISTOR, VAR, 1W ±5%	9
		2	2		SEE NOTE 17	RESISTOR, FXD, WW 1/10W	8
		1	1		1010373-8	RESISTOR, VAR, 2 K 1W ±5%	7
		2	2		1010289-036	CAPACITOR, POLY, .0775UF 200V ±.5%	6
		1	1		1010283-17	RESISTOR, FXD, WW 5.1K 1/10W ±.1%	5
		4	4		1000093-3	SCREW, BUTTON HD	4
		1	1		1008023-1	INSULATOR	3
		1	1		1008023-2	INSULATOR	2
		1	1		1007020	HEATSINK	1

QUANTITY REQUIRED
LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. Contract NAS 9-497
DRAWN S Agne DATE 9 SEP 64
CHECKED R Udovich 15 SEP 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 12-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

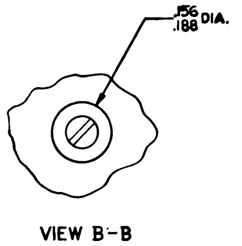
PULSE TORQUE
GYRO CALIBRATE
ASSEMBLY

CODE IDENT NO.
SIZE J
NASA DRAWING NO. 1007521
SCALE 5/1 WT SHEET 1 OF 1

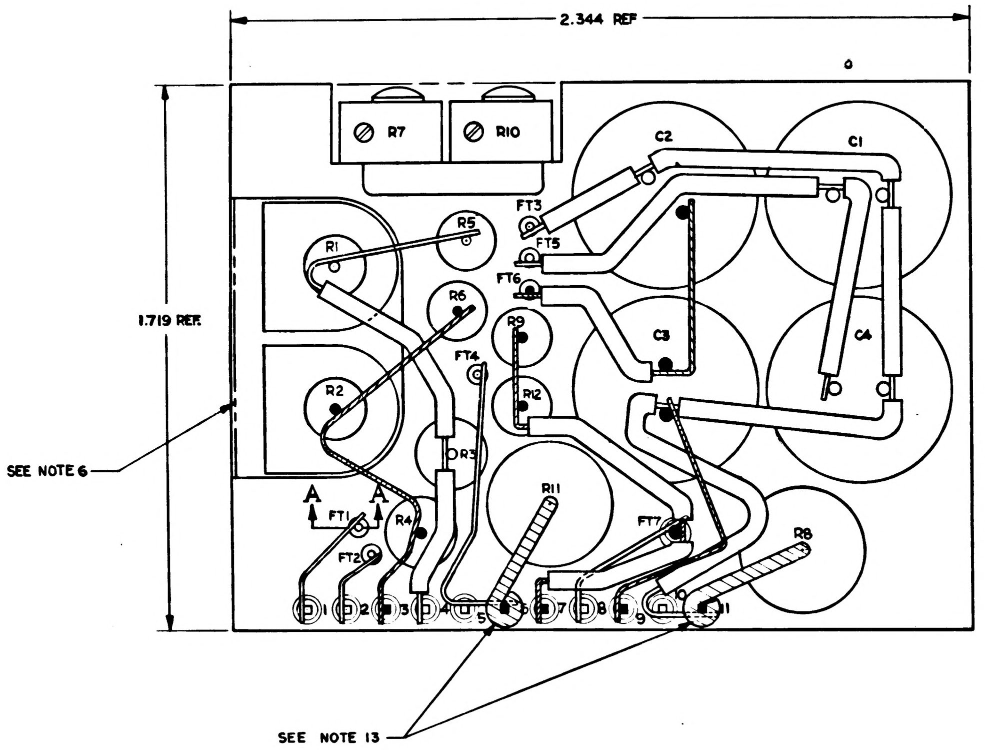
1007521 A

2/1007521

NOTICE — WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO



VIEW B-B
2 PLACES
SEE NOTE 14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R8
R9
R11
R12
FT1
FT2
FT3
FT4
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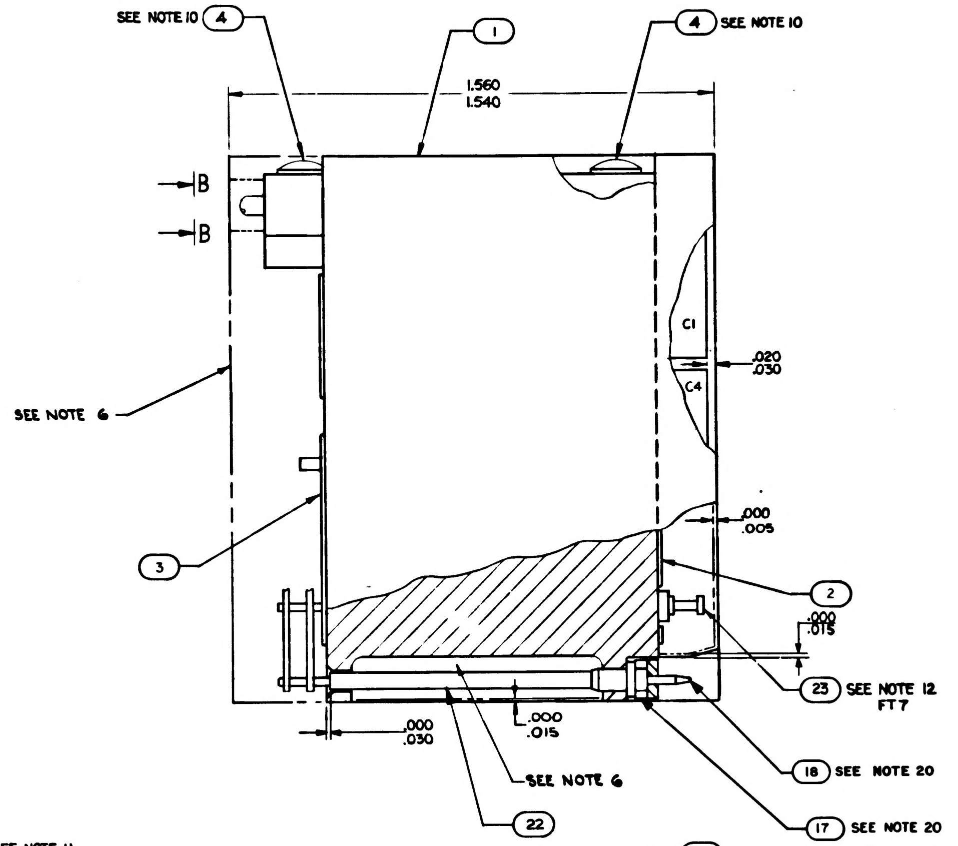
SEE NOTE 6
SEE NOTE 13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C4
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.005
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SEE NOTE 6
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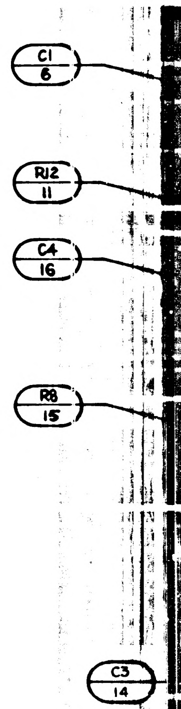
SEE NOTE 20
22
17
SEE NOTE 20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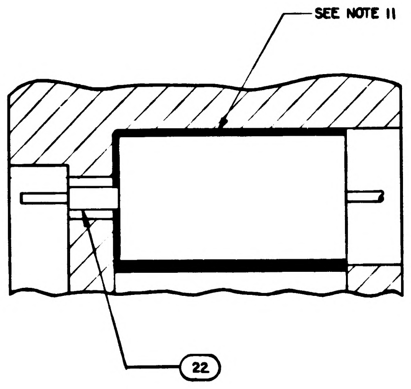
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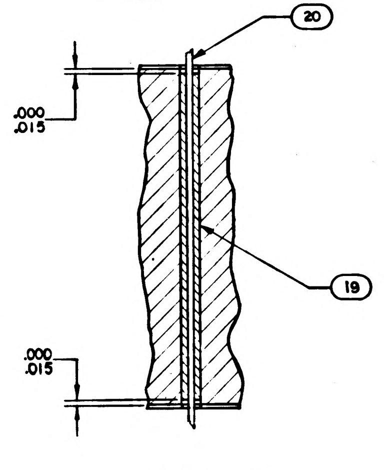
SECTION B-B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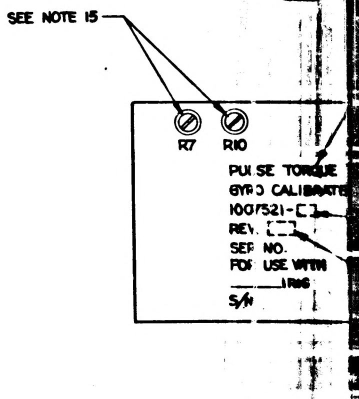
SECTION A-A


SEE NOTE 15
R7
R10
PULSE TORQUE
GYRO CALIBRATE
1007521-[ ]
REV. [ ]
SER NO.
FOR USE WITH
IRIG
S/N

VIEW A-A

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005 EXCEPT WHERE SHOWN.
3. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
4. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
5. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
6. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) USING CURING CYCLE NO.2. UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
7. MARK PIN NUMBERS .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
8. STAKE FIND NO.5 THRU FIND NO.8 AND FIND NO.10 THRU FIND NO.16 PER ND 1002009 METHOD C & CENTRALIZE
9. ON FIND NO.2 AND FIND NO. 3 FT( ) INDICATES FEEDTHRU.
10. APPLY ZINC CHROMATE PRIMER, MIL-P-8585 PER MIL-P-6808 (AS6) TO THREADS OF FIND NO.4.
11. BOND FIND NO.10 PER ND1002117.
12. CUT FIND NO. 23 AT TOP OF TURRET.
13. SOLDER PER ND 1002071.
14. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND.
15. AFTER FINAL SYSTEM LEVEL ADJUSTMENT, SEAL ADJUSTING SCREWS PER ND 1002009 METHOD C
16. C3 AND C4 TO BE SELECTED FROM CHART "A" PER ATP-1007021.
17. R5 AND R6 TO BE SELECTED FROM CHART "B" OR CHART "F" PER ATP 1007021
18. R12 TO BE SELECTED FROM CHART "C" PER ATP-1007021.
19. R11 TO BE SELECTED FROM CHART "D" PER ATP-1007021.
20. MUST MEET REQUIREMENTS OF ND1002136
21. R7 TO BE SELECTED FROM CHART "E" PER ATP-1007021.
22. PROCURE PER PS 1007021.
23. BOND FIND NO. 23 TO FIND NO.17 PER ND1002237
24. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.

REVISIONS 14702					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
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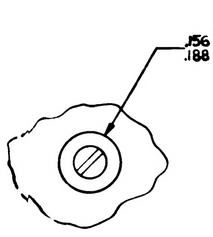
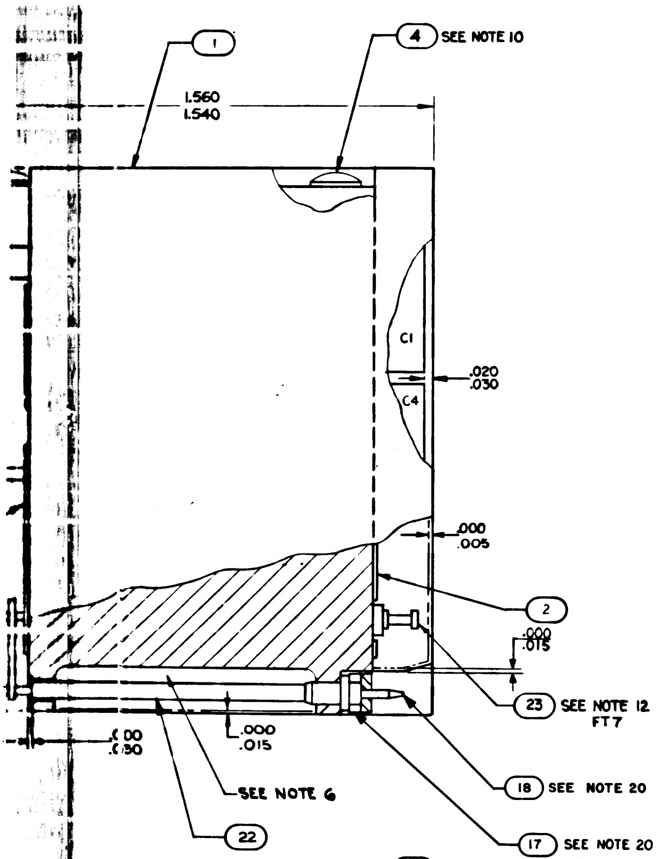
B		REVISED PER TDRR 19451		2 JUN 65	J.K.



VIEW B-B
2 PLACES
SEE NOTE 14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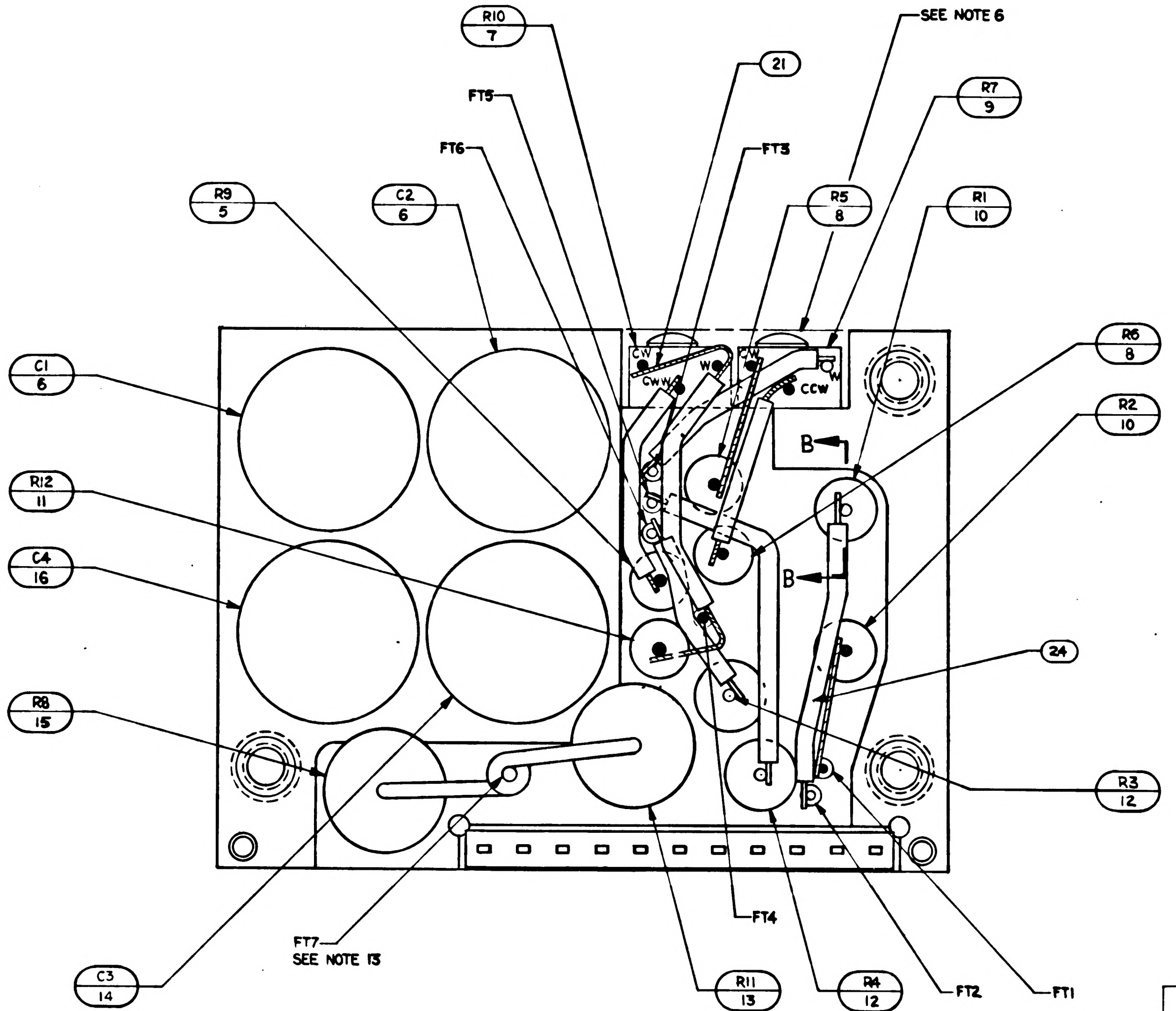
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FT7
SEE NOTE 13
C3
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FT4
R11
13
R4
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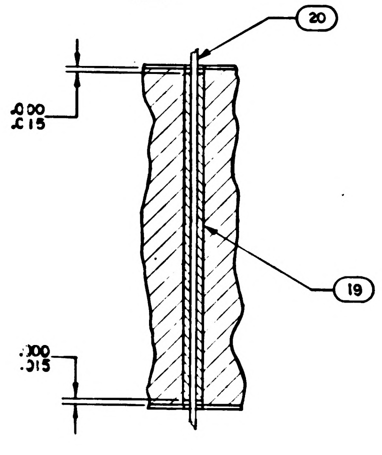
FT2
FT1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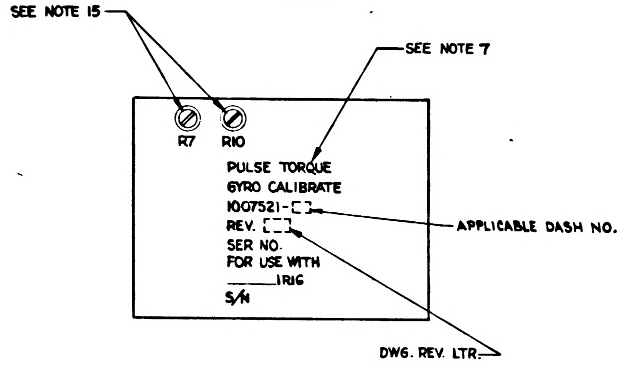
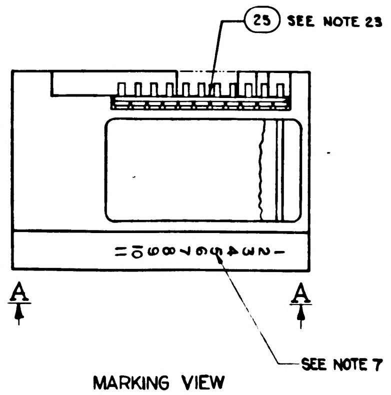
.015
19
.000
.015

SECTION A-A


SEE NOTE 15
SEE NOTE 7
R7
R10
PULSE TORQUE
GYRO CALIBRATE
1007521-[ ]
REV. [ ]
SER NO.
FOR USE WITH
____IRIG
S/N
APPLICABLE DASH NO.
DWG. REV. LTR.

VIEW A-A


25 SEE NOTE 23
A
A
SEE NOTE 7

MARKING VIEW
SCALE 2/1

CHART B			
PART NO	VALUE	PART NO	VALUE
1010377-337	82.5K	1010377-281	53K
-338	83.75K	-282	64K
-339	85.0K	-283	73K
-344	86.25K	-284	127K
-2	87.5K	-285	136K
-3	88.75K	-286	145K
-4	90.0K	-287	154K
-5	91.25K	-288	163K
-6	92.5K	-289	172K
-7	93.75K	-290	181K
-8	95.0K	-291	190K
-9	96.25K	-292	199K
-10	97.5K	-293	208K
-11	98.75K	-294	217K
-12	100.0K	-295	226K
-13	101.25K	-296	235K
-14	102.5K	-297	244K
-15	103.75K	-298	253K
-16	105.0K	-299	262K
-17	106.25K	-300	271K
-18	107.5K		
-19	108.75K		
-20	110.0K		
-21	111.25K		
-22	112.5K		
-340	113.75K		
-341	115.0K		
-342	116.25K		
-343	117.5K		

— 021 CONFIGURATION

CHART F			
PART NO.	VALUE	PART NO.	VALUE
1010377-76	82.5K	1010377-281	53K
-77	83.75K	-282	64K
-78	85.0K	-283	73K
-79	86.25K	-284	127K
-80	87.5K	-285	136K
-81	88.75K	-286	145K
-82	90.0K	-287	154K
-83	91.25K	-288	163K
-84	92.5K	-289	172K
-85	93.75K	-290	181K
-86	95.0K	-291	190K
-87	96.25K	-292	199K
-88	97.5K	-293	208K
-89	98.75K	-294	217K
-90	100.0K	-295	226K
-91	101.25K	-296	235K
-92	102.5K	-297	244K
-93	103.75K	-298	253K
-94	105.0K	-299	262K
-95	106.25K	-300	271K
-96	107.5K		
-97	108.75K		
-98	110.0K		
-99	111.25K		
-100	112.5K		
-101	113.75K		
-102	115.0K		
-103	116.25K		
-104	117.5K		

— 011 CONFIGURATION

CHART E	
PART NO	VALUE
1010373-9	5K
1010373-10	10K

CHART C	
PART NO.	VALUE
1010283-12	25.13K
-13	12.56K
-14	8.38K
-15	6.28K
-16	5.03K

CHART D	
PART NO.	VALUE Ω
1010253 -13	49.001
-14	49.581
-15	50.175
-16	50.784
-17	51.407
-18	52.046
-19	52.701
-20	53.373
-21	54.062
-22	54.772

CHART A	
PART NO.	VALUE UF
1010289-019	0.0350
1010289-020	0.0375
1010289-021	0.0400
1010289-022	0.0425
1010289-023	0.0450
1010289-024	0.0475
1010289-025	0.0500
1010289-026	0.0525
1010289-027	0.0550
1010289-028	0.0575
1010289-029	0.0600
1010289-030	0.0625
1010289-031	0.0650
1010289-032	0.0675
1010289-033	0.0700
1010289-034	0.0725
1010289-035	0.0750
1010289-036	0.0775
1010289-016	0.0220
1010289-017	0.0228
1010289-018	0.0330

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		—	☒		1010011	SCHEMATIC	REF
		1	1		1008540-11	GASKET, CONNECTOR-MINIATURE	25
		☒	—		1009542	SCHEMATIC	REF
		AR	AR		1006776-21	INSULATION, SLEEVING	24
		1	1		1006784-6	TERMINAL, FEEDTHRU, INSULATED	23
		AR	AR		1006776-20	INSULATION, SLEEVING	22
		AR	AR		1006757-1	WIRE, ELEC .010 X .020	21
		AR	AR		1006757-8	WIRE, ELEC .020 DIA	20
		AR	AR		1006776-22	INSULATION, SLEEVING	19
		11	11		1006782-4	CONTACT, WRAPOST, MALE MIN	18
		11	11		1006775	INSULATOR, WRAPOST, MALE, MIN	17
		1	1		SEE NOTE 16	CAPACITOR, .0220 UF-.0775UF 200V ±1%	16
		1	1		1010253-12	RESISTOR, FXD, WW 10Ω 1W ±.01%	15
		1	1		SEE NOTE 16	CAPACITOR, .0220 UF-.0775UF 200V ±1%	14
		1	1		SEE NOTE 19	RESISTOR, FXD, WW 1W ±.01%	13
		2	2		1010389-93	RESISTOR, FXD, WW 600Ω 3W ±1%	12
		1	1		SEE NOTE 18	RESISTOR, FXD, WW 1/10W ±.1%	11
		2	2		1010262-1	RESISTOR, FXD, WW 525Ω 10W ±1%	10
		1	1		SEE NOTE 21	RESISTOR, VAR, 1W ±5%	9
		2	2		SEE NOTE 17	RESISTOR, FXD, WW 1/10W	8
		1	1		1010373-8	RESISTOR, VAR, 2K 1W ±5%	7
		2	2		1010289-036	CAPACITOR, POLY, .0775UF 200V ±.5%	6
		1	1		1010283-17	RESISTOR, FXD, WW5.1K 1/10W ±.1%	5
		4	4		1000093-3	SCREW, BUTTON HD	4
		1	1		1008023-1	INSULATOR	3
		1	1		1008023-2	INSULATOR	2
		1	1		1007020	HEATSINK	1
QUANTITY REQUIRED					LIST OF MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ± .02 XXX ± .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN S Agne DATE 9 SEP 64
CHECKED R Aldrich 15 SEP 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PULSE TORQUE
GYRO CALIBRATE
ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007521
SCALE 5/1
WT
SHEET 1 OF 1

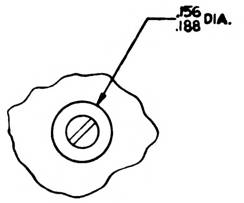
1007521 B

2/1007521

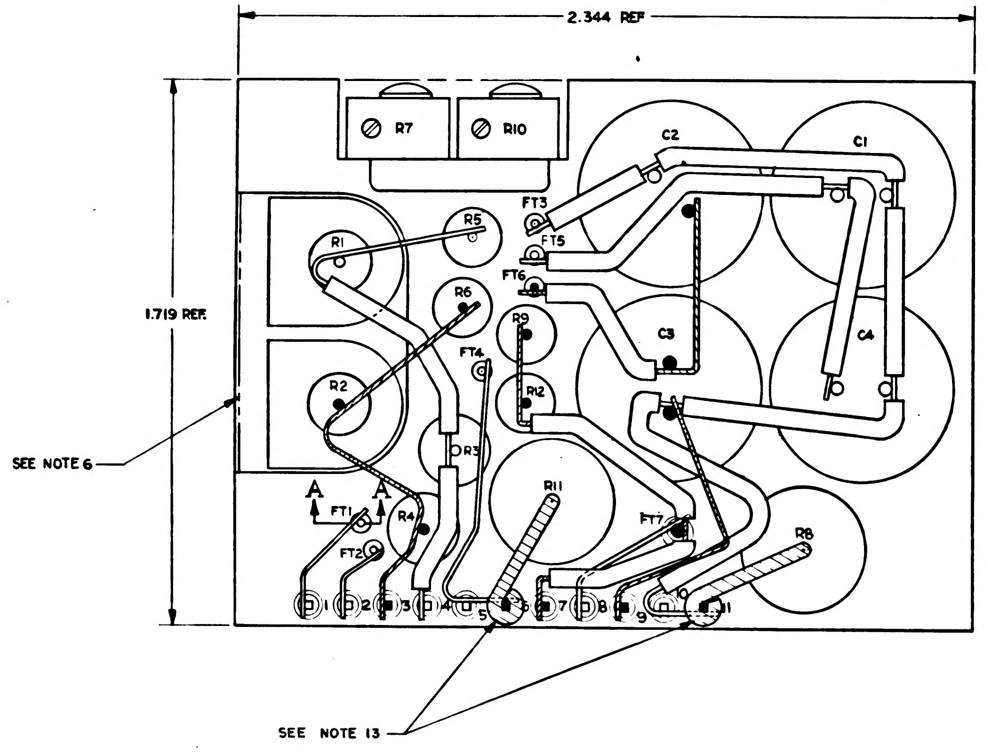
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEAT-SINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE



VIEW B-B
2 PLACES
SEE NOTE 14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R10
C2
C1
R5
R1
FT3
FT5
FT6
R6
R9
C3
C4
R2
FT4
R12
R3
R11
A
A
FT1
FT2
R4
FT7
R8
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2
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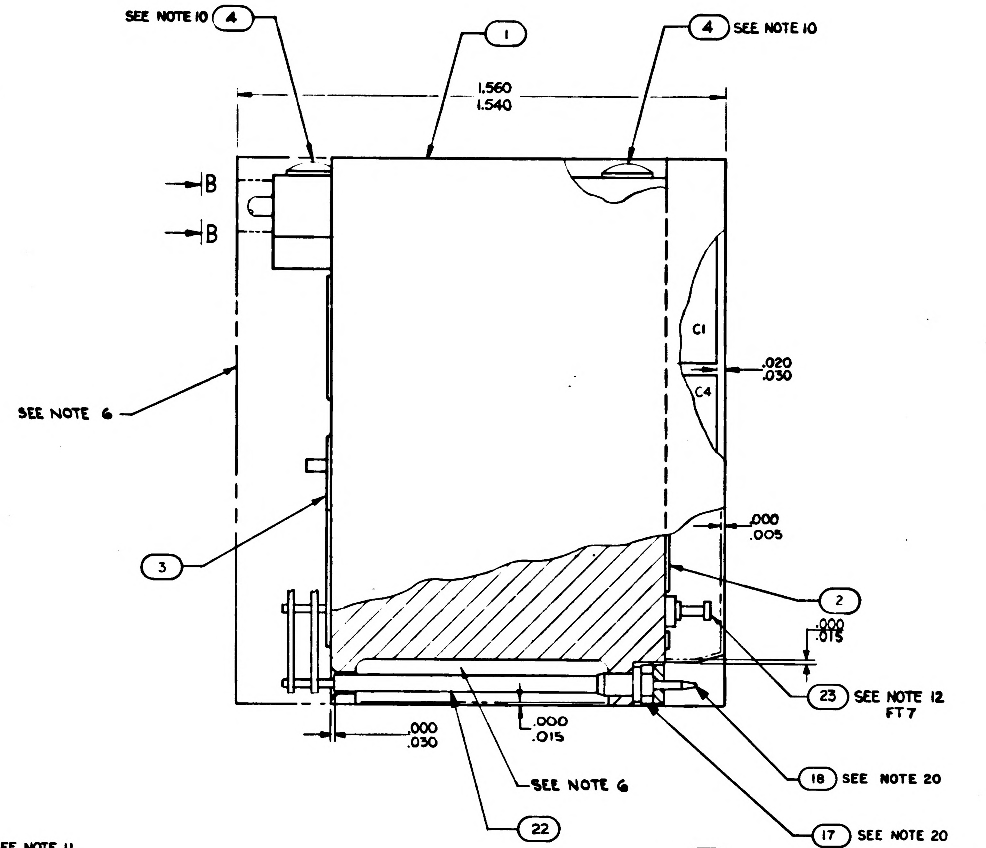
7
8
9
10
11
SEE NOTE 6
SEE NOTE 13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1
4
SEE NOTE 10
1.560
1.540
B
B
C1
C4
.020
.030
SEE NOTE 6
3
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.005
2
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SEE NOTE 12
FT7
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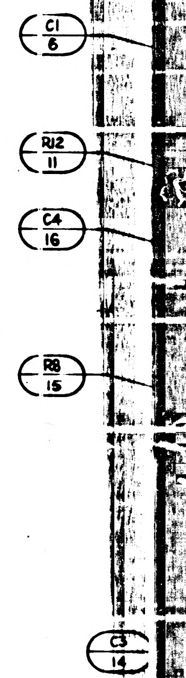
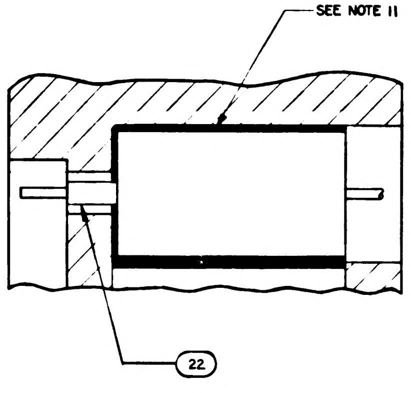
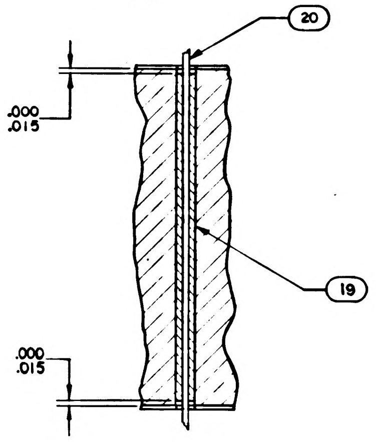
.030
.000
.015
SEE NOTE 6
18
SEE NOTE 20
22
17
SEE NOTE 20


C1
6
R12
11
C4
16
R8
15


SEE NOTE 11
22

SECTION B-B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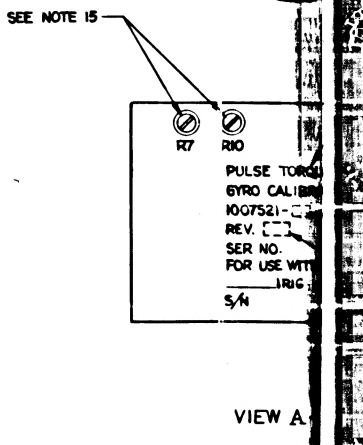
SECTION A-A

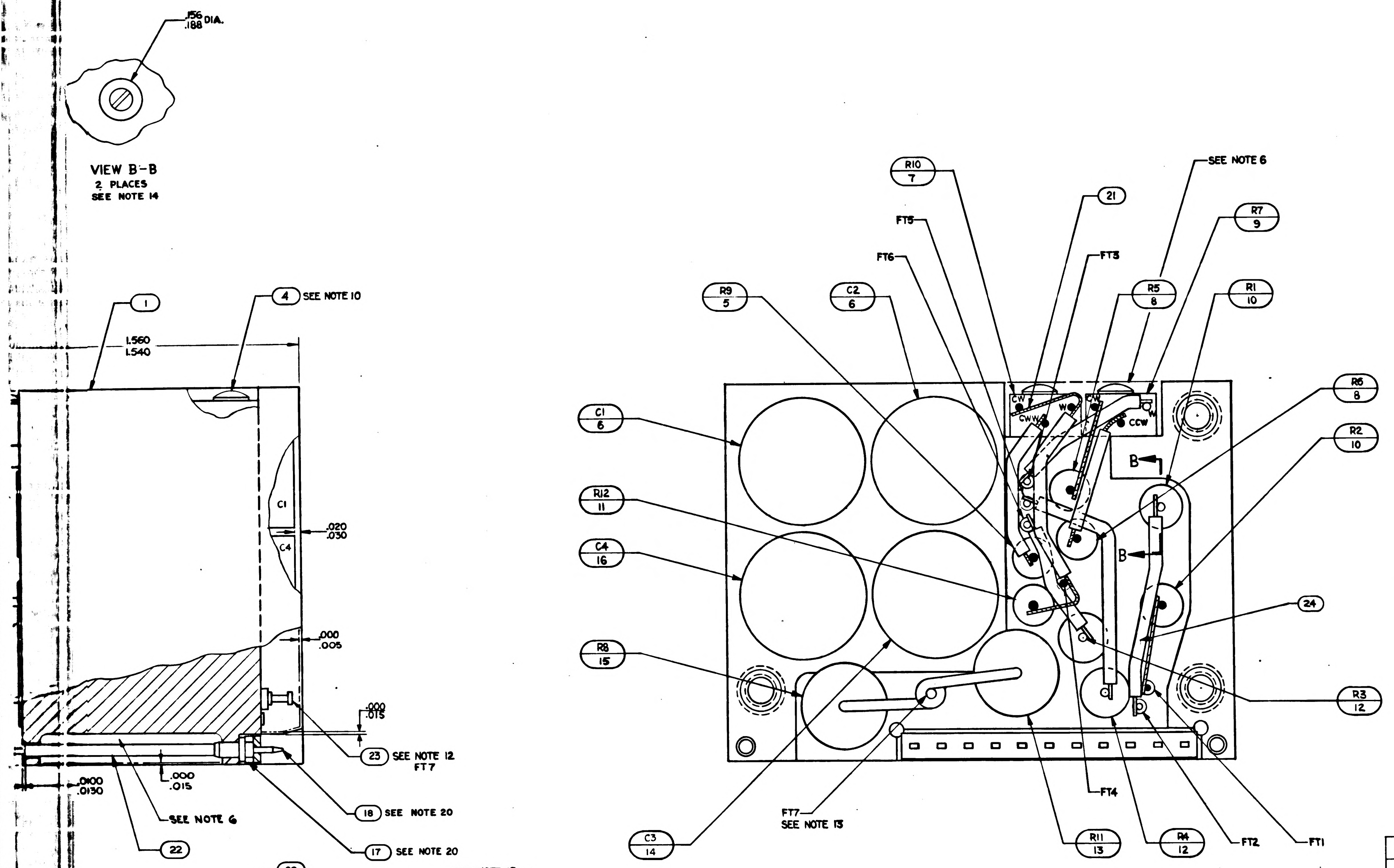

C3
14
SEE NOTE 15
R7
R10
PULSE TORQ
GYRO CALIB
1007521-
REV.
SER NO.
FOR USE WIT
IRIG
S/N

VIEW A

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005 EXCEPT WHERE SHOWN.
3. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
4. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
5. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
6. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) USING CURING CYCLE NO.2. UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
7. MARK PIN NUMBERS .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
8. STAKE FIND NO.5 THRU FIND NO.8 AND FIND NO.10 THRU FIND NO.16 PER ND 1002009 METHOD C & CENTRALIZE
9. ON FIND NO.2 AND FIND NO.3 FT( ) INDICATES FEEDTHRU.
10. APPLY ZINC CHROMATE PRIMER, MIL-P-8585 PER MIL-P-6808 (AS6) TO THREADS OF FIND NO.4.
11. BOND FIND NO.10 PER ND1002117.
12. CUT FIND NO.23 AT TOP OF TURRET.
13. SOLDER PER ND 1002071.
14. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND.
15. AFTER FINAL SYSTEM LEVEL ADJUSTMENT, SEAL ADJUSTING SCREWS PER ND 1002009 METHOD C
16. C3 AND C4 TO BE SELECTED FROM CHART "A" PER ATP-1007021.
17. R5 AND R6 TO BE SELECTED FROM CHART "B" OR CHART "F" PER ATP 1007021
18. R12 TO BE SELECTED FROM CHART "C" PER ATP-1007021.
19. R11 TO BE SELECTED FROM CHART "D" PER ATP-1007021.
20. MUST MEET REQUIREMENTS OF ND1002136
21. R7 TO BE SELECTED FROM CHART "E" PER ATP-1007021.
22. PROCURE PER PS 1007021.
23. BOND FIND NO. 25 TO FIND NO.17 PER ND1002237
24. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
25. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.

REVISIONS 14702					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR17310		12-MAR-64	M.G. EF
B		REVISED PER TDRR 19451		2 JUN 65	J.K.
C		REVISED PER TDRR 19503		9 JUN 65	WJK RWH



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VIEW B-B
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SEE NOTE 14
1
4 SEE NOTE 10
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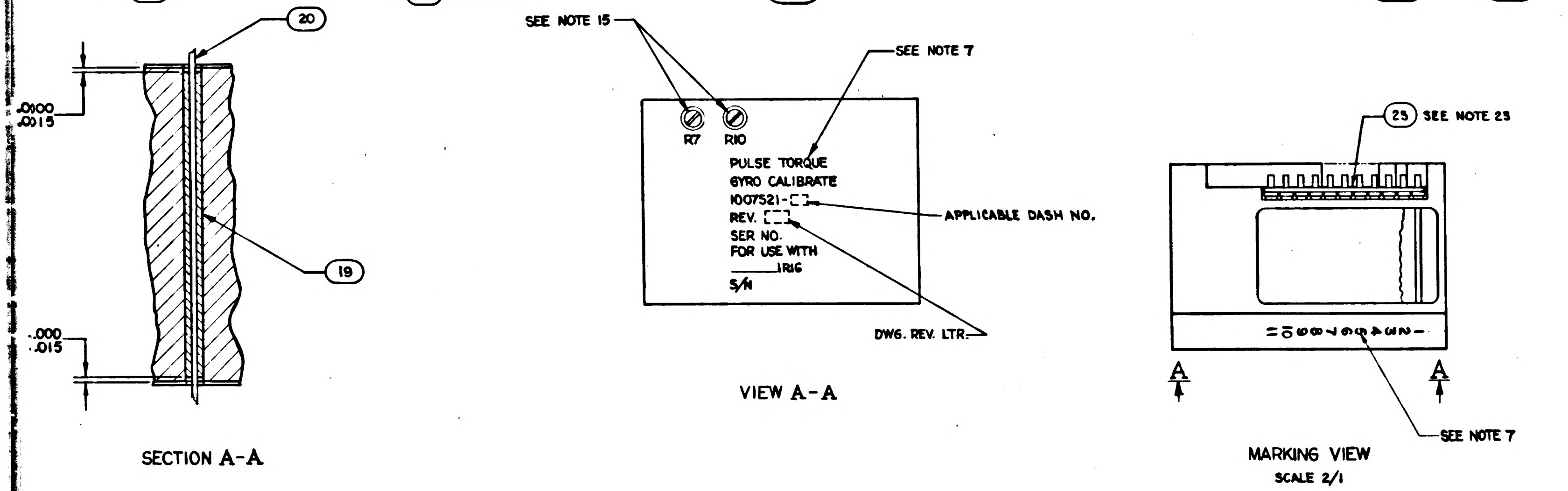
1.540
C1
C4
.020 .030
.000 .005
.000 .015
23 SEE NOTE 12 FT7
.0100 .0130
.000 .015
SEE NOTE 6
18 SEE NOTE 20
17 SEE NOTE 20
22
R10 7
21
SEE NOTE 6
R7 9
FT5
FT3
FT6
R5 8
R1 10
R9 5
C2 6
C1 6
R6 8
R2 10
R12 11
C4 16
CW
CWW
W
CCW
B
24
R8 15
R3 12
FT7 SEE NOTE 13
C3 14
FT4
R11 13
R4 12
FT2
FT1



20
.0100 .015
19
.000 .015
SECTION A-A
SEE NOTE 15
SEE NOTE 7
R7 R10
PULSE TORQUE
GYRO CALIBRATE
1007521-
REV.
SER NO.
FOR USE WITH
1RIG
S/N
APPLICABLE DASH NO.
DWG. REV. LTR.
VIEW A-A
25 SEE NOTE 23
A
A
SEE NOTE 7
MARKING VIEW
SCALE 2/1

CHART B			
PART NO	VALUE	PART NO	VALUE
1010377-337	82.5K	1010377-281	53K
-338	83.75K	-282	64K
-339	85.0K	-283	73K
-344	86.25K	-284	127K
-2	87.5K	-285	136K
-3	88.75K	-286	145K
-4	90.0K	-287	154K
-5	91.25K	-288	163K
-6	92.5K	-289	172K
-7	93.75K	-290	181K
-8	95.0K	-291	190K
-9	96.25K	-292	199K
-10	97.5K	-293	208K
-11	98.75K	-294	217K
-12	100.0K	-295	226K
-13	101.25K	-296	235K
-14	102.5K	-297	244K
-15	103.75K	-298	253K
-16	105.0K	-299	262K
-17	106.25K	-300	271K
-18	107.5K		
-19	108.75K		
-20	110.0K		
-21	111.25K		
-22	112.5K		
-340	113.75K		
-341	115.0K		
-342	116.25K		
-343	117.5K		

— 021 CONFIGURATION

CHART F			
PART NO.	VALUE	PART NO.	VALUE
1010377-76	82.5K	1010377-281	53K
-77	83.75K	-282	64K
-78	85.0K	-283	73K
-79	86.25K	-284	127K
-80	87.5K	-285	136K
-81	88.75K	-286	145K
-82	90.0K	-287	154K
-83	91.25K	-288	163K
-84	92.5K	-289	172K
-85	93.75K	-290	181K
-86	95.0K	-291	190K
-87	96.25K	-292	199K
-88	97.5K	-293	208K
-89	98.75K	-294	217K
-90	100.0K	-295	226K
-91	101.25K	-296	235K
-92	102.5K	-297	244K
-93	103.75K	-298	253K
-94	105.0K	-299	262K
-95	106.25K	-300	271K
-96	107.5K		
-97	108.75K		
-98	110.0K		
-99	111.25K		
-100	112.5K		
-101	113.75K		
-102	115.0K		
-103	116.25K		
-104	117.5K		

— 011 CONFIGURATION

CHART E	
PART NO	VALUE
1010373-9	5K
1010373-10	10K

CHART C	
PART NO.	VALUE
1010283-12	25.13K
-13	12.56K
-14	8.38K
-15	6.28K
-16	5.03K

CHART D	
PART NO.	VALUE Ω
1010253 -13	49.001
-14	49.581
-15	50.175
-16	50.784
-17	51.407
-18	52.046
-19	52.701
-20	53.373
-21	54.062
-22	54.772

CHART A	
PART NO.	VALUE UF
1010289-019	0.0350
1010289-020	0.0375
1010289-021	0.0400
1010289-022	0.0425
1010289-023	0.0450
1010289-024	0.0475
1010289-025	0.0500
1010289-026	0.0525
1010289-027	0.0550
1010289-028	0.0575
1010289-029	0.0600
1010289-030	0.0625
1010289-031	0.0650
1010289-032	0.0675
1010289-033	0.0700
1010289-034	0.0725
1010289-035	0.0750
1010289-036	0.0775
1010289-016	0.0220
1010289-017	0.0228
1010289-018	0.0330

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		—	☒		1010011	SCHEMATIC	REF
		1	1		1008540-11	GASKET, CONNECTOR-MINIATURE	25
		☒	—		1009542	SCHEMATIC	REF
		AR	AR		1006776-21	INSULATION, SLEEVING	24
		1	1		1006784-6	TERMINAL, FEEDTHRU, INSULATED	23
		AR	AR		1006776-20	INSULATION, SLEEVING	22
		AR	AR		1006757-1	WIRE, ELEC .010 X .020	21
		AR	AR		1006757-8	WIRE, ELEC .020 DIA	20
		AR	AR		1006776-22	INSULATION, SLEEVING	19
		11	11		1006782-4	CONTACT, WRAPOST, MALE MIN	18
		11	11		1006775	INSULATOR, WRAPOST, MALE, MIN	17
		1	1		SEE NOTE 16	CAPACITOR, .0220 UF-.0775UF 200V ±1%	16
		1	1		1010253-12	RESISTOR, FXD, WW 10Ω 1W ±.01%	15
		1	1		SEE NOTE 16	CAPACITOR, .0220 UF-.0775UF 200V ±1%	14
		1	1		SEE NOTE 19	RESISTOR, FXD, WW 1W ±.01%	13
		2	2		1010389-93	RESISTOR, FXD, WW 600Ω 3W ±1%	12
		1	1		SEE NOTE 18	RESISTOR, FXD, WW 1/10W ±.1%	11
		2	2		1010262-1	RESISTOR, FXD, WW 525Ω 10W ±1%	10
		1	1		SEE NOTE 21	RESISTOR, VAR, 1W ±5%	9
		2	2		SEE NOTE 17	RESISTOR, FXD, WW 1/10W	8
		1	1		1010373-8	RESISTOR, VAR, 2K 1W ±5%	7
		2	2		1010289-036	CAPACITOR, POLY, .0775UF 200V ±.5%	6
		1	1		1010283-17	RESISTOR, FXD, WW 5.1K 1/10W ±.1%	5
		4	4		1000093-3	SCREW, BUTTON HD	4
		1	1		1008023-1	INSULATOR	3
		~~1~~	~~1~~		~~1008023-2~~	~~INSULATOR~~	2
		1	1		1007020	HEATSINK	1
QUANTITY REQUIRED					LIST OF MATERIALS		

1007521 C

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
Contract NAS 9-497
DRAWN S. Agne DATE 9 SEP 64
CHECKED A. Udonich 15 SEP 64
APPROVAL
APPROVAL D. R. Test 10-5-64
NASA APPROVAL 11-2-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PULSE TORQUE GYRO CALIBRATE ASSEMBLY

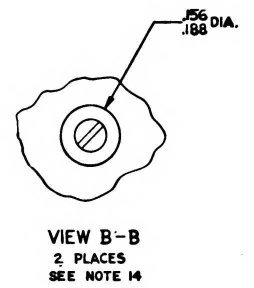
CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007521
SCALE 5/1
WT
SHEET OF

2/1007521

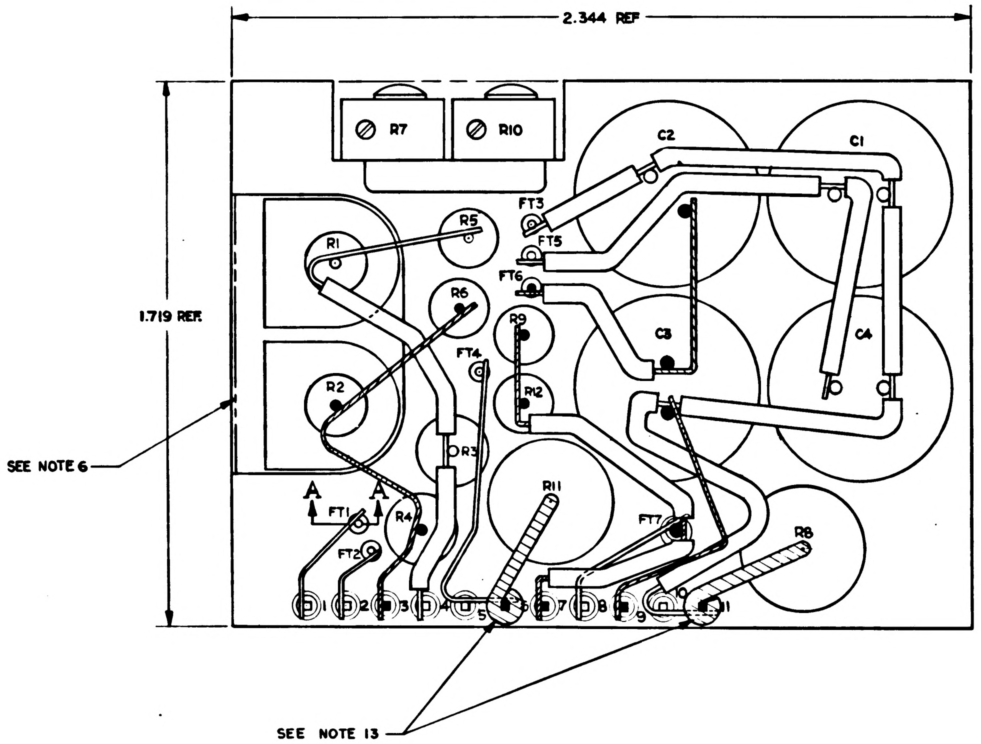
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

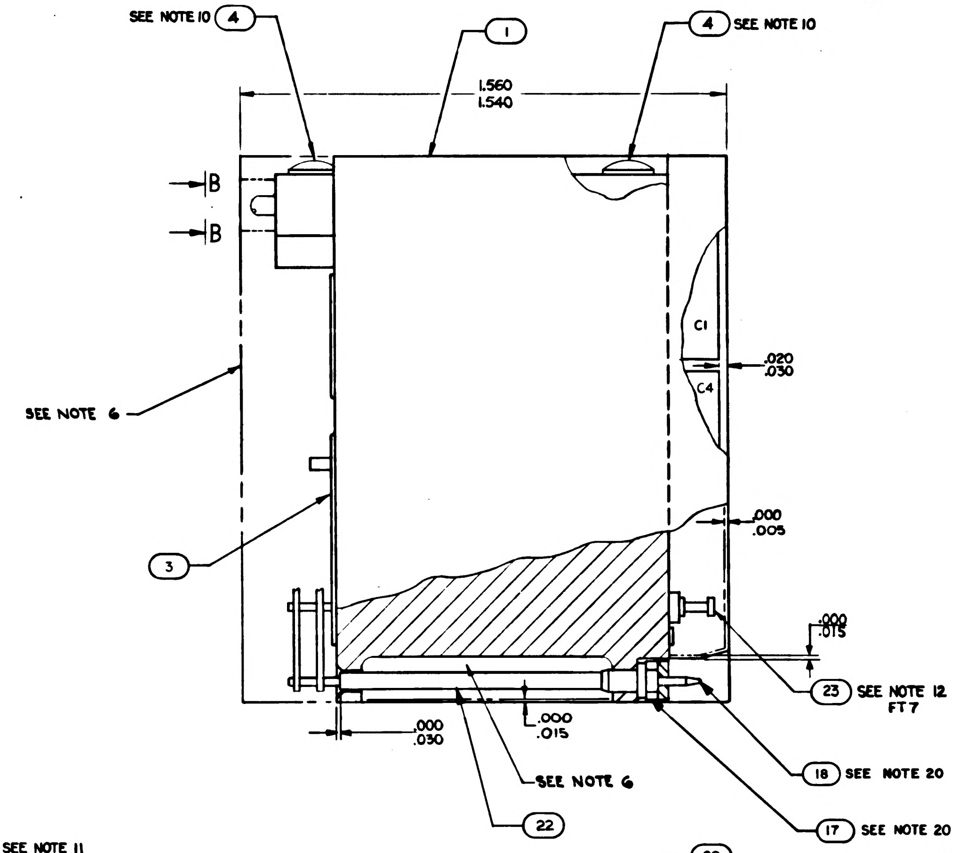
~~TABLE I~~

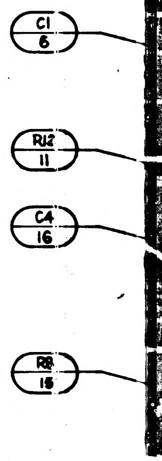
~~CONFIGURATION~~	~~BOND BETWEEN WAFER AND HEATSINK~~	~~TOP OF WAFER~~	~~HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE~~
~~WAFER AND FLAT HEATSINK~~	~~100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~WAFER AND ADJACENT VERTICAL HEAT-SINK SURFACE~~	~~CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~HEATSINK FOAM CONTACT SURFACE PERIMETER~~	~~N/A~~	~~N/A~~	~~.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE~~

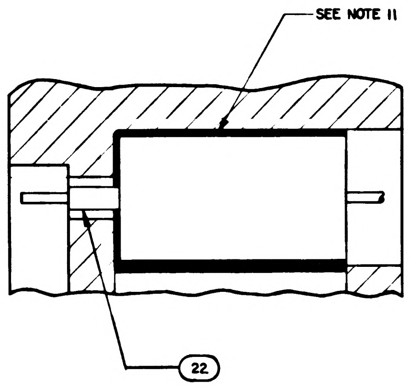


VIEW B-B
2 PLACES
SEE NOTE 14

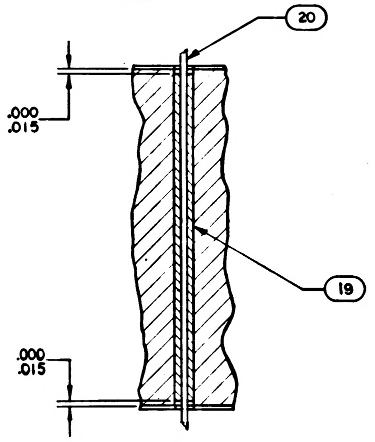




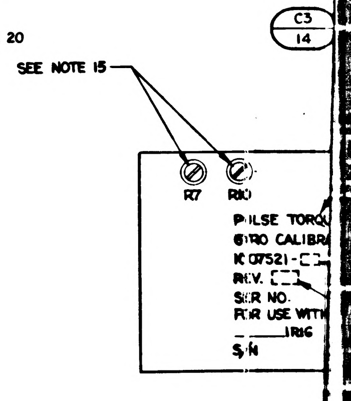




SECTION B-B



SECTION A-A

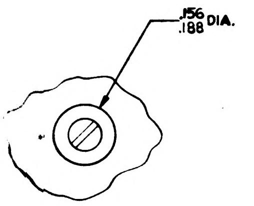


VIEW A

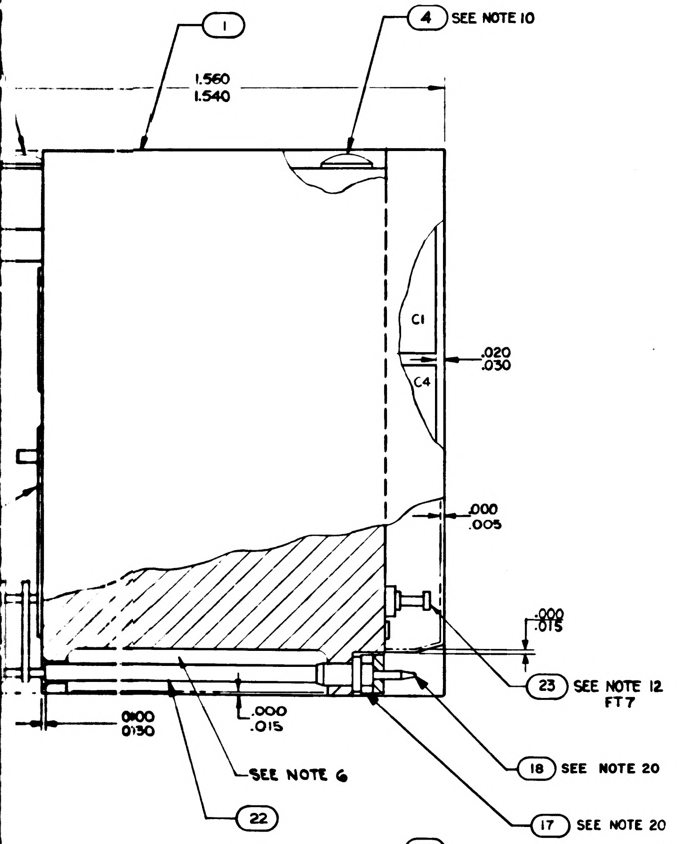
NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005 EXCEPT WHERE SHOWN.
3. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
4. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
5. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
6. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) USING CURING CYCLE NO.2. UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
7. MARK PIN NUMBERS .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
8. STAKE FIND NO.5 THRU FIND NO.8 AND FIND NO.10 THRU FIND NO.16 PER ND 1002009 METHOD H & CENTRALIZE
9. CN ~~FIND NO.2 AND~~ FIND NO. 3 FT( ) INDICATES FEEDTHRU.
10. APPLY ZINC CHROMATE PRIMER, MIL-P-8585 PER MIL-P-6808 (AS6) TO THREADS OF FIND NO.4.
11. BOND FIND NO.10 PER ND1002117.
12. CUT FIND NO. 23 AT TOP OF TURRET.
13. SOLDER PER ND 1002071.
14. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND.
15. AFTER FINAL SYSTEM LEVEL ADJUSTMENT, SEAL ADJUSTING SCREWS PER ND 1002009 METHOD C
16. C3 AND C4 TO BE SELECTED FROM CHART "A" PER ATP-1007021.
17. R5 AND R6 TO BE SELECTED FROM CHART "B" OR CHART "F" PER ATP 1007021
18. R12 TO BE SELECTED FROM CHART "C" PER ATP-1007021.
19. R11 TO BE SELECTED FROM CHART "D" PER ATP-1007021.
20. MUST MEET REQUIREMENTS OF ND1002136
21. R7 TO BE SELECTED FROM CHART "E" PER ATP-1007021.
22. PROCURE PER PS 1007021.
23. BOND FIND NO. 25 TO FIND NO.17 PER ND1002237
~~24. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
~~25. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
26. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
27. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FO EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

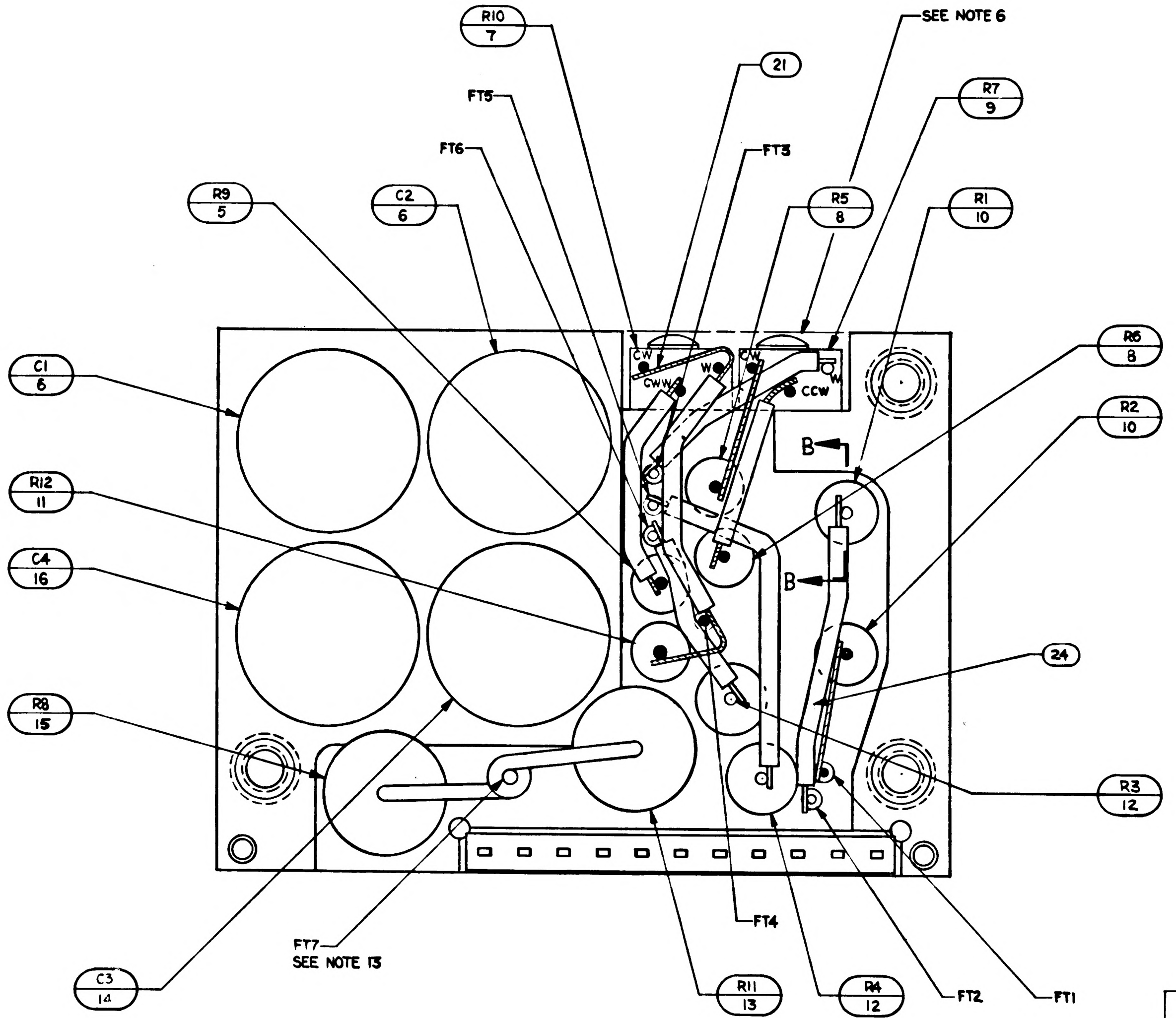
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR1731		APR 64	
B		REVISED PER TDRR 19451		JUN 65	
C		REVISED PER TDRR 19503		65	
D		REVISED PER TDRR 20143		65	



VIEW B-B
2 PLACES
SEE NOTE 14



1
4 SEE NOTE 10
1.560
1.540
C1
C4
.020
.030
.000
.005
.000
.015
23 SEE NOTE 12
FT7
.0100
.0130
.000
.015
SEE NOTE 6
22
18 SEE NOTE 20
17 SEE NOTE 20



R10
7
21
SEE NOTE 6
R7
9
FT5
FT3
FT6
R5
8
R9
5
C2
6
R1
10
C1
6
CW
CWW
CW
W
W
CCW
R6
8
R2
10
B
R12
11
C4
16
B
24
R8
15
R3
12
FT7
SEE NOTE 13
FT4
C3
14
R11
13
R4
12
FT2
FT1

CHART B

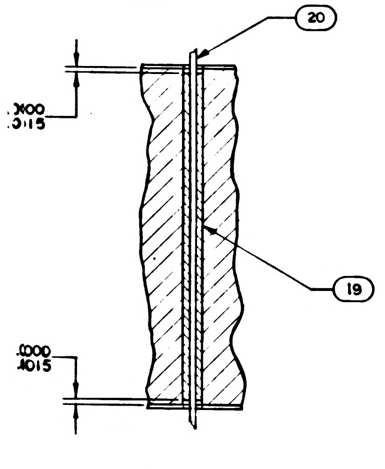
PART NO	VALUE	PART NO	VALUE
1010377-337	82.5K	1010377-281	53K
-338	83.75K	-282	64K
-339	85.0K	-283	73K
-344	86.25K	-284	127K
-2	87.5K	-285	136K
-3	88.75K	-286	145K
-4	90.0K	-287	154K
-5	91.25K	-288	163K
-6	92.5K	-289	172K
-7	93.75K	-290	181K
-8	95.0K	-291	190K
-9	96.25K	-292	199K
-10	97.5K	-293	208K
-11	98.75K	-294	217K
-12	100.0K	-295	226K
-13	101.25K	-296	235K
-14	102.5K	-297	244K
-15	103.75K	-298	253K
-16	105.0K	-299	262K
-17	106.25K	-300	271K
-18	107.5K		
-19	108.75K		
-20	110.0K		
-21	111.25K		
-22	112.5K		
-340	113.75K		
-341	115.0K		
-342	116.25K		
-343	117.5K		

— 021 CONFIGURATION

CHART F

PART NO.	VALUE	PART NO.	VALUE
1010377-76	82.5K	1010377-281	53K
-77	83.75K	-282	64K
-78	85.0K	-283	73K
-79	86.25K	-284	127K
-80	87.5K	-285	136K
-81	88.75K	-286	145K
-82	90.0K	-287	154K
-83	91.25K	-288	163K
-84	92.5K	-289	172K
-85	93.75K	-290	181K
-86	95.0K	-291	190K
-87	96.25K	-292	199K
-88	97.5K	-293	208K
-89	98.75K	-294	217K
-90	100.0K	-295	226K
-91	101.25K	-296	235K
-92	102.5K	-297	244K
-93	103.75K	-298	253K
-94	105.0K	-299	262K
-95	106.25K	-300	271K
-96	107.5K		
-97	108.75K		
-98	110.0K		
-99	111.25K		
-100	112.5K		
-101	113.75K		
-102	115.0K		
-103	116.25K		
-104	117.5K		

— 011 CONFIGURATION



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.0100
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.0000
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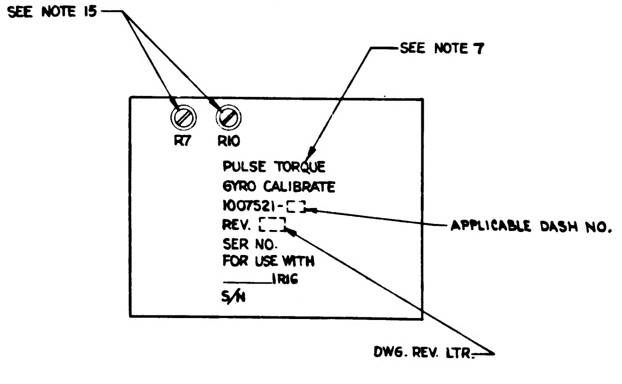
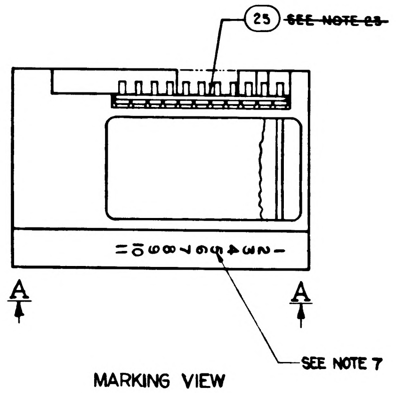
SECTION A-A



SEE NOTE 15
SEE NOTE 7
R7
R10
PULSE TORQUE
GYRO CALIBRATE
1007521-[ ]
REV. [ ]
SER NO.
FOR USE WITH
1RIG
S/N
APPLICABLE DASH NO.
DWG. REV. LTR.

VIEW A-A



23
~~SEE NOTE 23~~
A
A
SEE NOTE 7

MARKING VIEW
SCALE 2/1

CHART E

PART NO	VALUE
1010373-9	5K
1010373-10	10K

CHART C

PART NO.	VALUE
1010283-12	25.13K
-13	12.56K
-14	8.38K
-15	6.28K
-16	5.03K

CHART D

PART NO.	VALUE Ω
1010253 -13	49.001
-14	49.581
-15	50.175
-16	50.784
-17	51.407
-18	52.046
-19	52.701
-20	53.373
-21	54.062
-22	54.772

CHART A

PART NO.	VALUE UF
1010289-019	0.0350
1010289-020	0.0375
1010289-021	0.0400
1010289-022	0.0425
1010289-023	0.0450
1010289-024	0.0475
1010289-025	0.0500
1010289-026	0.0525
1010289-027	0.0550
1010289-028	0.0575
1010289-029	0.0600
1010289-030	0.0625
1010289-031	0.0650
1010289-032	0.0675
1010289-033	0.0700
1010289-034	0.0725
1010289-035	0.0750
1010289-036	0.0775
1010289-016	0.0220
1010289-017	0.0228
1010289-018	0.0330

QUANTITY REQUIRED					LIST OF MATERIALS		
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		—	☒		1010011	SCHEMATIC	REF
		1	1		1008540-11	GASKET, CONNECTOR-MINIATURE	25
		☒	—		1009542	SCHEMATIC	REF
		AR	AR		1006776-21	INSULATION, SLEEVING	24
		1	1		1006784-6	TERMINAL, FEEDTHRU, INSULATED	23
		AR	AR		1006776-20	INSULATION, SLEEVING	22
		AR	AR		1006757-1	WIRE, ELEC .010 X .020	21
		AR	AR		1006757-8	WIRE, ELEC .020 DIA	20
		AR	AR		1006776-22	INSULATION, SLEEVING	19
		11	11		1006782-4	CONTACT, WRAPOST, MALE MIN	18
		11	11		1006775	INSULATOR, WRAPOST, MALE, MIN	17
		1	1		SEE NOTE 16	CAPACITOR, .0220 UF-.0775UF 200V ±1%	16
		1	1		1010253-12	RESISTOR, FXD, WW 10Ω 1W ±.01%	15
		1	1		SEE NOTE 16	CAPACITOR, .0220 UF-.0775UF 200V ±1%	14
		1	1		SEE NOTE 19	RESISTOR, FXD, WW 1W ±.01%	13
		2	2		1010389-93	RESISTOR, FXD, WW 600Ω 3W ±1%	12
		1	1		SEE NOTE 18	RESISTOR, FXD, WW 1/10W ±.1%	11
		2	2		1010262-1	RESISTOR, FXD, WW 525Ω 10W ±1%	10
		1	1		SEE NOTE 21	RESISTOR, VAR, 1W ±5%	9
		2	2		SEE NOTE 17	RESISTOR, FXD, WW 1/10W	8
		1	1		1010373-8	RESISTOR, VAR, 2K 1W ±5%	7
		2	2		1010289-036	CAPACITOR, POLY, .0775UF 200V ±.5%	6
		1	1		1010283-17	RESISTOR, FXD, WW 5.1K 1/10W ±.1%	5
		4	4		1000093-3	SCREW, BUTTON HD	4
		1	1		1008023-1	INSULATOR	3
		~~1~~	~~1~~		~~1008023-2~~	~~INSULATOR~~	2
		1	1		1007020	HEATSINK	1

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
Contract NAS 9-497
DRAWN S. Agne DATE 9 SEP 64
CHECKED A. Udonch 15 SEP 64
APPROVAL
APPROVAL D. B. Test 10-5-64
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PULSE TORQUE
GYRO CALIBRATE
ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007521
SCALE 5/1
WT
SHEET 1 OF 1

D 1007521

2/1007521

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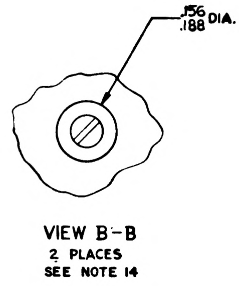
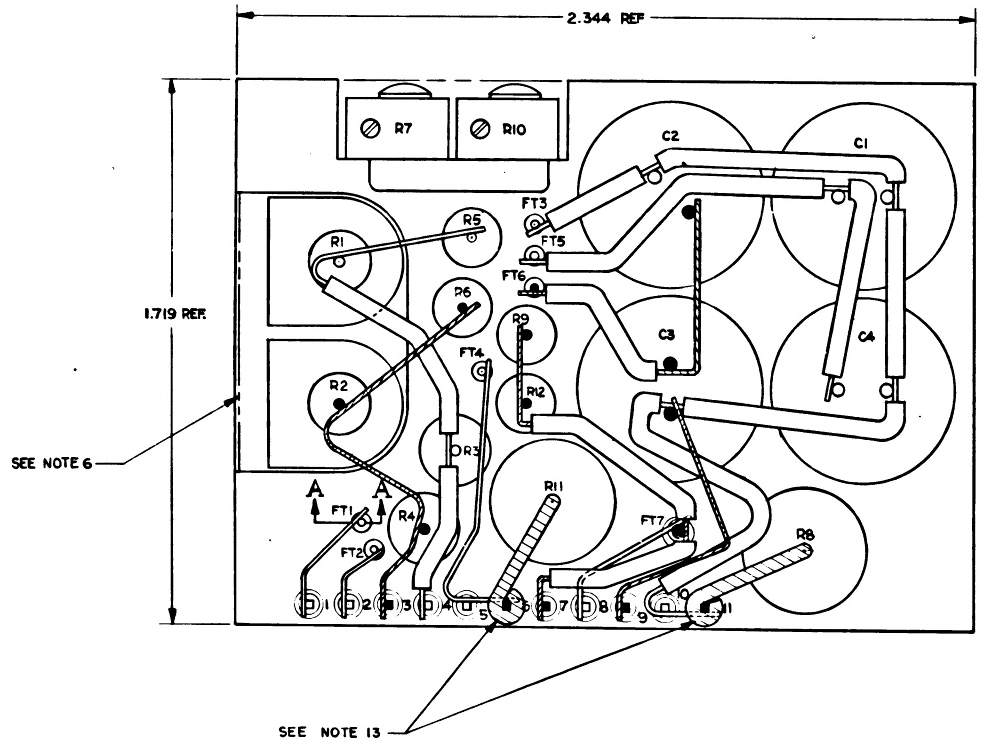
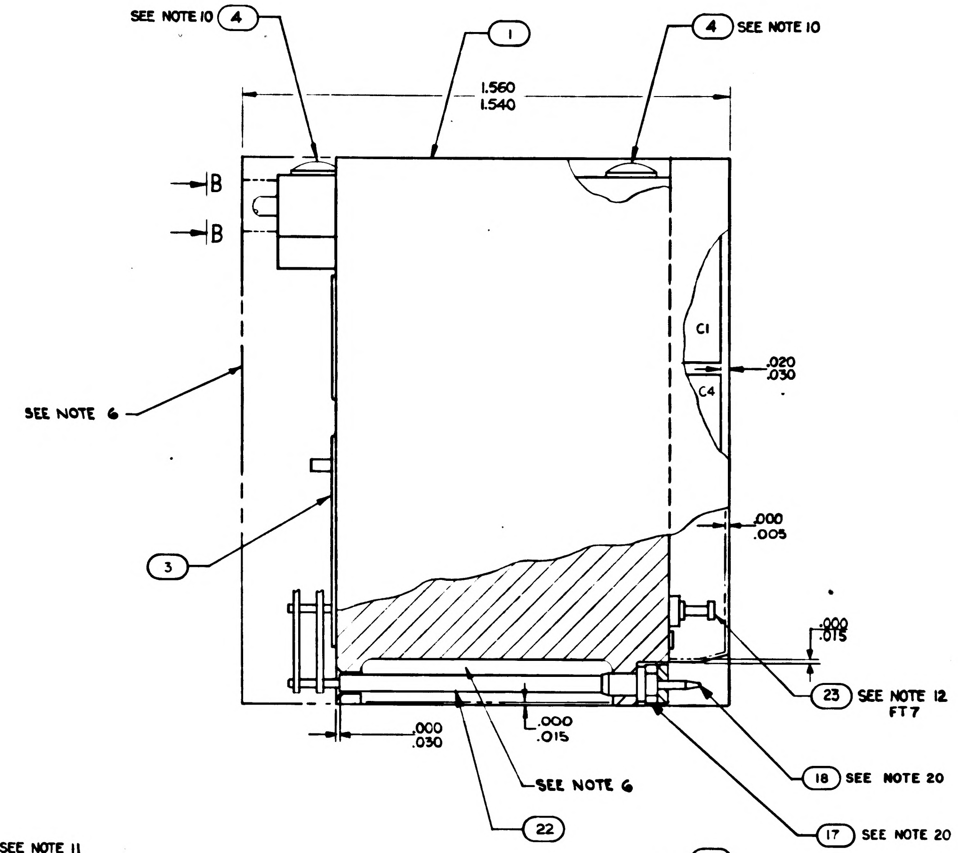
TABLE I

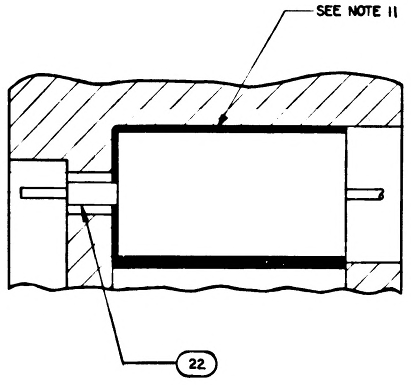
CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEAT-SINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE



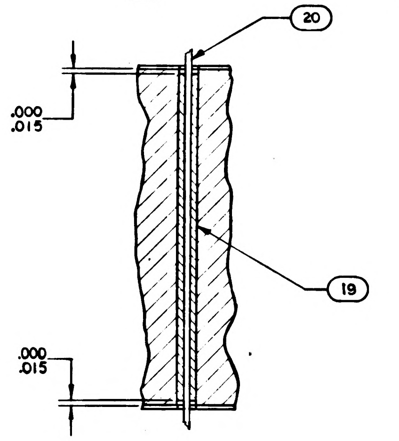
VIEW B-B
2 PLACES
SEE NOTE 14



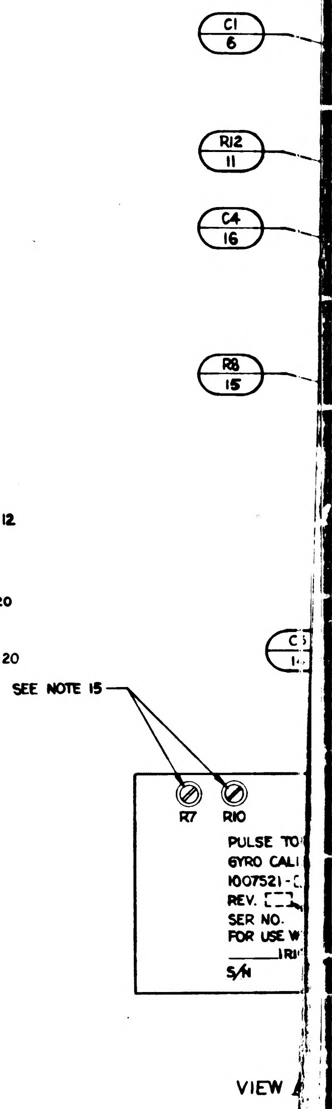




SECTION B-B



SECTION A-A



VIEW

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005 EXCEPT WHERE SHOWN.
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7. MARK PIN NUMBERS .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
8. STAKE FIND NO.5 THRU FIND NO.8 AND FIND NO.10 THRU FIND NO.16 PER ND 1002009 METHOD H & CENTRALIZE
9. CN ~~FIND NO.2 AND~~ FIND NO. 3 FT( ) INDICATES FEEDTHRU.
10. APPLY ZINC CHROMATE PRIMER, MIL-P-8585 PER MIL-P-6808 (AS6) TO THREADS OF FIND NO.4.
11. BOND FIND NO.10 PER ND1002117.
12. CUT FIND NO. 23 AT TOP OF TURRET.
13. SOLDER PER ND 1002071.
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16. C3 AND C4 TO BE SELECTED FROM CHART "A" PER ATP-1007021.
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19. R11 TO BE SELECTED FROM CHART "D" PER ATP-1007021.
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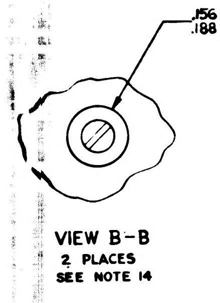
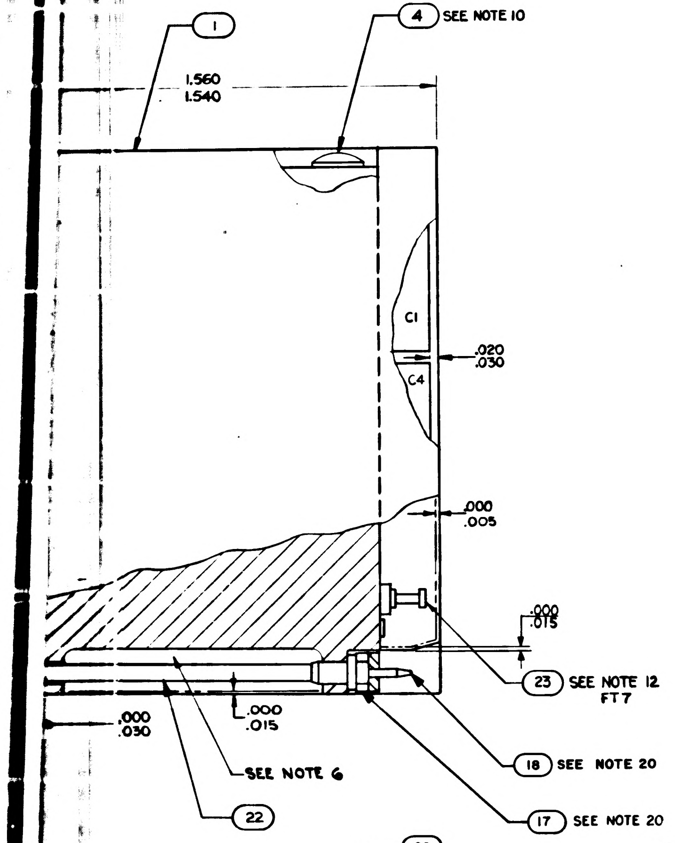
21. R7 TO BE SELECTED FROM CHART "E" PER ATP-1007021.
22. PROCURE PER PS 1007021.
23. ~~BOND FIND NO. 23 TO FIND NO.17 PER ND1002237~~
24. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
26. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
27. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17310		12 MAR 64	[illegible]
B		REVISED PER TDRR 19451		7 JUN 65	
C		REVISED PER TDRR 19503		[illegible] 65	RWH
D		REVISED PER TDRR 20143		[illegible] 65	P
E		REVISED PER TDRR 21127		3 [illegible] 65	RWH



VIEW B-B
2 PLACES
SEE NOTE 14



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4 SEE NOTE 10
1.560
1.540
C1
C4
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.030
.000
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.015
23 SEE NOTE 12 FT7
.000
.015
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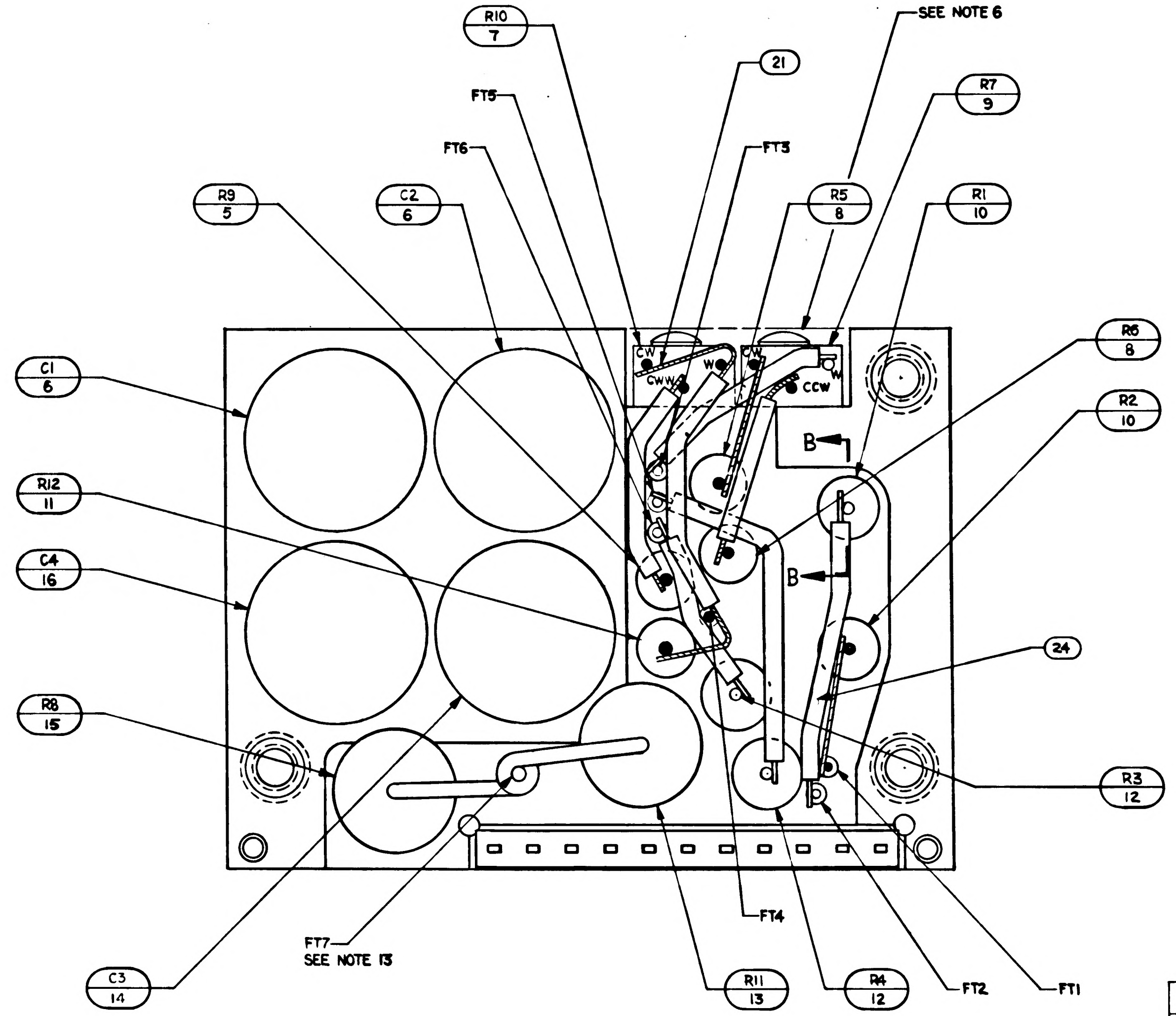
.030
SEE NOTE 6
18 SEE NOTE 20
17 SEE NOTE 20
22



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SEE NOTE 6
R7 9
FT6
FT3
R9 5
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R5 8
R1 10
CW
CWW
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CCW
R6 8
C1 6
B
R2 10
R12 11
C4 16
B
24
R8 15
R3 12
FT7
SEE NOTE 13
C3 14
FT4
R11 13
R4 12
FT2
FT1

CHART B			
PART NO	VALUE	PART NO	VALUE
1010377-337	82.5K	1010377-281	53K
-338	83.75K	-282	64K
-339	85.0K	-283	73K
-344	86.25K	-284	127K
-2	87.5K	-285	136K
-3	88.75K	-286	145K
-4	90.0K	-287	154K
-5	91.25K	-288	163K
-6	92.5K	-289	172K
-7	93.75K	-290	181K
-8	95.0K	-291	190K
-9	96.25K	-292	199K
-10	97.5K	-293	208K
-11	98.75K	-294	217K
-12	100.0K	-295	226K
-13	101.25K	-296	235K
-14	102.5K	-297	244K
-15	103.75K	-298	253K
-16	105.0K	-299	262K
-17	106.25K	-300	271K
-18	107.5K		
-19	108.75K		
-20	110.0K		
-21	111.25K		
-22	112.5K		
-340	113.75K		
-341	115.0K		
-342	116.25K		
-343	117.5K		

— 021 CONFIGURATION

CHART F			
PART NO.	VALUE	PART NO.	VALUE
1010377-76	82.5K	1010377-281	53K
-77	83.75K	-282	64K
-78	85.0K	-283	73K
-79	86.25K	-284	127K
-80	87.5K	-285	136K
-81	88.75K	-286	145K
-82	90.0K	-287	154K
-83	91.25K	-288	163K
-84	92.5K	-289	172K
-85	93.75K	-290	181K
-86	95.0K	-291	190K
-87	96.25K	-292	199K
-88	97.5K	-293	208K
-89	98.75K	-294	217K
-90	100.0K	-295	226K
-91	101.25K	-296	235K
-92	102.5K	-297	244K
-93	103.75K	-298	253K
-94	105.0K	-299	262K
-95	106.25K	-300	271K
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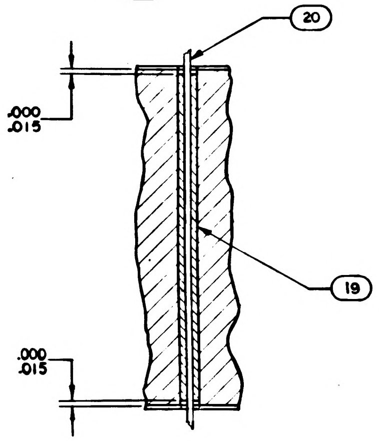
-103	116.25K		
-104	117.5K		

— 011 CONFIGURATION



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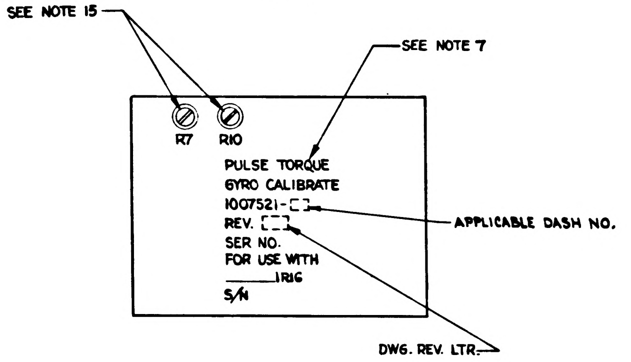
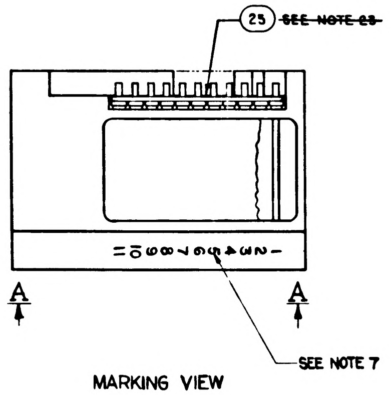
.015

SECTION A-A



SEE NOTE 15
SEE NOTE 7
R7
R10
PULSE TORQUE
GYRO CALIBRATE
1007521-[ ]
REV. [ ]
SER NO.
FOR USE WITH
_______ IRIG
S/N
APPLICABLE DASH NO.
DWG. REV. LTR.

VIEW A-A



25 ~~SEE NOTE 23~~
A
A
SEE NOTE 7

MARKING VIEW
SCALE 2/1

CHART E	
PART NO	VALUE
1010373-9	5K
1010373-10	10K

CHART C	
PART NO.	VALUE
1010283-12	25.13K
-13	12.56K
-14	8.38K
-15	6.28K
-16	5.03K

CHART D	
PART NO.	VALUE Ω
1010834-13	49.001
-14	49.581
-15	50.175
-16	50.784
-17	51.407
-18	52.046
-19	52.701
-20	53.373
-21	54.062
-22	54.772

CHART A	
PART NO.	VALUE UF
1010289-019	0.0350
1010289-020	0.0375
1010289-021	0.0400
1010289-022	0.0425
1010289-023	0.0450
1010289-024	0.0475
1010289-025	0.0500
1010289-026	0.0525
1010289-027	0.0550
1010289-028	0.0575
1010289-029	0.0600
1010289-030	0.0625
1010289-031	0.0650
1010289-032	0.0675
1010289-033	0.0700
1010289-034	0.0725
1010289-035	0.0750
1010289-036	0.0775
1010289-016	0.0220
1010289-017	0.0228
1010289-018	0.0330

QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		021	011				
		—	☒		1010011	SCHEMATIC	REF
		1	1		1008540-11	GASKET, CONNECTOR-MINIATURE	25
		☒	—		1009542	SCHEMATIC	REF
		AR	AR		1006776-21	INSULATION, SLEEVING	24
		1	1		1006784-6	TERMINAL, FEEDTHRU, INSULATED	23
		AR	AR		1006776-20	INSULATION, SLEEVING	22
		AR	AR		1006757-1	WIRE, ELEC .010 X .020	21
		AR	AR		1006757-8	WIRE, ELEC .020 DIA	20
		AR	AR		1006776-22	INSULATION, SLEEVING	19
		11	11		1006782-4	CONTACT, WRAPOST, MALE MIN	18
		11	11		1006775	INSULATOR, WRAPOST, MALE, MIN	17
		1	1		SEE NOTE 16	CAPACITOR, .0220 UF-.0775UF 200V ±1%	16
		1	1		1010834-12	RESISTOR, FXD, WW 10Ω 1W ±.01%	15
		1	1		SEE NOTE 16	CAPACITOR, .0220 UF-.0775UF 200V ±1%	14
		1	1		SEE NOTE 19	RESISTOR, FXD, WW 1W ±.01%	13
		2	2		1010389-93	RESISTOR, FXD, WW 600Ω 3W ±1%	12
		1	1		SEE NOTE 18	RESISTOR, FXD, WW 1/10W ±.1%	11
		2	2		1010262-1	RESISTOR, FXD, WW 525Ω 10W ±1%	10
		1	1		SEE NOTE 21	RESISTOR, VAR, 1W ±5%	9
		2	2		SEE NOTE 17	RESISTOR, FXD, WW 1/10W	8
		1	1		1010373-8	RESISTOR, VAR, 2K 1W ±5%	7
		2	2		1010289-036	CAPACITOR, POLY, .0775UF 200V ±.5%	6
		1	1		1010283-17	RESISTOR, FXD, WW 5.1K 1/10W ±.1%	5
		4	4		1000093-3	SCREW, BUTTON HD	4
		1	1		1008023-1	INSULATOR	3
		~~1~~	~~1~~		~~1008023-2~~	~~INSULATOR~~	2
		1	1		1007020	HEATSINK	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN S. Agne DATE 9 SEP 64
CHECKED A. Udovich 15 SEP 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PULSE TORQUE
GYRO CALIBRATE
ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007521
SCALE 5/1
WT
SHEET OF

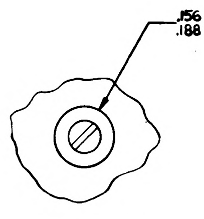
1007521 E

2-1007521

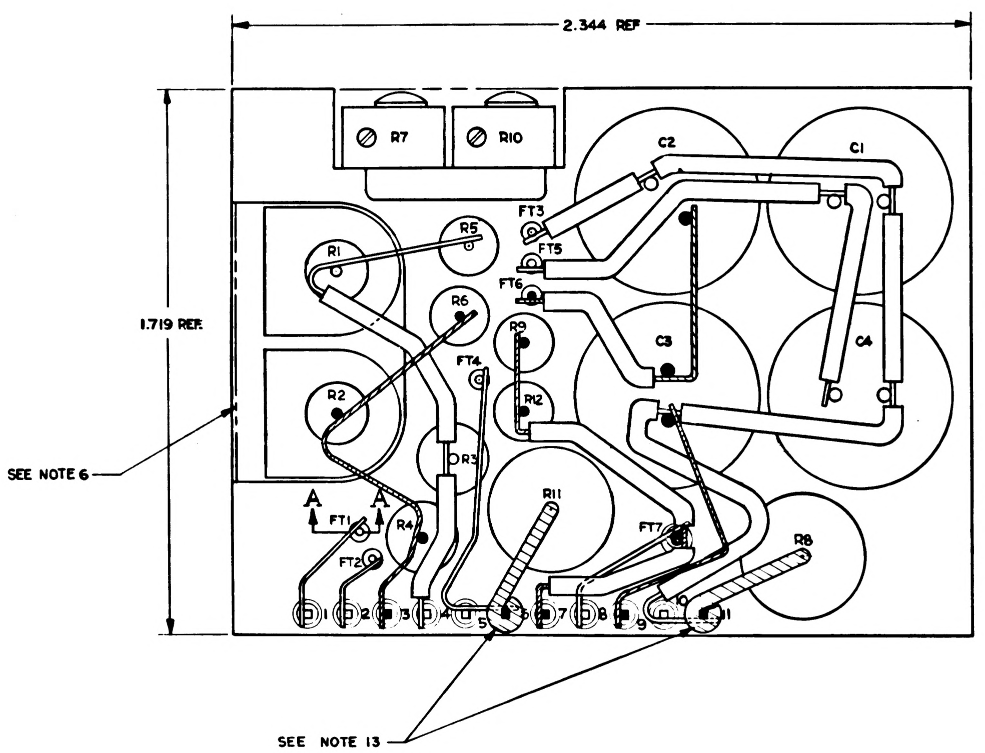
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

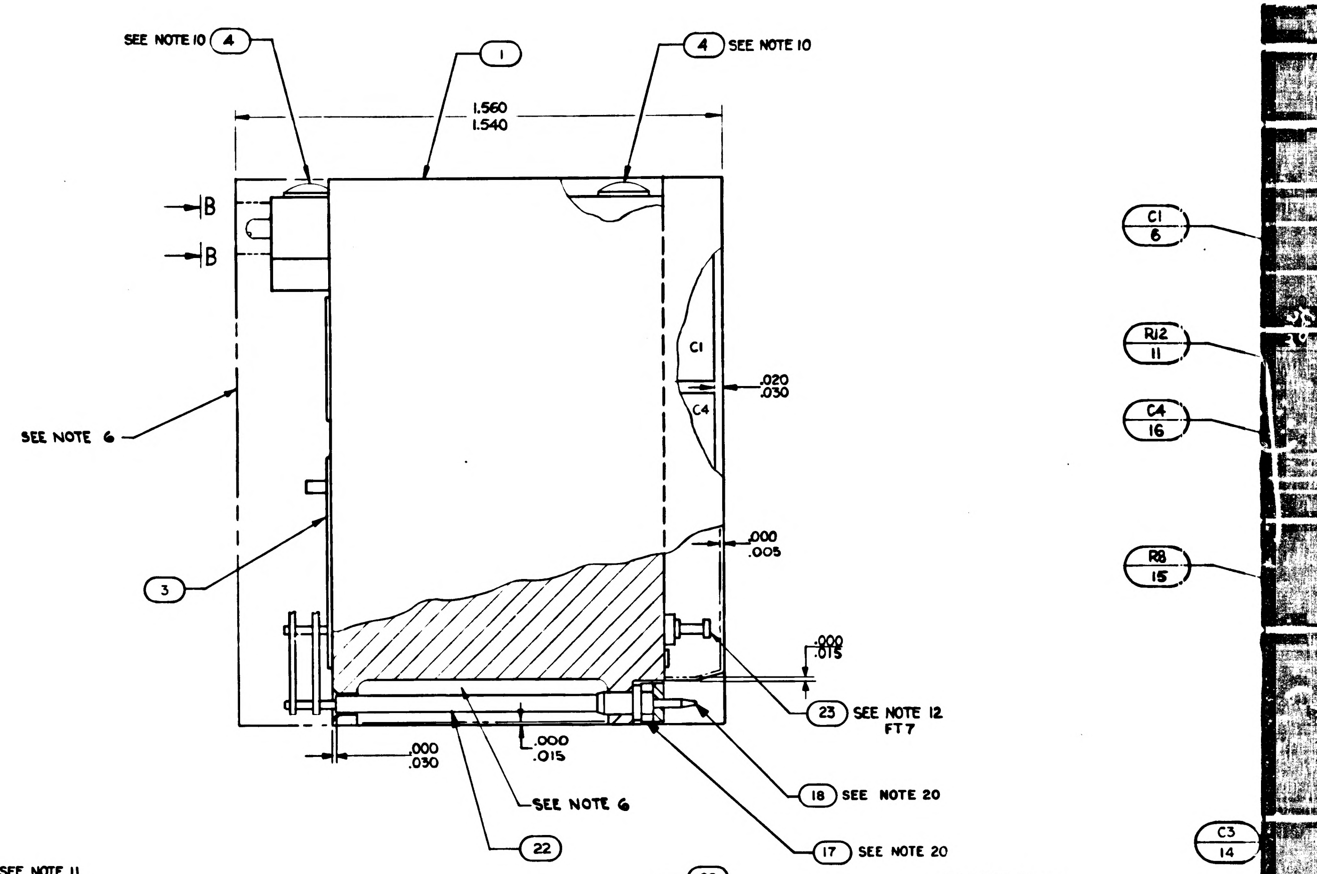
~~TABLE I~~

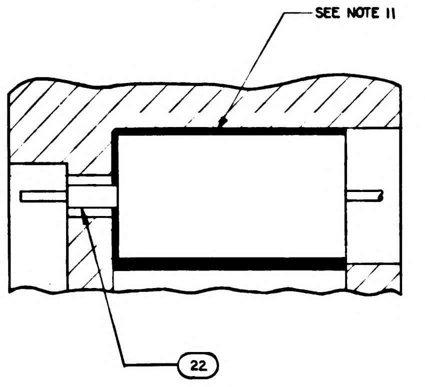
~~CONFIGURATION~~	~~BOND BETWEEN WAFER AND HEATSINK~~	~~TOP OF WAFER~~	~~HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE~~
~~WAFER AND FLAT HEATSINK~~	~~100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~WAFER AND ADJACENT VERTICAL HEAT-SINK SURFACE~~	~~CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~HEATSINK FOAM CONTACT SURFACE PERIMETER~~	~~N/A~~	~~N/A~~	~~.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE~~



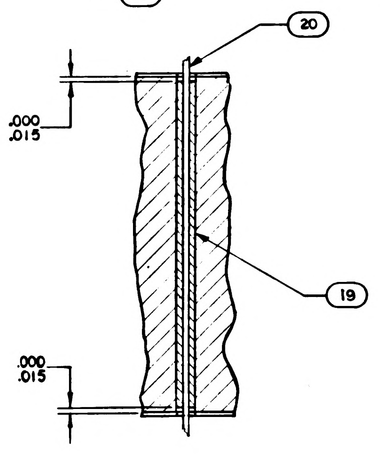
VIEW B-B
2 PLACES
SEE NOTE 14



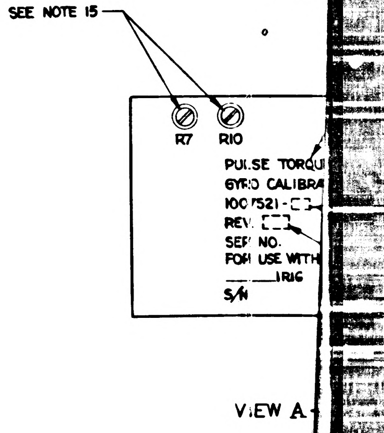




SECTION B-B



SECTION A-A



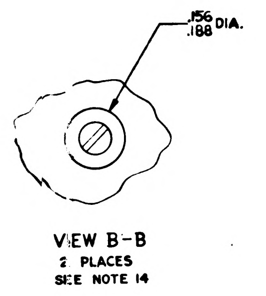
VIEW A

NOTES

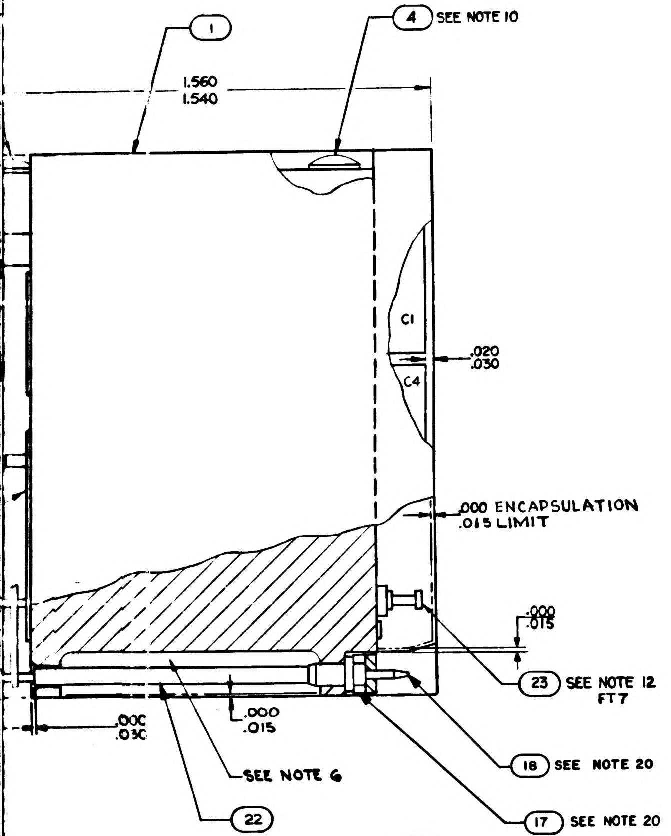
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005 EXCEPT WHERE SHOWN.
3. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
4. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
5. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
6. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) USING CURING CYCLE NO.2. UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
7. MARK PIN NUMBERS .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
8. STAKE FIND NO.5 THRU FIND NO.8 AND FIND NO.10 THRU FIND NO.16 PER ND 1002009 METHOD H & CENTRALIZE
9. ON ~~FIND NO.2 AND~~ FIND NO. 3 FT( ) INDICATES FEEDTHRU.
10. APPLY ZINC CHROMATE PRIMER, MIL-P-8585 PER MIL-P-6808 (AS6) TO THREADS OF FIND NO.4.
11. BOND FIND NO.10 PER ND1002117.
12. CUT FIND NO. 23 AT TOP OF TURRET.
13. SOLDER PER ND 1002071.
14. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND.
15. AFTER FINAL SYSTEM LEVEL ADJUSTMENT, SEAL ADJUSTING SCREWS PER ND 1002009 METHOD C
16. C3 AND C4 TO BE SELECTED FROM CHART "A" PER ATP-1007021.
17. R5 AND R6 TO BE SELECTED FROM CHART "B" OR CHART "F" PER ATP 1007021
18. R12 TO BE SELECTED FROM CHART "C" PER ATP-1007021.
19. R11 TO BE SELECTED FROM CHART "D" PER ATP-1007021.
20. MUST MEET REQUIREMENTS OF ND 1002136
21. R7 TO BE SELECTED FROM CHART "E" PER ATP-1007021.
22. PROCURE PER PS 1007021.
23. ~~BOND FIND NO. 25 TO FIND NO.17 PER ND1002237~~
24. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
26. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
27. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION. USING BLACK PAINT PER 1010729-4. CURE AT 140° F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR17310		12 MAR 64	M.G. EF
B		REVISED PER TDRR 19451		2 JUN 65	J.K.
C		REVISED PER TDRR 19503		9 JUL 65	WJK RWH
D		REVISED PER TDRR 20143		14 JUN 65	RH [illegible]
E		REVISED PER TDRR 21127		31 JUL 65	RLP RWH
F		REVISED PER TDRR 22372		11 OCT 65	JWP EF

REVISIONS 14702



VIEW B-B
2 PLACES
SEE NOTE 14


1
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1.560
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C1
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FT7
18 SEE NOTE 20
17 SEE NOTE 20
SEE NOTE 6
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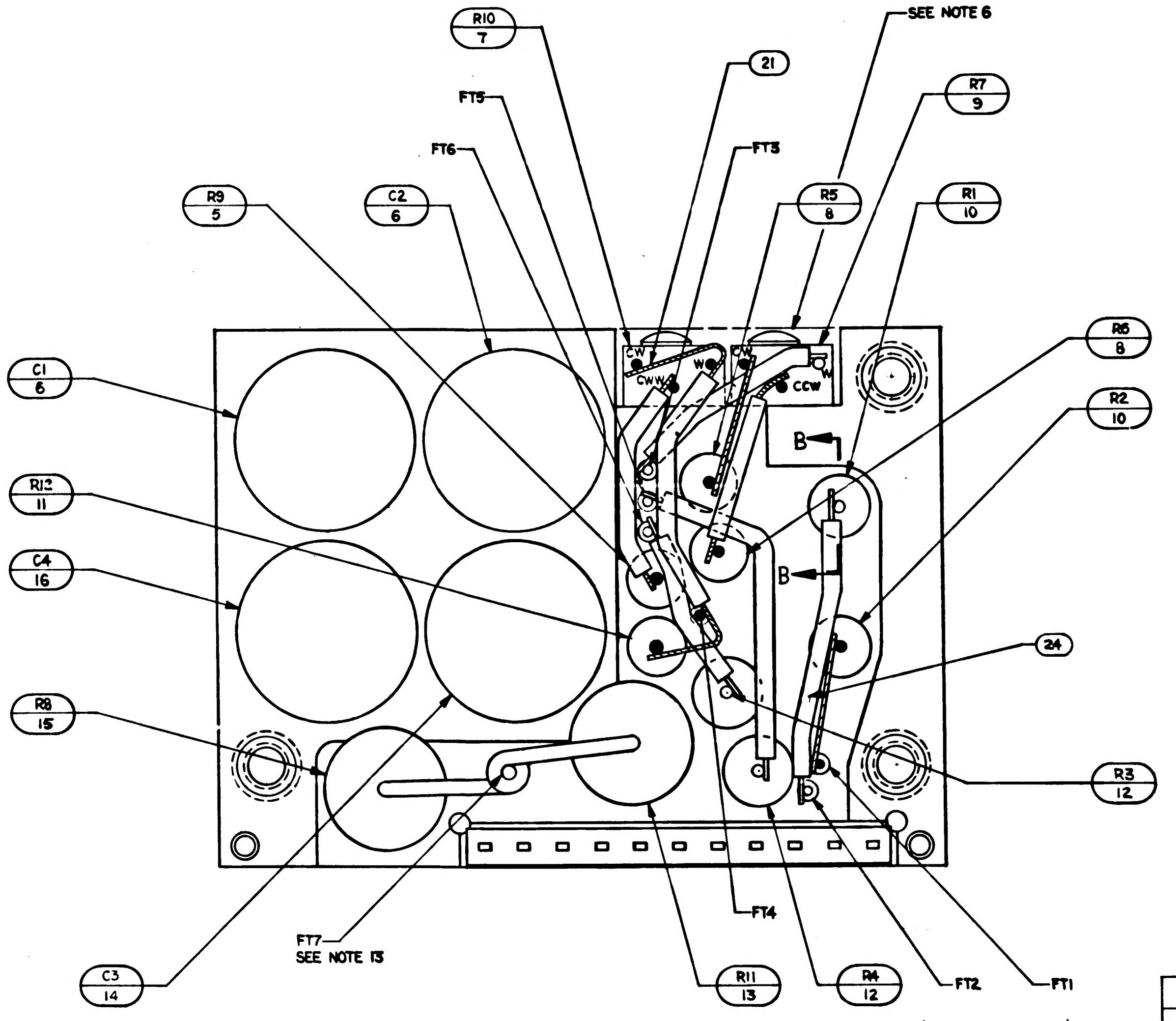
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R2
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R12
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C4
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R8
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R4
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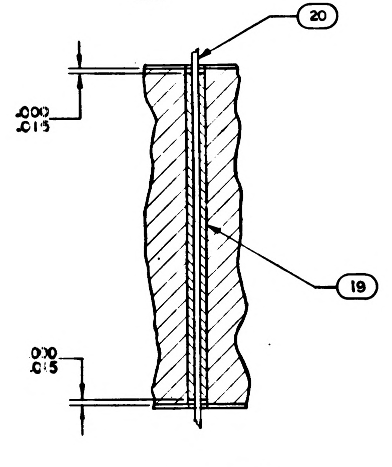
FT4
FT2
FT1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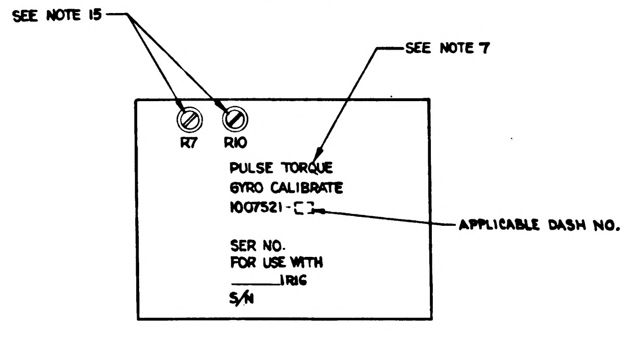
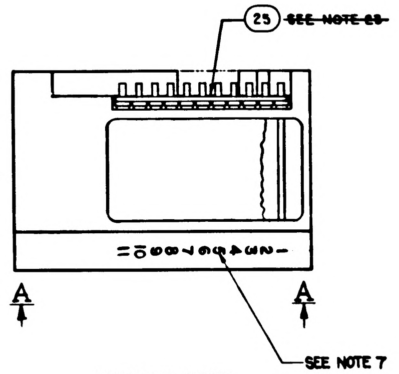
SECTION A-A


SEE NOTE 15
SEE NOTE 7
R7
R10
PULSE TORQUE
GYRO CALIBRATE
1007521-[ ]
SER NO.
FOR USE WITH
1816
S/N
APPLICABLE DASH NO.

VIEW A-A


25 ~~SEE NOTE 23~~
A
A
SEE NOTE 7

MARKING VIEW
SCALE 2/1

CHART B

PART NO	VALUE	PART NO	VALUE
1010377-337	82.5K	1010377-281	53K
-338	83.75K	-282	64K
-339	85.0K	-283	73K
-344	86.25K	-284	127K
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-17	106.25K	-300	271K
-18	107.5K		
-19	108.75K		
-20	110.0K		
-21	111.25K		
-22	112.5K		
-340	113.75K		
-341	115.0K		
-342	116.25K		
-343	117.5K		

—021 CONFIGURATION

CHART F

PART NO.	VALUE	PART NO.	VALUE
1010377-76	82.5K	1010377-281	53K
-77	83.75K	-282	64K
-78	85.0K	-283	73K
-79	86.25K	-284	127K
-80	87.5K	-285	136K
-81	88.75K	-286	145K
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-93	103.75K	-298	253K
-94	105.0K	-299	262K
-95	106.25K	-300	271K
-96	107.5K		
-97	108.75K		
-98	110.0K		
-99	111.25K		
-100	112.5K		
-101	113.75K		
-102	115.0K		
-103	116.25K		
-104	117.5K		

—011 CONFIGURATION

CHART E

PART NO	VALUE
1010373-9	5K
1010373-10	10K

CHART C

PART NO.	VALUE
1010283-12	25.13K
-13	12.56K
-14	8.38K
-15	6.28K
-16	5.03K

CHART D

PART NO.	VALUE Ω
1010834-13	49.001
-14	49.581
-15	50.175
-16	50.784
-17	51.407
-18	52.046
-19	52.701
-20	53.373
-21	54.062
-22	54.772

CHART A

PART NO.	VALUE UF
1010289-019	0.0350
1010289-020	0.0375
1010289-021	0.0400
1010289-022	0.0425
1010289-023	0.0450
1010289-024	0.0475
1010289-025	0.0500
1010289-026	0.0525
1010289-027	0.0550
1010289-028	0.0575
1010289-029	0.0600
1010289-030	0.0625
1010289-031	0.0650
1010289-032	0.0675
1010289-033	0.0700
1010289-034	0.0725
1010289-035	0.0750
1010289-036	0.0775
1010289-016	0.0220
1010289-017	0.0228
1010289-018	0.0330

QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		021	011				
		—	☒		1010011	SCHEMATIC	REF
		1	1		1008540-11	GASKET, CONNECTOR-MINIATURE	25
		☒	—		1009542	SCHEMATIC	REF
		AR	AR		1006776-21	INSULATION, SLEEVING	24
		1	1		1006784-6	TERMINAL, FEEDTHRU, INSULATED	23
		AR	AR		1006776-20	INSULATION, SLEEVING	22
		AR	AR		1006757-1	WIRE, ELEC .010 X .020	21
		AR	AR		1006757-8	WIRE, ELEC .020 DIA	20
		AR	AR		1006776-22	INSULATION, SLEEVING	19
		11	11		1006782-4	CONTACT, WRAPOST, MALE MIN	18
		11	11		1006775	INSULATOR, WRAPOST, MALE, MIN	17
		1	1		SEE NOTE 16	CAPACITOR, .0220 UF-.0775UF 200V ±1%	16
		1	1		1010834-12	RESISTOR, FXD, WW 10Ω 1W ±.01%	15
		1	1		SEE NOTE 16	CAPACITOR, .0220 UF-.0775UF 200V ±1%	14
		1	1		SEE NOTE 19	RESISTOR, FXD, WW 1W ±.01%	13
		2	2		1010389-93	RESISTOR, FXD, WW 600Ω 3W ±1%	12
		1	1		SEE NOTE 18	RESISTOR, FXD, WW 1/10W ±.1%	11
		2	2		1010262-1	RESISTOR, FXD, WW 525Ω 10W ±1%	10
		1	1		SEE NOTE 21	RESISTOR, VAR, 1W ±5%	9
		2	2		SEE NOTE 17	RESISTOR, FXD, WW 1/10W	8
		1	1		1010373-8	RESISTOR, VAR, 2K 1W ±5%	7
		2	2		1010289-036	CAPACITOR, POLY, .0775UF 200V ±.5%	6
		1	1		1010283-17	RESISTOR, FXD, WW5.1K 1/10W ±.1%	5
		4	4		1000093-3	SCREW, BUTTON HD	4
		1	1		1008023-1	INSULATOR	3
		~~1~~	~~1~~		~~1008023-2~~	~~INSULATOR~~	2
		1	1		1007020	HEATSINK	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

APPLICATION

'E ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
Contract NAS 9-497
DWG. NO.
DRAWN S. Agne DATE 9 SEP 64
CHECKED A. Udowych 15 SEP 64
APPROVAL
APPROVAL D. Hoag 10-5-64
NASA APPROVAL 12-4-
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PULSE TORQUE
GYRO CALIBRATE
ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007521
SCALE 5/1
WT
SHEET 1 OF 1

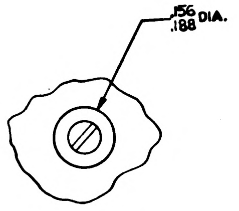
1007521 F

2/1007521

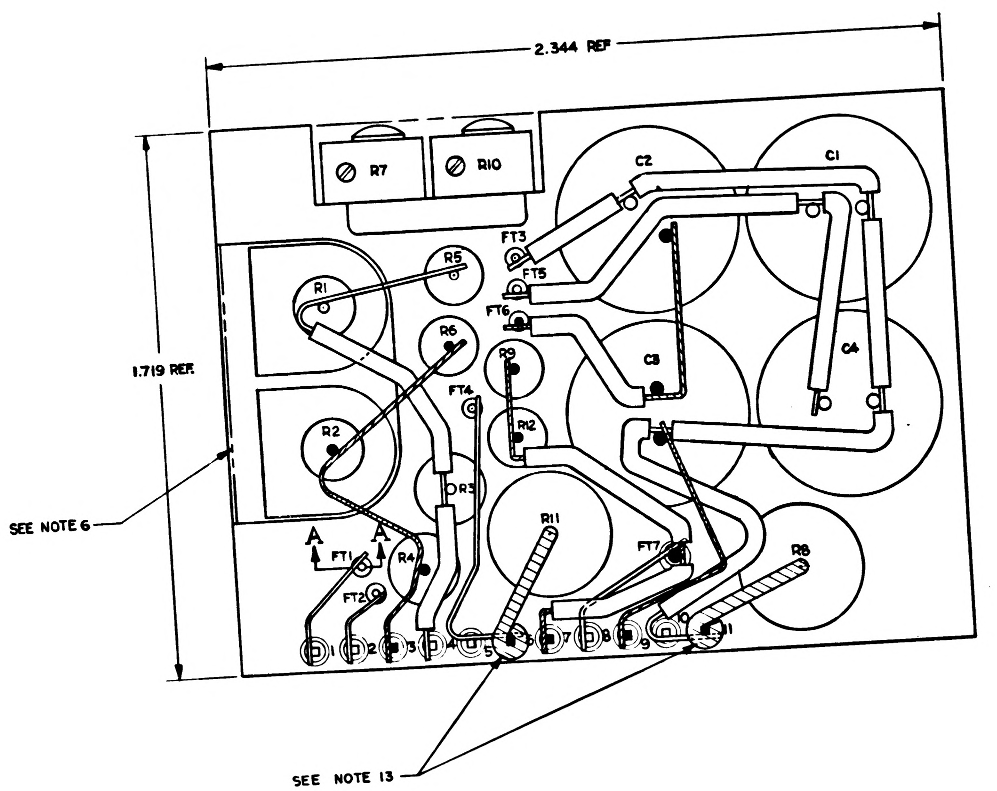
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

TABLE I

~~CONFIGURATION~~	~~BOND BETWEEN WAFER AND HEATSINK~~	~~TOP OF WAFER~~	~~HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE~~
~~WAFER AND FLAT HEATSINK~~	~~100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~WAFER AND ADJACENT VERTICAL HEAT-SINK SURFACE~~	~~CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~HEATSINK FOAM CONTACT SURFACE PERIMETER~~	~~N/A~~	~~N/A~~	~~.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE~~



VIEW B-B
2 PLACES
SEE NOTE 14


2.344 REF
1.719 REF.
R7
R10
C2
C1
R5
R1
FT3
FT5
FT6
R6
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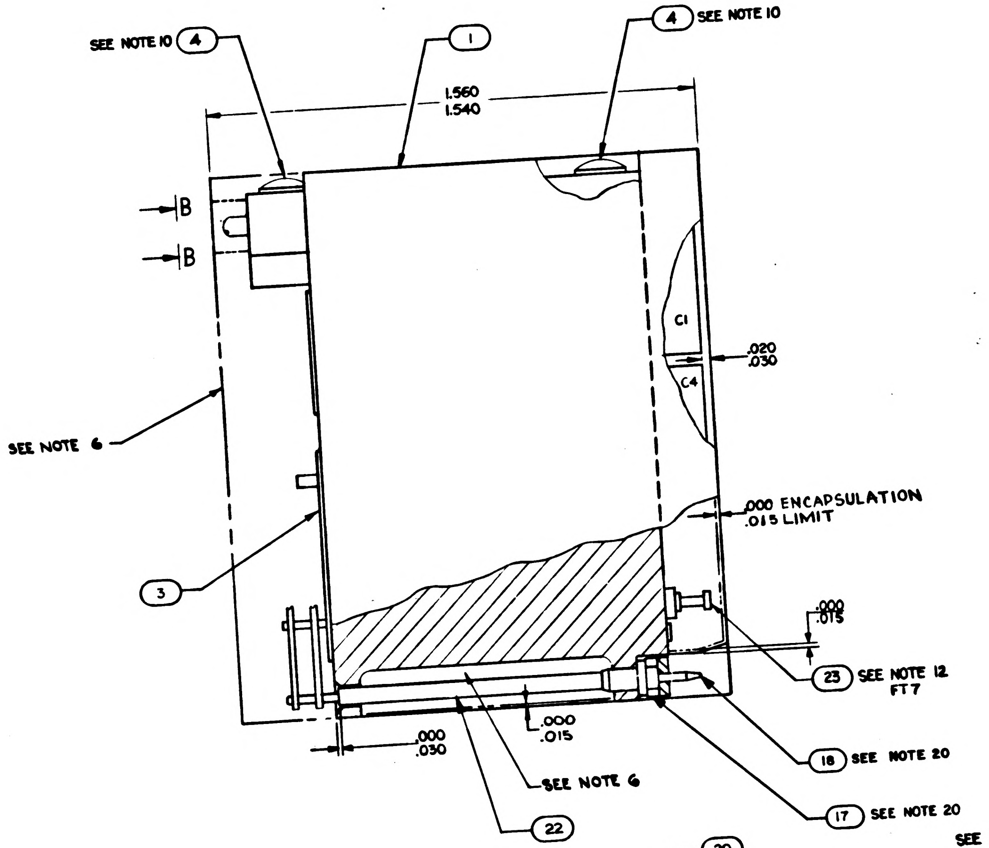
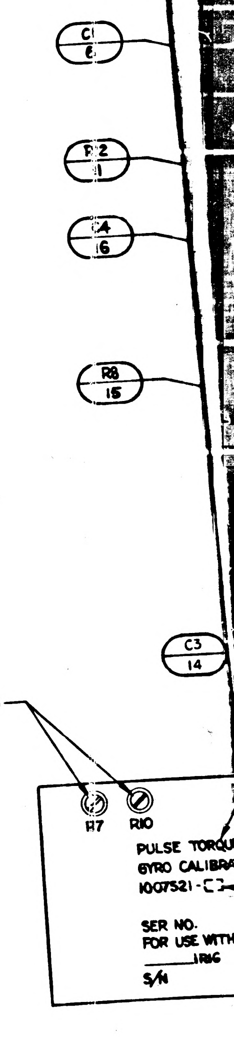
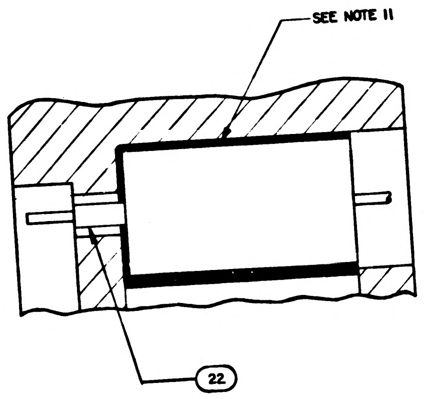
C3
C4
FT4
R12
R2
R3
R11
FT7
R8
A
A
FT1
R4
FT2
1
2
3
4
5
6
7
8
9
10
11
SEE NOTE 6
SEE NOTE 13


SEE NOTE 10
4
1
1.560
1.540
4
SEE NOTE 10
B
B
SEE NOTE 6
C1
C4
.020
.030
.000 ENCAPSULATION
.015 LIMIT
3
.000
.015
23
SEE NOTE 12
FT7
18
SEE NOTE 20
17
SEE NOTE 20
.000
.015
.000
.030
SEE NOTE 6
22


C1
6
R2
1
C4
16
R8
15
C3
14
SEE NOTE 15
R7
R10
PULSE TORQU
GYRO CALIBRA
1007521-[ ]
SER NO.
FOR USE WITH
IRIG
S/N

VIEW A


SEE NOTE 11
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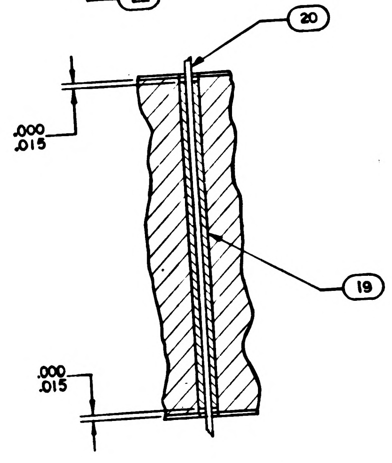
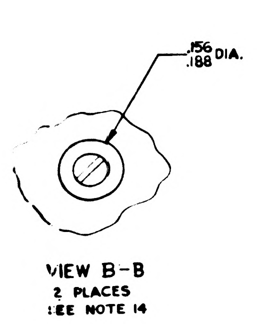
SECTION B-B


20
.000
.015
19
.000
.015

SECTION A-A

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005 EXCEPT WHERE SHOWN.
3. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
4. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
5. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
6. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) USING CURING CYCLE NO.2.
UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED
THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005.
WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE,
THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND
ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED
.015. REMOVE ALL FLASHING.
7. MARK PIN NUMBERS .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE)
PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
PER ND 1002009 METHOD J & CENTRALIZE
8. STAKE FIND NO.5 THRU FIND NO.8 AND FIND NO.10 THRU FIND NO.16
9. CN ~~FIND NO.2 AND~~ FIND NO. 3 FT( ) INDICATES FEEDTHRU.
10. APPLY ZINC CHROMATE PRIMER, MIL-P-8585 PER MIL-P-6808
(AS6) TO THREADS OF FIND NO.4.
11. BOND FIND NO.10 PER ND1002117.
12. CUT FIND NO.23 AT TOP OF TURRET.
13. SOLDER PER ND 1002071.
14. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND.
SEAL ADJUSTING SCREWS PER ND 1002009 METHOD J.
15. AFTER FINAL SYSTEM LEVEL ADJUSTMENT, CHART "A" PER ATP-1007021.
16. C3 AND C4 TO BE SELECTED FROM CHART "B" OR CHART "F" PER ATP 1007021
17. R5 AND R6 TO BE SELECTED FROM CHART "C" PER ATP-1007021.
18. R12 TO BE SELECTED FROM CHART "D" PER ATP-1007021.
19. R11 TO BE SELECTED FROM
20. MUST MEET REQUIREMENTS OF ND1002136
21. R7 TO BE SELECTED FROM CHART "E" PER ATP-1007021.
22. PROCURE PER PS 1007021.
~~23. BOND FIND NO. 23 TO FIND NO.17 PER ND1002237~~
~~24. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
~~25. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
26. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
27. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17310		64	
B		REVISED PER TDRR 19451		2 JUN 65	
C		REVISED PER TDRR 19503		65	RWH
D		REVISED PER TDRR 20143		19 JUN 65	
E		REVISED PER TDRR 21127		31 JUL 65	RWH
F		REVISED PER TDRR 22972		65	
G		REVISED PER TDRR 23888			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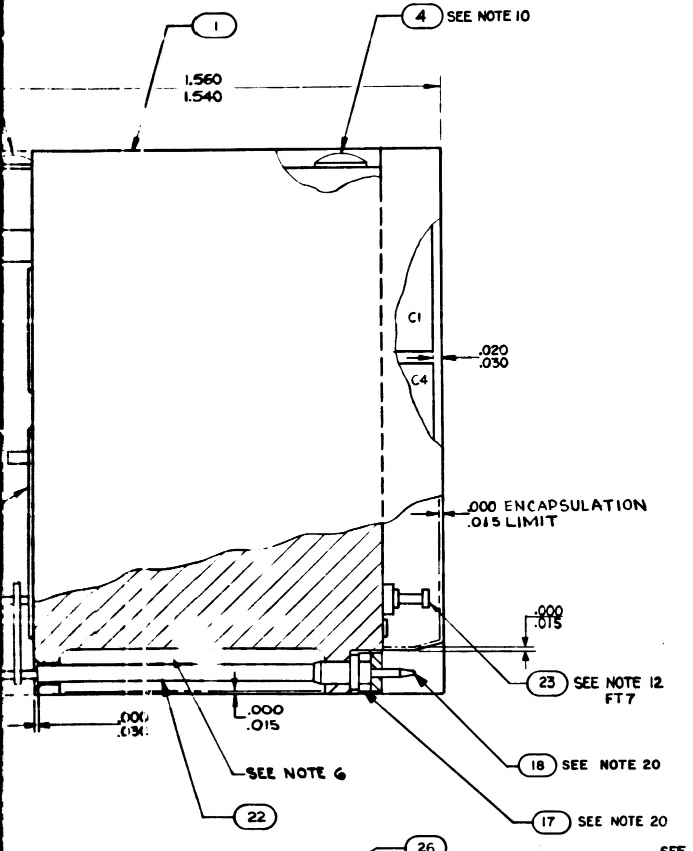
.188 DIA.
VIEW B-B
2 PLACES
SEE NOTE 14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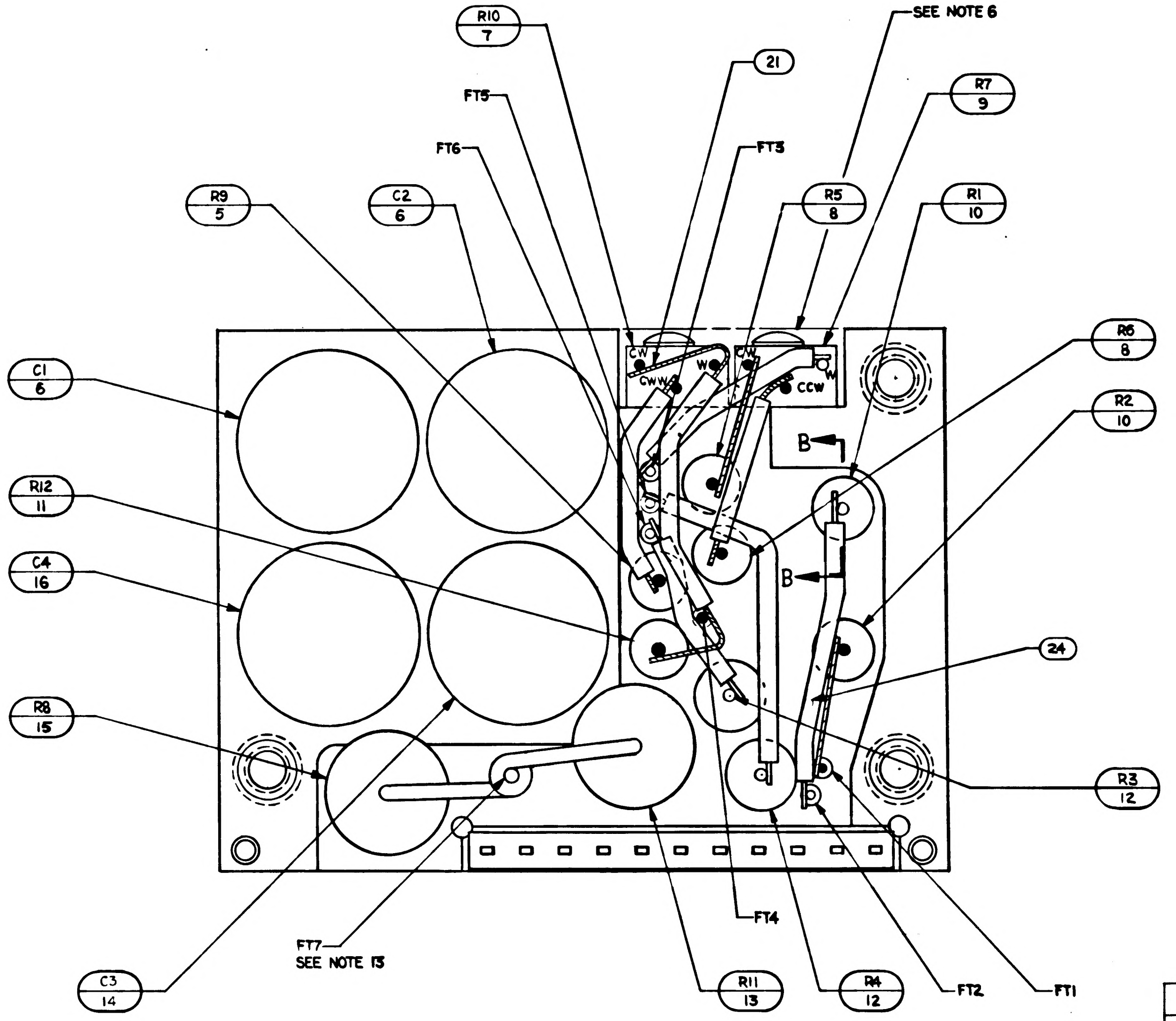
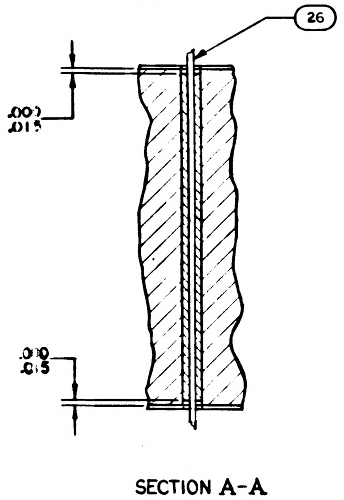
4 SEE NOTE 10
1.560
1.540
C1
C4
.020
.030
.000 ENCAPSULATION
.015 LIMIT
.000
.015
23 SEE NOTE 12
FT7
.000
.015
.000
.015
SEE NOTE 6
18 SEE NOTE 20
17 SEE NOTE 20
22


R10
7
SEE NOTE 6
21
R7
9
FT5
FT3
FT6
R9
5
C2
6
R5
8
R1
10
CW
CCW
CW
CCW
W
W
R6
8
C1
6
B
R2
10
R12
11
C4
16
B
24
R8
15
R3
12
C3
14
FT7
SEE NOTE 13
FT4
R11
13
R4
12
FT2
FT1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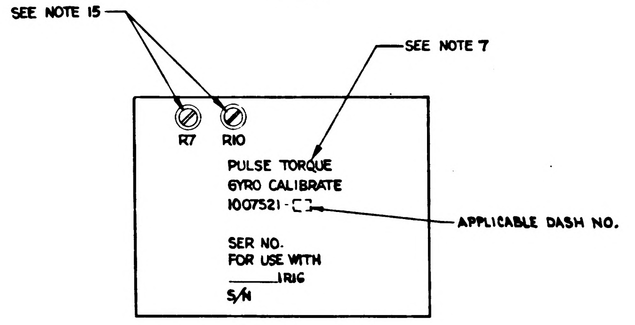
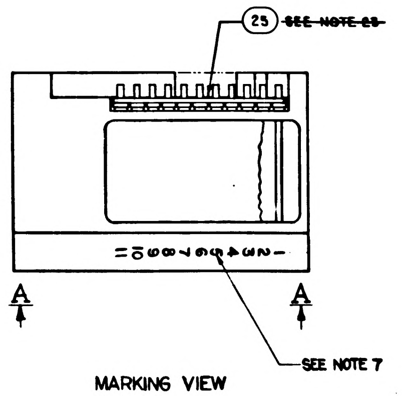
.015
.010
.015

SECTION A-A


SEE NOTE 15
SEE NOTE 7
R7
R10
PULSE TORQUE
GYRO CALIBRATE
1007521-□
SER NO.
FOR USE WITH
1RIG
S/N
APPLICABLE DASH NO.

VIEW A-A


23
~~SEE NOTE 23~~
A
A
SEE NOTE 7

MARKING VIEW
SCALE 2/1

CHART B			
PART NO	VALUE	PART NO	VALUE
1010377-337	82.5K	1010377-281	53K
-338	83.75K	-282	64K
-339	85.0K	-283	73K
-344	86.25K	-284	127K
-2	87.5K	-285	136K
-3	88.75K	-286	145K
-4	90.0K	-287	154K
-5	91.25K	-288	163K
-6	92.5K	-289	172K
-7	93.75K	-290	181K
-8	95.0K	-291	190K
-9	96.25K	-292	199K
-10	97.5K	-293	208K
-11	98.75K	-294	217K
-12	100.0K	-295	226K
-13	101.25K	-296	235K
-14	102.5K	-297	244K
-15	103.75K	-298	253K
-16	105.0K	-299	262K
-17	106.25K	-300	271K
-18	107.5K		
-19	108.75K		
-20	110.0K		
-21	111.25K		
-22	112.5K		
-340	113.75K		
-341	115.0K		
-342	116.25K		
-343	117.5K		

—021 CONFIGURATION

CHART F			
PART NO.	VALUE	PART NO.	VALUE
1010377-76	82.5K	1010377-281	53K
-77	83.75K	-282	64K
-78	85.0K	-283	73K
-79	86.25K	-284	127K
-80	87.5K	-285	136K
-81	88.75K	-286	145K
-82	90.0K	-287	154K
-83	91.25K	-288	163K
-84	92.5K	-289	172K
-85	93.75K	-290	181K
-86	95.0K	-291	190K
-87	96.25K	-292	199K
-88	97.5K	-293	208K
-89	98.75K	-294	217K
-90	100.0K	-295	226K
-91	101.25K	-296	235K
-92	102.5K	-297	244K
-93	103.75K	-298	253K
-94	105.0K	-299	262K
-95	106.25K	-300	271K
-96	107.5K		
-97	108.75K		
-98	110.0K		
-99	111.25K		
-100	112.5K		
-101	113.75K		
-102	115.0K		
-103	116.25K		
-104	117.5K		

—011 CONFIGURATION

CHART A	
PART NO.	VALUE UF
1010289-019	0.0350
1010289-020	0.0375
1010289-021	0.0400
1010289-022	0.0425
1010289-023	0.0450
1010289-024	0.0475
1010289-025	0.0500
1010289-026	0.0525
1010289-027	0.0550
1010289-028	0.0575
1010289-029	0.0600
1010289-030	0.0625
1010289-031	0.0650
1010289-032	0.0675
1010289-033	0.0700
1010289-034	0.0725
1010289-035	0.0750
1010289-036	0.0775
1010289-016	0.0220
1010289-017	0.0228
1010289-018	0.0330

CHART E	
PART NO	VALUE
1010373-9	5K
1010373-10	10K

CHART C	
PART NO.	VALUE
1010283-12	25.13K
-13	12.56K
-14	8.38K
-15	6.28K
-16	5.03K

CHART D	
PART NO.	VALUE Ω
1010834-13	49.001
-14	49.581
-15	50.175
-16	50.784
-17	51.407
-18	52.046
-19	52.701
-20	53.373
-21	54.062
-22	54.772

		AR	AR		1010848-2	WIRE, ELECTRICAL - NICKEL	26
		—	☒		1010011	SCHEMATIC	REF
		1	1		1008540-11	GASKET, CONNECTOR-MINIATURE	25
		☒	—		1009542	SCHEMATIC	REF
		AR	AR		1006776-21	INSULATION, SLEEVING	24
		1	1		1006784-6	TERMINAL, FEEDTHRU, INSULATED	23
		AR	AR		1006776-20	INSULATION, SLEEVING	22
		AR	AR		1006757-1	WIRE, ELEC .010 X .020	21
		~~AR~~	~~AR~~		~~1006757-8~~	~~WIRE, ELEC .020 DIA~~	20
		~~AR~~	~~AR~~		~~1006776-22~~	~~INSULATION, SLEEVING~~	19
		11	11		1006782-4	CONTACT, WRAPOST, MALE MIN	18
		11	11		1006775	INSULATOR, WRAPOST, MALE, MIN	17
		1	1		SEE NOTE 16	CAPACITOR, .0220 UF-.0775UF 200V ±1%	16
		1	1		1010834-12	RESISTOR, FXD, WW 10Ω 1W ±.01%	15
		1	1		SEE NOTE 16	CAPACITOR, .0220 UF-.0775UF 200V ±1%	14
		1	1		SEE NOTE 19	RESISTOR, FXD, WW 1W ±.01%	13
		2	2		1010389-93	RESISTOR, FXD, WW 600Ω 3W ±1%	12
		1	1		SEE NOTE 18	RESISTOR, FXD, WW 1/10W ±.1%	11
		2	2		1010262-1	RESISTOR, FXD, WW 525Ω 10W ±1%	10
		1	1		SEE NOTE 21	RESISTOR, VAR, 1W ±5%	9
		2	2		SEE NOTE 17	RESISTOR, FXD, WW 1/10W	8
		1	1		1010373-8	RESISTOR, VAR, 2K 1W ±5%	7
		2	2		1010289-036	CAPACITOR, POLY, .0775UF 200V ±.5%	6
		1	1		1010283-17	RESISTOR, FXD, WW 5.1K 1/10W ±.1%	5
		4	4		1000093-3	SCREW, BUTTON HD	4
		1	1		1008023-1	INSULATOR	3
		~~1~~	~~1~~		~~1008023-2~~	~~INSULATOR~~	2
		1	1		1007020	HEATSINK	1
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
QUANTITY REQUIRED					LIST OF MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN S. Ayre DATE 9 SEP 64
CHECKED A. Udrach 15 SEP 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PULSE TORQUE GYRO CALIBRATE ASSEMBLY

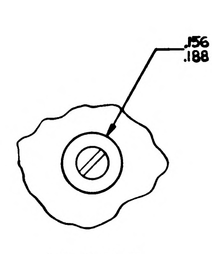
CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007521
SCALE 5/1
WT
SHEET 1 OF 1

1007521 G

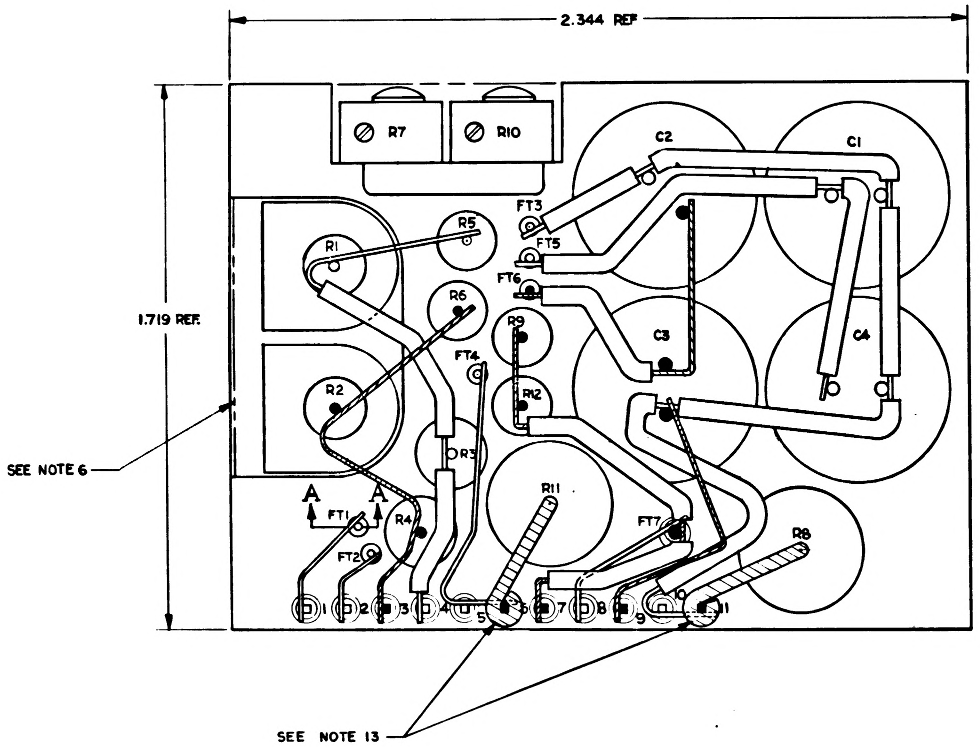
27-1007521

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEAT-SINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE



VIEW B-B
2 PLACES
SEE NOTE 14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R7
R10
C2
C1
R1
R5
FT3
FT5
FT6
R6
R9
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C4
R2
FT4
R12
R3
R11
A
A
FT1
R4
FT2
FT7
R8
1
2
3
4
5
6
7
8
9
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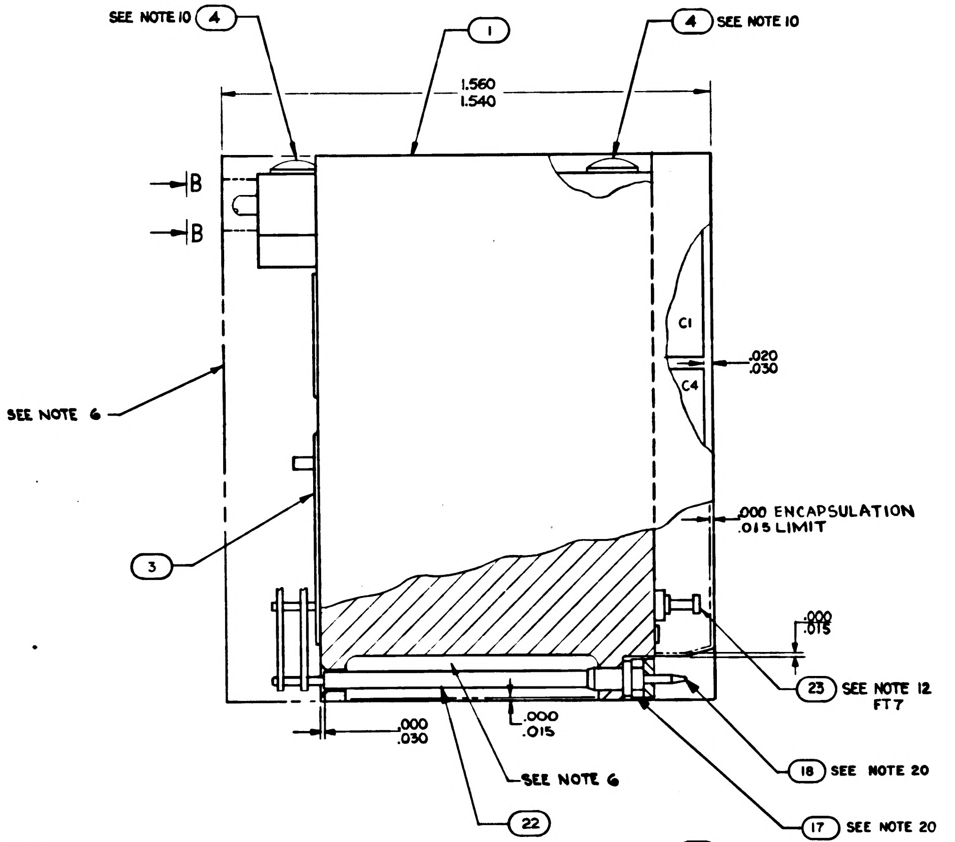
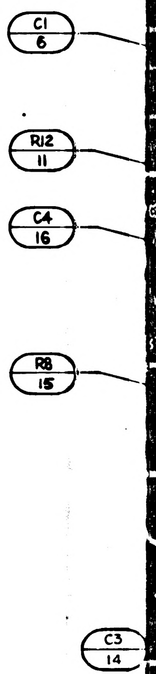
11
SEE NOTE 6
SEE NOTE 13


SEE NOTE 10
4
1
4
SEE NOTE 10
1.560
1.540
B
B
C1
C4
.020
.030
SEE NOTE 6
.000 ENCAPSULATION
.015 LIMIT
3
.000
.015
23
SEE NOTE 12
FT7
.000
.030
.000
.015
SEE NOTE 6
18
SEE NOTE 20
22
17
SEE NOTE 20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R8
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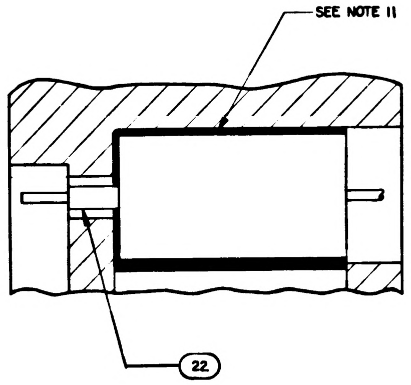
SEE NOTE 11
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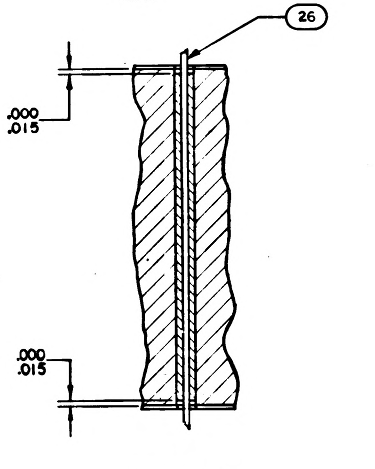
SECTION B-B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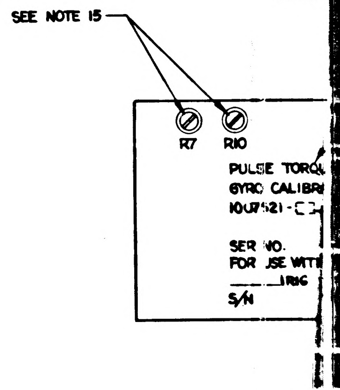
SECTION A-A

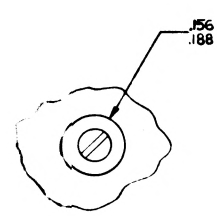

C3
14
SEE NOTE 15
R7
R10
PULSE TORQ
GYRO CALIBR
1007521-
SER NO.
FOR USE WIT
IRIG
S/N

VIEW A

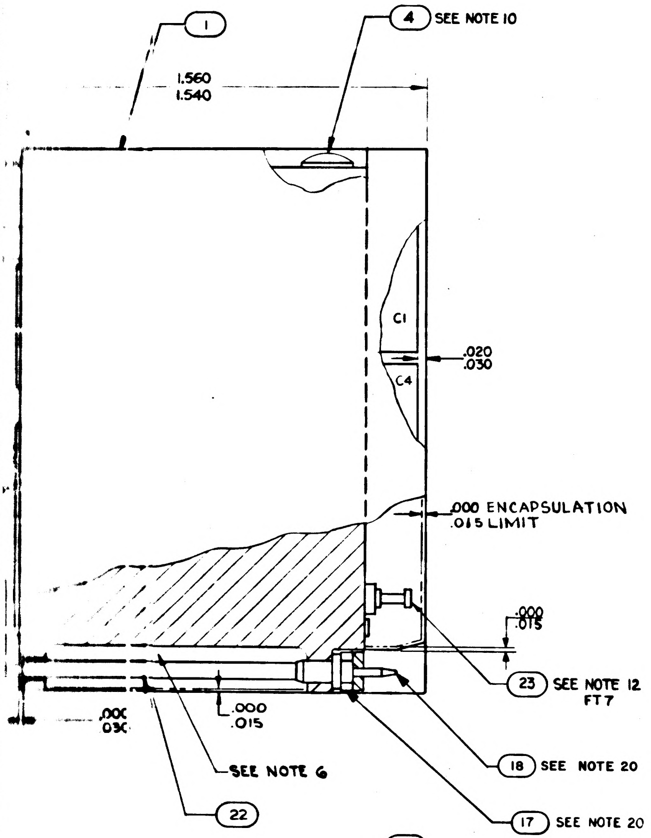
NOTES

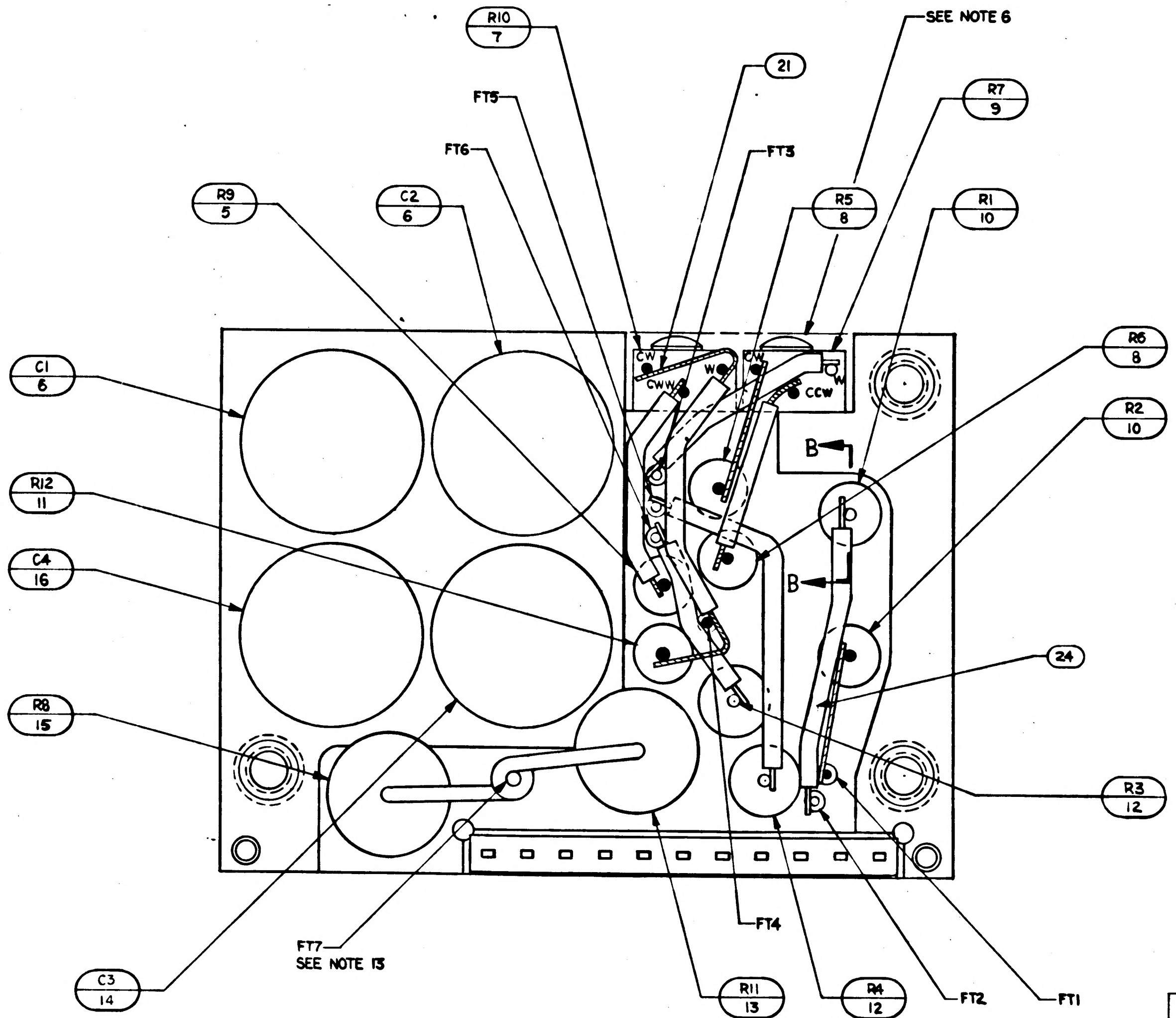
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005 EXCEPT WHERE SHOWN.
3. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
4. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
5. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
6. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) USING CURING CYCLE NO.2. UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
7. MARK PIN NUMBERS .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
8. STAKE FIND NO.5 THRU FIND NO.8 AND FIND NO.10 THRU FIND NO.16 PER ND 1002009 METHOD J & CENTRALIZE
9. CN ~~FIND NO.2 AND~~ FIND NO. 3 FT( ) INDICATES FEEDTHRU.
10. APPLY ZINC CHROMATE PRIMER, MIL-P-8585 PER MIL-P-6808 (AS6) TO THREADS OF FIND NO.4.
11. BOND FIND NO.10 PER ND1002117.
12. CUT FIND NO. 23 AT TOP OF TURRET.
13. SOLDER PER ND 1002071.
14. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND.
15. AFTER FINAL SYSTEM LEVEL ADJUSTMENT, SEAL ADJUSTING SCREWS PER ND 1002009 METHOD J.
16. C3 AND C4 TO BE SELECTED FROM CHART "A" PER ATP-1007021.
17. R5 AND R6 TO BE SELECTED FROM CHART "B" OR CHART "F" PER ATP 1007021
18. R12 TO BE SELECTED FROM CHART "C" PER ATP-1007021.
19. R11 TO BE SELECTED FROM CHART "D" PER ATP-1007021.
20. MUST MEET REQUIREMENTS OF ND1002136
21. R7 TO BE SELECTED FROM CHART "E" PER ATP-1007021.
22. PROCURE PER PS 1007021.
23. ~~BOND FIND NO. 25 TO FIND NO.17 PER ND1002297~~
24. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
26. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
27. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

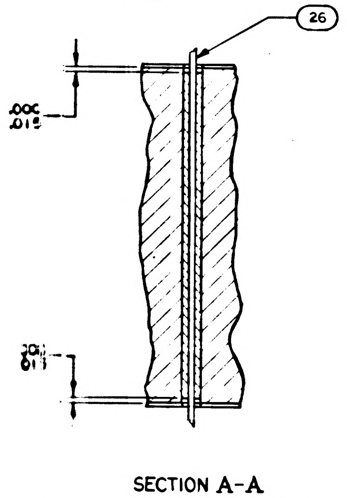
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APP'D
A		REVISED PER TDRR17310		12-MAR-64	N. G. EF
B		REVISED PER TDRR 19451		2 JUN 65	J.K.
C		REVISED PER TDRR 19503		9 JUN 65	WJK RWH
D		REVISED PER TDRR 20143		19 JUN 65	RH
E		REVISED PER TDRR 21127		31 JUL 65	RLP RWH
F		REVISED PER TDRR 22972		11 OCT 65	JWP EF
G		REVISED PER TDRR 23888		16 NOV 65	JHP
H		REVISED PER TDRR 26397		23 FEB 66	RLP



VIEW B-B
2 PLACES
SEE NOTE 14







SECTION A-A

[illegible] BY FIND NO. (27) USING INSULATION
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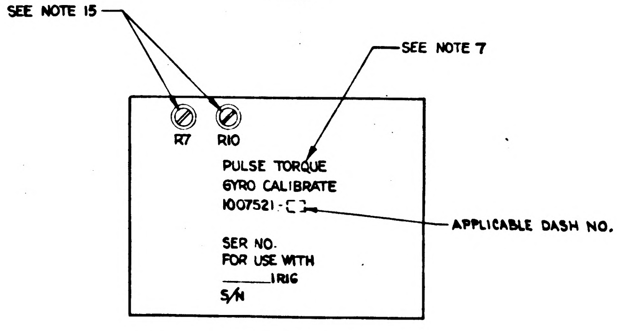
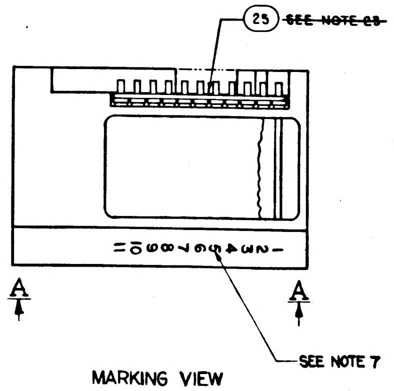
[illegible]ING.



VIEW A-A



MARKING VIEW
SCALE 2/1

CHART B

PART NO	VALUE	PART NO	VALUE
1010377-337	82.5K	1010377-281	53K
-338	83.75K	-282	64K
-339	85.0K	-283	73K
-344	86.25K	-284	127K
-2	87.5K	-285	136K
-3	88.75K	-286	145K
-4	90.0K	-287	154K
-5	91.25K	-288	163K
-6	92.5K	-289	172K
-7	93.75K	-290	181K
-8	95.0K	-291	190K
-9	96.25K	-292	199K
-10	97.5K	-293	208K
-11	98.75K	-294	217K
-12	100.0K	-295	226K
-13	101.25K	-296	235K
-14	102.5K	-297	244K
-15	103.75K	-298	253K
-16	105.0K	-299	262K
-17	106.25K	-300	271K
-18	107.5K		
-19	108.75K		
-20	110.0K		
-21	111.25K		
-22	112.5K		
-340	113.75K		
-341	115.0K		
-342	116.25K		
-343	117.5K		

— 021 CONFIGURATION

CHART F

PART NO.	VALUE	PART NO.	VALUE
1010377-76	82.5K	1010377-281	53K
-77	83.75K	-282	64K
-78	85.0K	-283	73K
-79	86.25K	-284	127K
-80	87.5K	-285	136K
-81	88.75K	-286	145K
-82	90.0K	-287	154K
-83	91.25K	-288	163K
-84	92.5K	-289	172K
-85	93.75K	-290	181K
-86	95.0K	-291	190K
-87	96.25K	-292	199K
-88	97.5K	-293	208K
-89	98.75K	-294	217K
-90	100.0K	-295	226K
-91	101.25K	-296	235K
-92	102.5K	-297	244K
-93	103.75K	-298	253K
-94	105.0K	-299	262K
-95	106.25K	-300	271K
-96	107.5K		
-97	108.75K		
-98	110.0K		
-99	111.25K		
-100	112.5K		
-101	113.75K		
-102	115.0K		
-103	116.25K		
-104	117.5K		

— 011 CONFIGURATION

CHART E

PART NO	VALUE
1010373-9	5K
1010373-10	10K

CHART C

PART NO.	VALUE
1010283-12	25.13K
-13	12.56K
-14	8.38K
-15	6.28K
-16	5.03K

CHART D

PART NO.	VALUE Ω
1010834-13	49.001
-14	49.581
-15	50.175
-16	50.784
-17	51.407
-18	52.046
-19	52.701
-20	53.373
-21	54.062
-22	54.772

CHART A

PART NO.	VALUE UF
1010289-019	0.0350
1010289-020	0.0375
1010289-021	0.0400
1010289-022	0.0425
1010289-023	0.0450
1010289-024	0.0475
1010289-025	0.0500
1010289-026	0.0525
1010289-027	0.0550
1010289-028	0.0575
1010289-029	0.0600
1010289-030	0.0625
1010289-031	0.0650
1010289-032	0.0675
1010289-033	0.0700
1010289-034	0.0725
1010289-035	0.0750
1010289-036	0.0775
1010289-016	0.0220
1010289-017	0.0228
1010289-018	0.0330

031	021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	—	—		SEE NOTE 28	MOISTUREPROOFING	27
AR	AR	AR		1010848-2	WIRE, ELECTRICAL - NICKEL	26
—	—	☒		1010011	SCHEMATIC	REF
1	1	1		1008540-11	GASKET, CONNECTOR-MINIATURE	25
☒	☒	—		1009542	SCHEMATIC	REF
AR	AR	AR		1006776-21	INSULATION, SLEEVING	24
1	1	1		1006784-6	TERMINAL, FEEDTHRU, INSULATED	23
AR	AR	AR		1006776-20	INSULATION, SLEEVING	22
AR	AR	AR		1006757-1	WIRE, ELEC .010 X .020	21
	~~AR~~	~~AR~~		~~1006757-8~~	~~WIRE, ELEC .020 DIA~~	20
	~~AR~~	~~AR~~		~~1006776-22~~	~~INSULATION, SLEEVING~~	19
11	11	11		1006782-4	CONTACT, WRAPOST, MALE MIN	18
11	11	11		1006775	INSULATOR, WRAPOST, MALE, MIN	17
1	1	1		SEE NOTE 16	CAPACITOR, .0220 UF-.0775UF 200V ±1%	16
1	1	1		1010834-12	RESISTOR, FXD, WW 10Ω 1W ±.01%	15
1	1	1		SEE NOTE 16	CAPACITOR, .0220 UF-.0775UF 200V ±1%	14
1	1	1		SEE NOTE 19	RESISTOR, FXD, WW 1W ±.01%	13
2	2	2		1010389-93	RESISTOR, FXD, WW 600Ω 3W ±1%	12
1	1	1		SEE NOTE 18	RESISTOR, FXD, WW 1/10W ±.1%	11
2	2	2		1010262-1	RESISTOR, FXD, WW 525Ω 10W ±1%	10
1	1	1		SEE NOTE 21	RESISTOR, VAR, 1W ±5%	9
2	2	2		SEE NOTE 17	RESISTOR, FXD, WW 1/10W	8
1	1	1		1010373-8	RESISTOR, VAR, 2K 1W ±5%	7
2	2	2		1010289-036	CAPACITOR, POLY, .0775UF 200V ±.5%	6
1	1	1		1010283-17	RESISTOR, FXD, WW 5.1K 1/10W ±.1%	5
4	4	4		1000093-3	SCREW, BUTTON HD	4
1	1	1		1008023-1	INSULATOR	3
	~~1~~	~~1~~		~~1008023-2~~	~~INSULATOR~~	2
1	1	1		1007020	HEATSINK	1

QUANTITY REQUIRED
LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN S. Agne DATE 9 SEP 64
CHECKED A. Aldrich 15 SEP 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PULSE TORQUE GYRO CALIBRATE ASSEMBLY

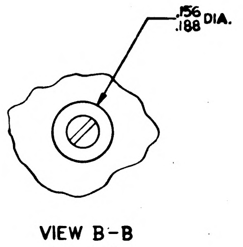
CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007521
SCALE 5/1
WT
SHEET 1 OF 1

1007521

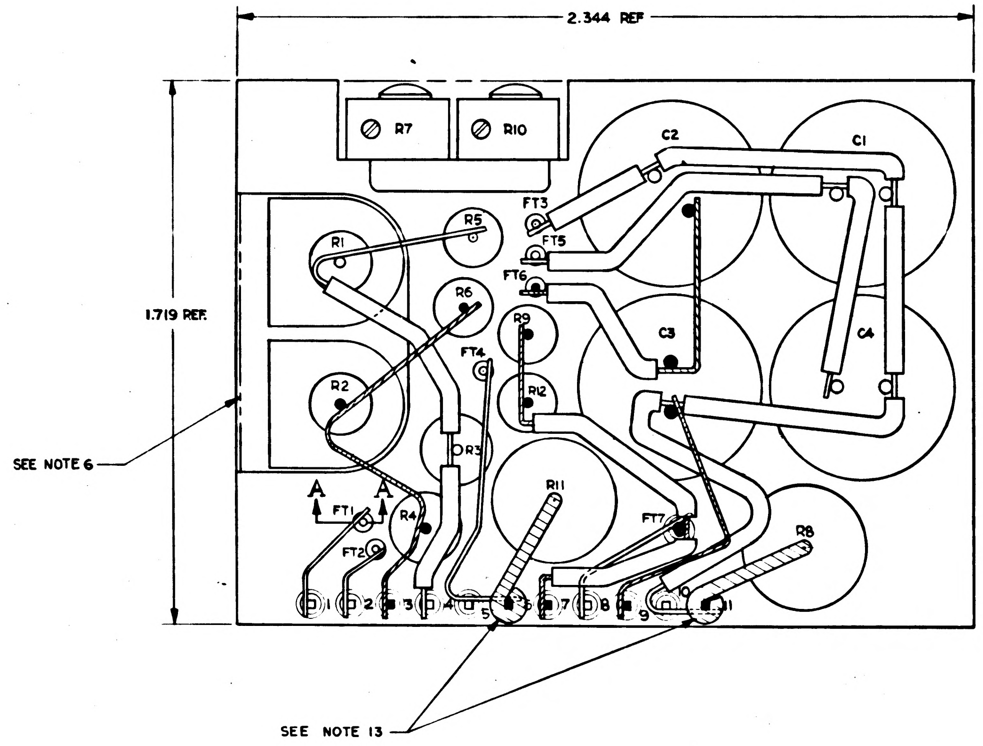
271007521

TABLE I

~~CONFIGURATION~~	~~BOND BETWEEN WAFER AND HEATSINK~~	~~TOP OF WAFER~~	~~HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE~~
~~WAFER AND FLAT HEATSINK~~	~~100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~WAFER AND ADJACENT VERTICAL HEAT-SINK SURFACE~~	~~CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SUKFACE~~	~~N/A~~
~~HEATSINK FOAM CONTACT SURFACE PERIMETER~~	~~N/A~~	~~N/A~~	~~.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE~~



VIEW B-B
2 PLACES
SEE NOTE 14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C3
C4
R2
R12
R3
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FT7
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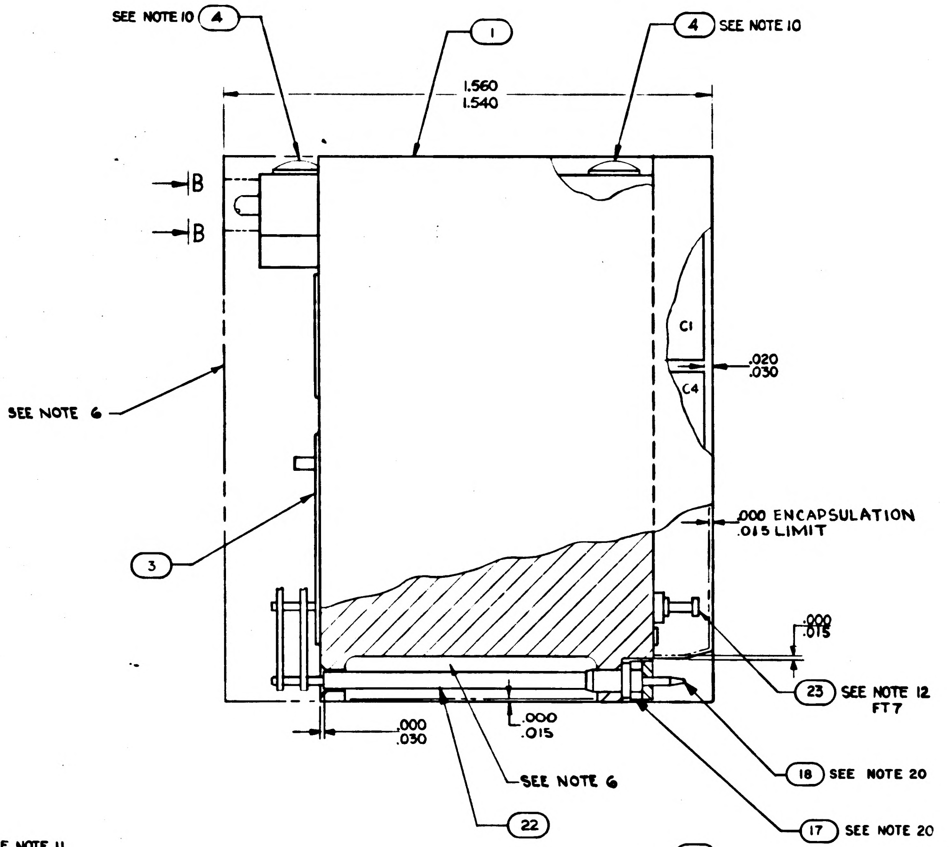
FT1
R4
FT2
1 2 3 4 5 6 7 8 9 10 11
SEE NOTE 6
SEE NOTE 13


SEE NOTE 10
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SEE NOTE 10
1.560
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B
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C1
C4
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SEE NOTE 6
3
.000 ENCAPSULATION
.015 LIMIT
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23
SEE NOTE 12
FT7
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SEE NOTE 6
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SEE NOTE 20
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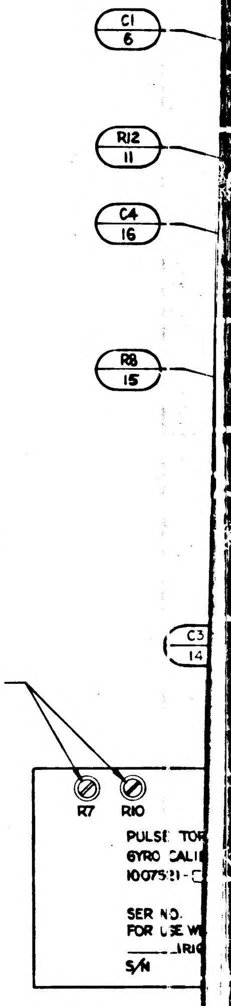
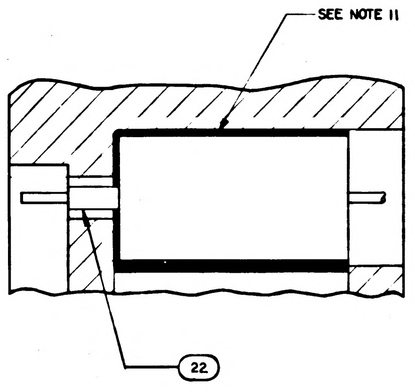
SEE NOTE 20


C1
6
R12
11
C4
16
R8
15
C3
14
SEE NOTE 15
R7
R10
PULSE TOR
GYRO CALI
1007521-
SER NO.
FOR USE W
S/N

VIEW A


SEE NOTE 11
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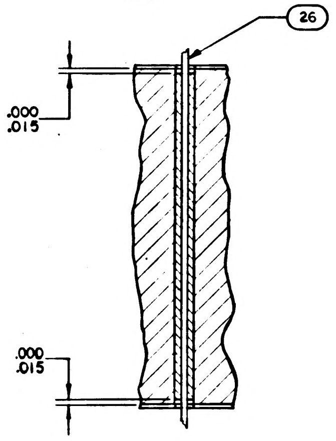
SECTION B-B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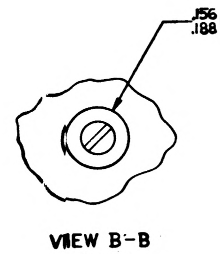
SECTION A-A

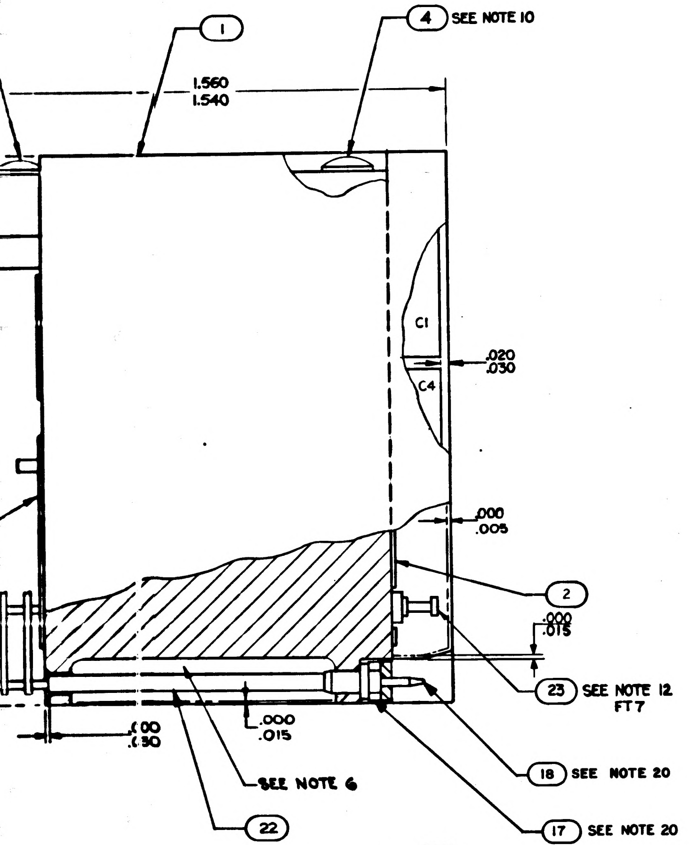
NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005 EXCEPT WHERE SHOWN.
3. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
4. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
5. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
6. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) USING CURING CYCLE NO.2. UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
7. MARK PIN NUMBERS .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
8. STAKE FIND NO.5 THRU FIND NO.8 AND FIND NO.10 THRU FIND NO.16 PER ND 1002009 METHOD J & CENTRALIZE
9. CN ~~FIND NO.2 AND~~ FIND NO. 3 FT( ) INDICATES FEEDTHRU.
10. APPLY ZINC CHROMATE PRIMER, MIL-P-8585 PER MIL-P-6808 (AS6) TO THREADS OF FIND NO.4.
11. BOND FIND NO.10 PER ND1002117.
12. CUT FIND NO. 23 AT TOP OF TURRET.
13. SOLDER PER ND 1002071.
14. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND.
15. AFTER FINAL SYSTEM LEVEL ADJUSTMENT, SEAL ADJUSTING SCREWS PER ND 1002009 METHOD J.
16. C3 AND C4 TO BE SELECTED FROM CHART "A" PER ATP-1007021.
17. R5 AND R6 TO BE SELECTED FROM CHART "B" OR CHART "F" PER ATP 1007021
18. R12 TO BE SELECTED FROM CHART "C" PER ATP-1007021.
19. R11 TO BE SELECTED FROM CHART "D" PER ATP-1007021.
20. MUST MEET REQUIREMENTS OF ND1002136
21. R7 TO BE SELECTED FROM CHART "E" PER ATP-1007021.
22. PROCURE PER PS 1007021.
~~23. BOND FIND NO. 25 TO FIND NO.17 PER ND1002237~~
~~24. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
~~25. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
26. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
27. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
28. MOISTUREPROOF PER ND 1002292 AS REQUIRED BY FIND NO. (27) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.

REVISIONS 1573				
SYM	ZONE	DESCRIPTION	DATE	APPD
		CHG NO.		



VIEW B-B
2 PLACES
SEE NOTE 14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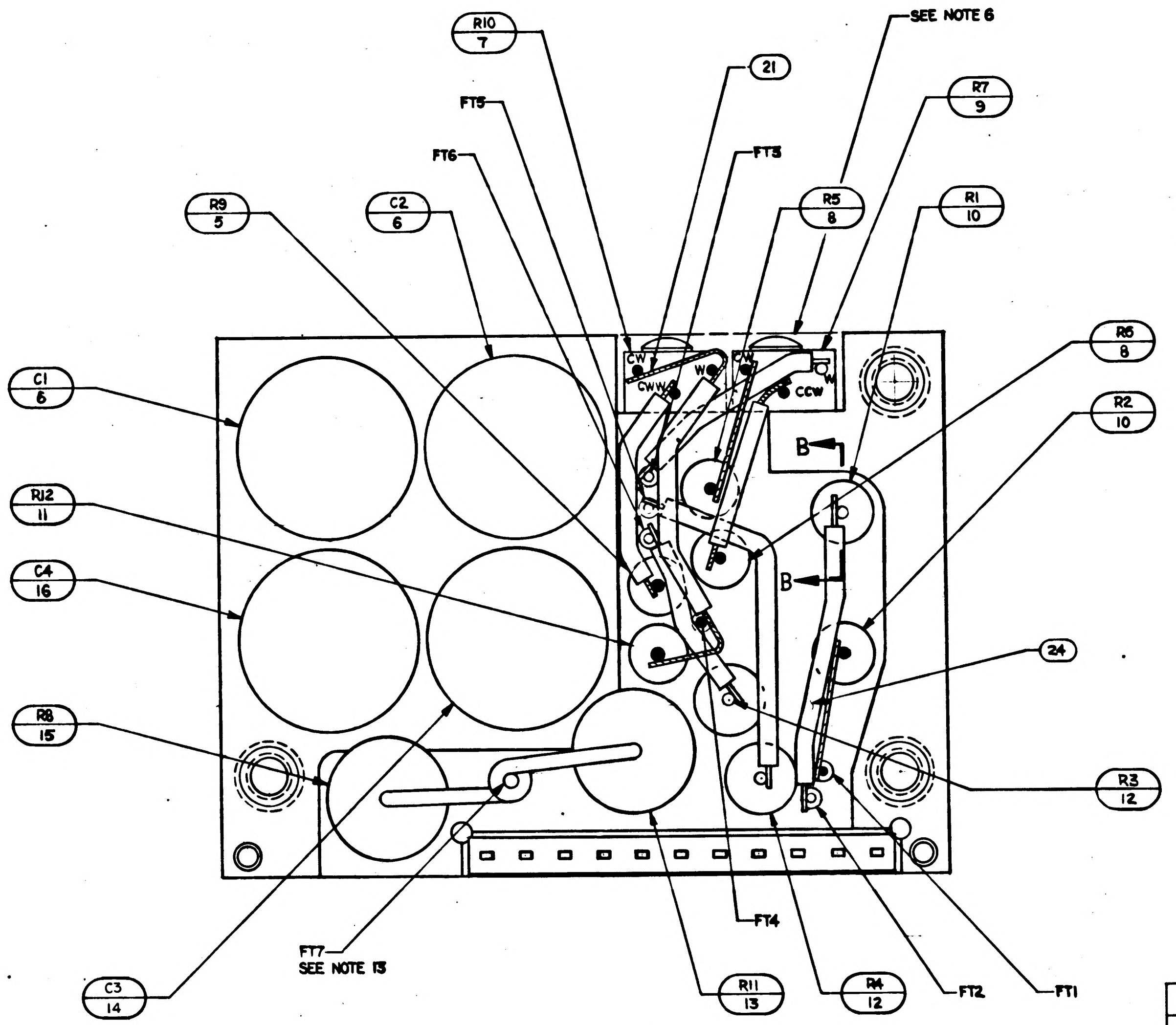
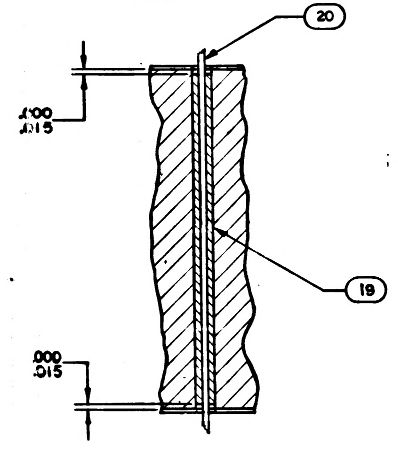
4 SEE NOTE 10
1.560
1.540
C1
C4
.020
.030
.000
.005
2
.000
.015
23 SEE NOTE 12
FT7
.000
.015
.000
.030
SEE NOTE 6
18 SEE NOTE 20
17 SEE NOTE 20
22


SEE NOTE 6
R10
7
21
R7
9
FT5
FT3
FT6
R5
8
R1
10
R9
5
C2
6
CW
CCW
W
CCW
W
C1
6
R6
8
R2
10
B
B
R12
11
C4
16
24
R8
15
R3
12
FT7
SEE NOTE 13
C3
14
FT4
R11
13
R4
12
FT2
FT1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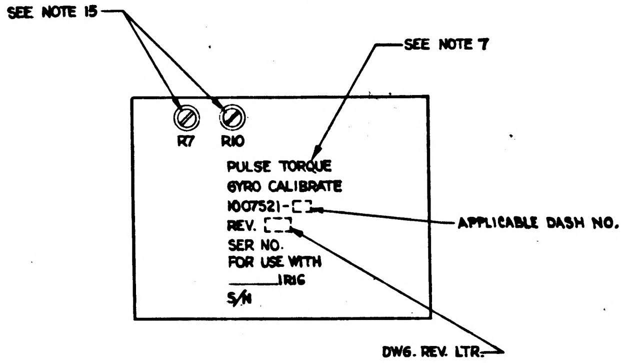
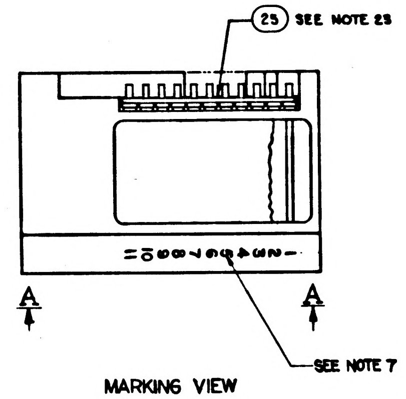
.015
19
.000
.015

SECTION A-A


SEE NOTE 15
SEE NOTE 7
R7
R10
PULSE TORQUE
GYRO CALIBRATE
1007521-[ ]
REV. [ ]
SER NO.
FOR USE WITH
IRIG
S/N
APPLICABLE DASH NO.
DWG. REV. LTR.

VIEW A-A


25 SEE NOTE 25
A
A
SEE NOTE 7

MARKING VIEW
SCALE 2/1

CHART B

PART NO	VALUE	PART NO	VALUE
1010377-337	82.5K	1010377-281	53K
-338	83.75K	-282	64K
-339	85.0K	-283	73K
-344	86.25K	-284	127K
-2	87.5K	-285	136K
-3	88.75K	-286	145K
-4	90.0K	-287	154K
-5	91.25K	-288	163K
-6	92.5K	-289	172K
-7	93.75K	-290	181K
-8	95.0K	-291	190K
-9	96.25K	-292	199K
-10	97.5K	-293	208K
-11	98.75K	-294	217K
-12	100.0K	-295	226K
-13	101.25K	-296	235K
-14	102.5K	-297	244K
-15	103.75K	-298	253K
-16	105.0K	-299	262K
-17	106.25K	-300	271K
-18	107.5K		
-19	108.75K		
-20	110.0K		
-21	111.25K		
-22	112.5K		
-340	113.75K		
-341	115.0K		
-342	116.25K		
-343	117.5K		

-021 CONFIGURATION

CHART F

PART NO.	VALUE	PART NO.	VALUE
1010377-76	82.5K	1010377-281	53K
-77	83.75K	-282	64K
-78	85.0K	-283	73K
-79	86.25K	-284	127K
-80	87.5K	-285	136K
-81	88.75K	-286	145K
-82	90.0K	-287	154K
-83	91.25K	-288	163K
-84	92.5K	-289	172K
-85	93.75K	-290	181K
-86	95.0K	-291	190K
-87	96.25K	-292	199K
-88	97.5K	-293	208K
-89	98.75K	-294	217K
-90	100.0K	-295	226K
-91	101.25K	-296	235K
-92	102.5K	-297	244K
-93	103.75K	-298	253K
-94	105.0K	-299	262K
-95	106.25K	-300	271K
-96	107.5K		
-97	108.75K		
-98	110.0K		
-99	111.25K		
-100	112.5K		
-101	113.75K		
-102	115.0K		
-103	116.25K		
-104	117.5K		

-011 CONFIGURATION

CHART A

PART NO.	VALUE UF
1010289-019	0.0350
1010289-020	0.0375
1010289-021	0.0400
1010289-022	0.0425
1010289-023	0.0450
1010289-024	0.0475
1010289-025	0.0500
1010289-026	0.0525
1010289-027	0.0550
1010289-028	0.0575
1010289-029	0.0600
1010289-030	0.0625
1010289-031	0.0650
1010289-032	0.0675
1010289-033	0.0700
1010289-034	0.0725
1010289-035	0.0750
1010289-036	0.0775
1010289-016	0.0220
1010289-017	0.0228
1010289-018	0.0330

CHART E

PART NO	VALUE
1010373-9	5K
1010373-10	10K

CHART C

PART NO.	VALUE
1010288-12	25.13K
-13	12.56K
-14	8.38K
-15	6.28K
-16	5.03K

CHART D

PART NO.	VALUE Ω
1010253-13	49.001
-14	49.581
-15	50.175
-16	50.784
-17	51.407
-18	52.046
-19	52.701
-20	53.373
-21	54.062
-22	54.772

QUANTITY REQUIRED		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		–	☒		1010011	SCHEMATIC	REF
		1	1		1008540-11	GASKET, CONNECTOR-MINIATURE	25
		☒	–		1009542	SCHEMATIC	REF
		AR	AR		1006776-21	INSULATION, SLEEVING	24
		1	1		1006784-6	TERMINAL, FEEDTHRU, INSULATED	23
		AR	AR		1006776-20	INSULATION, SLEEVING	22
		AR	AR		1006757-1	WIRE, ELEC .010 X .020	21
		AR	AR		1006757-8	WIRE, ELEC .020 DIA	20
		AR	AR		1006776-22	INSULATION, SLEEVING	19
		11	11		1006782-4	CONTACT, WRAPOST, MALE MIN	18
		11	11		1006775	INSULATOR, WRAPOST, MALE, MIN	17
		1	1		SEE NOTE 16	CAPACITOR, .0220 UF-.0775UF 200V ±1%	16
		1	1		1010253-12	RESISTOR, FXD, WW 10Ω 1W ±.01%	15
		1	1		SEE NOTE 16	CAPACITOR, .0220 UF-.0775UF 200V ±1%	14
		1	1		SEE NOTE 19	RESISTOR, FXD, WW 1W ±.01%	13
		2	2		1010389-93	RESISTOR, FXD, WW 600Ω 3W ±1%	12
		1	1		SEE NOTE 18	RESISTOR, FXD, WW 1/10W ±.1%	11
		2	2		1010262-1	RESISTOR, FXD, WW 525Ω 10W ±1%	10
		1	1		SEE NOTE 21	RESISTOR, VAR, 1W ±5%	9
		2	2		SEE NOTE 17	RESISTOR, FXD, WW 1/10W	8
		1	1		1010373-8	RESISTOR, VAR, 2 K 1W ±5%	7
		2	2		1010289-036	CAPACITOR, POLY .0775UF 200V ±.5%	6
		1	1		1010283-17	RESISTOR, FXD, WW 5.1K 1/10W ±.1%	5
		4	4		1000093-3	SCREW, BUTTON HD	4
		1	1		1008023-1	INSULATOR	3
		1	1		1008023-2	INSULATOR	2
		1	1		1007020	HEATSINK	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
Contract NAS 9-497
DRAWN S. Agne DATE 9 SEP 64
CHECKED R. Udmach 15 SEP 64
APPROVAL
APPROVAL D. R. Test 10-5-64
NASA APPROVAL W. J. Rhine
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

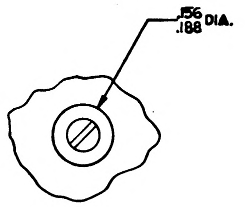
PULSE TORQUE GYRO CALIBRATE ASSEMBLY

CODE IDENT NO.
SIZE J
NASA DRAWING NO. 1007521
SCALE 5/1
WT
SHEET 1 OF 1

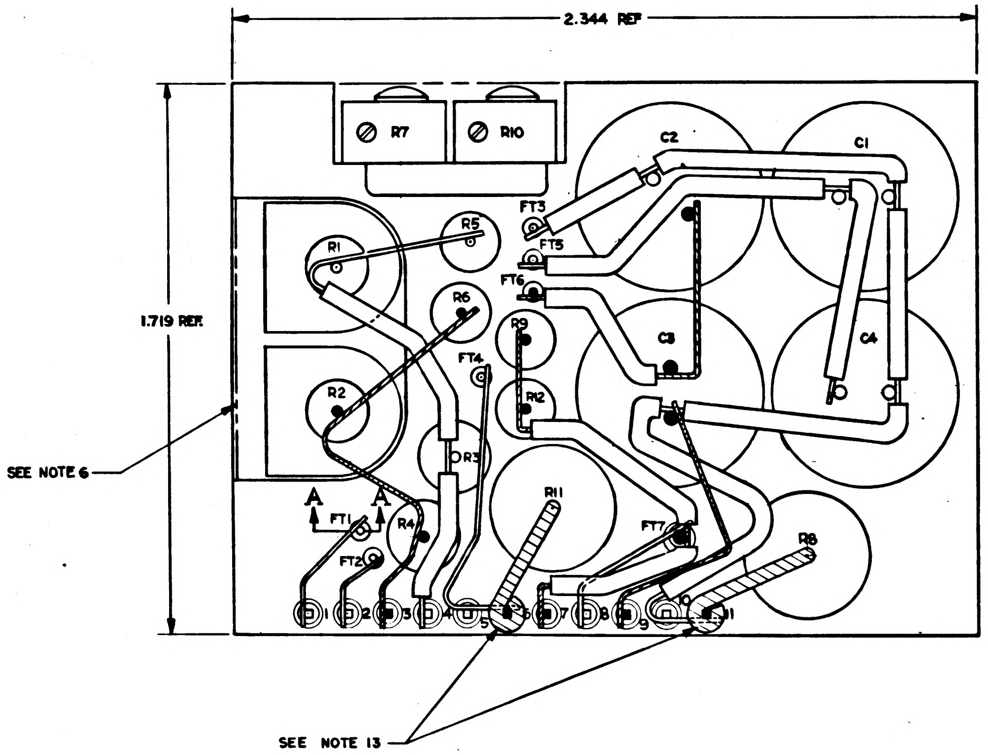
1007521

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO



VIEW B-B
2 PLACES
SEE NOTE 14


2.344 REF
1.719 REF
R7
R10
C2
C1
C3
C4
R1
R2
R3
R4
R5
R6
R8
R9
R11
R12
FT1
FT2
FT3
FT4
FT5
FT6
FT7
A
A
SEE NOTE 6
SEE NOTE 13
1
2
3
4
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6
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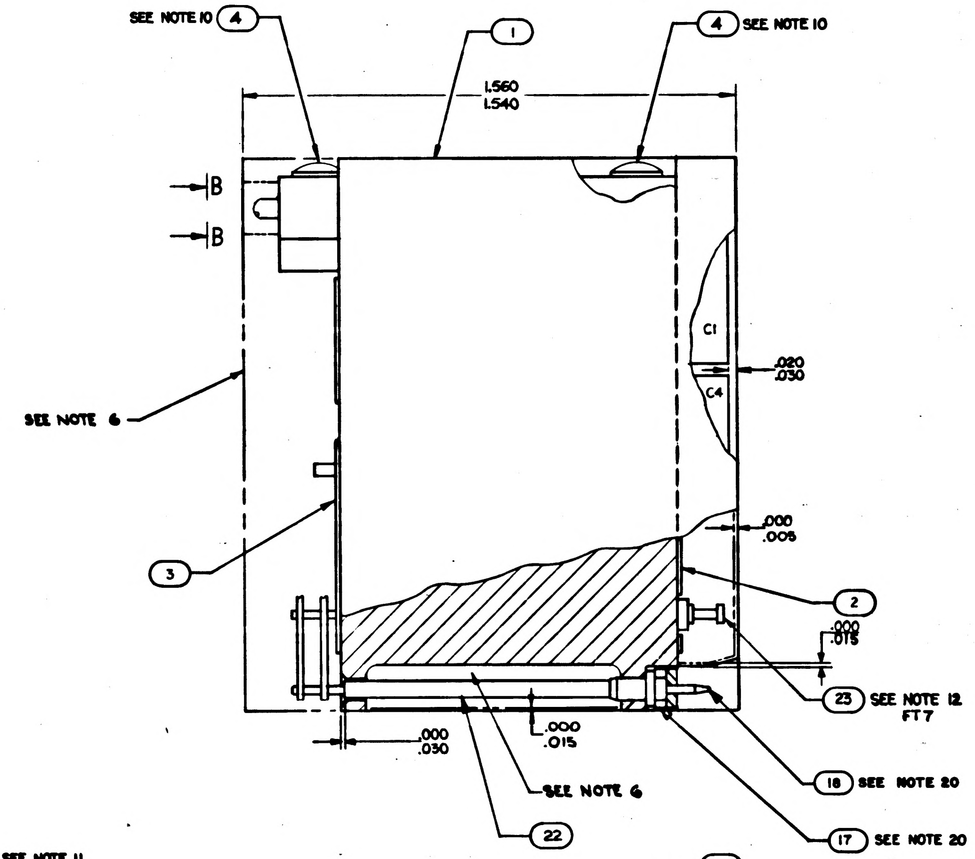
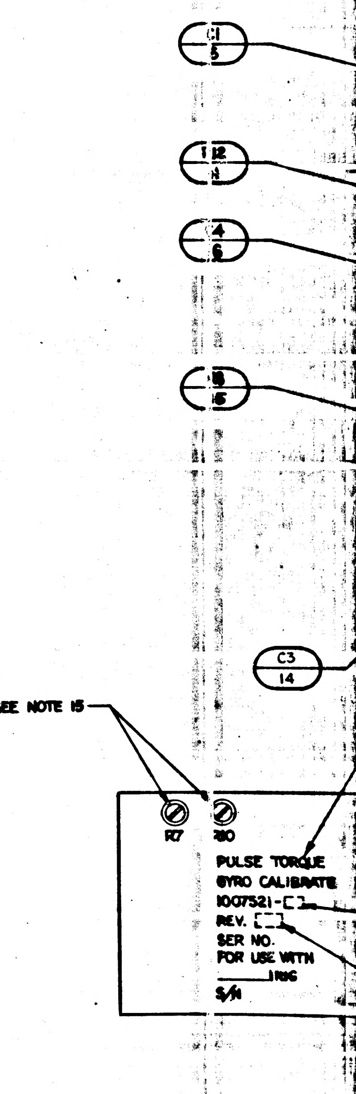
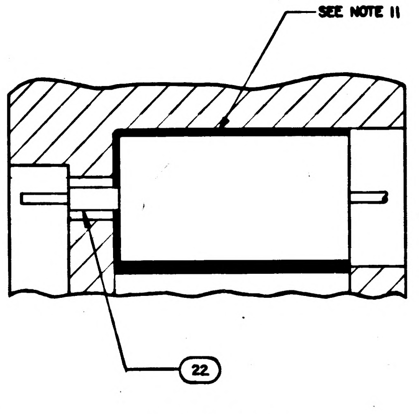
9
10
11

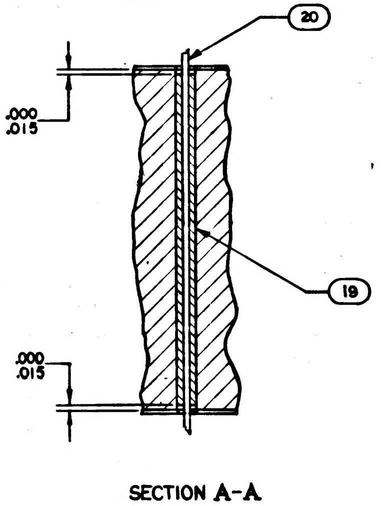

SEE NOTE 10
4
1
4
SEE NOTE 10
1.560
1.540
B
B
C1
C4
.020
.030
SEE NOTE 6
3
.000
.005
2
.000
.015
23
SEE NOTE 12
FT7
.000
.030
.000
.015
SEE NOTE 6
18
SEE NOTE 20
22
17
SEE NOTE 20


C1
5
12
11
4
6
13
15
C3
14
SEE NOTE 15
R7
R10
PULSE TORQUE
GYRO CALIBRATE
1007521-[ ]
REV. [ ]
SER NO.
FOR USE WITH
_____IRIG
S/N

VIEW A-A


SEE NOTE 11
22

SECTION B-B


20
.000
.015
19
.000
.015

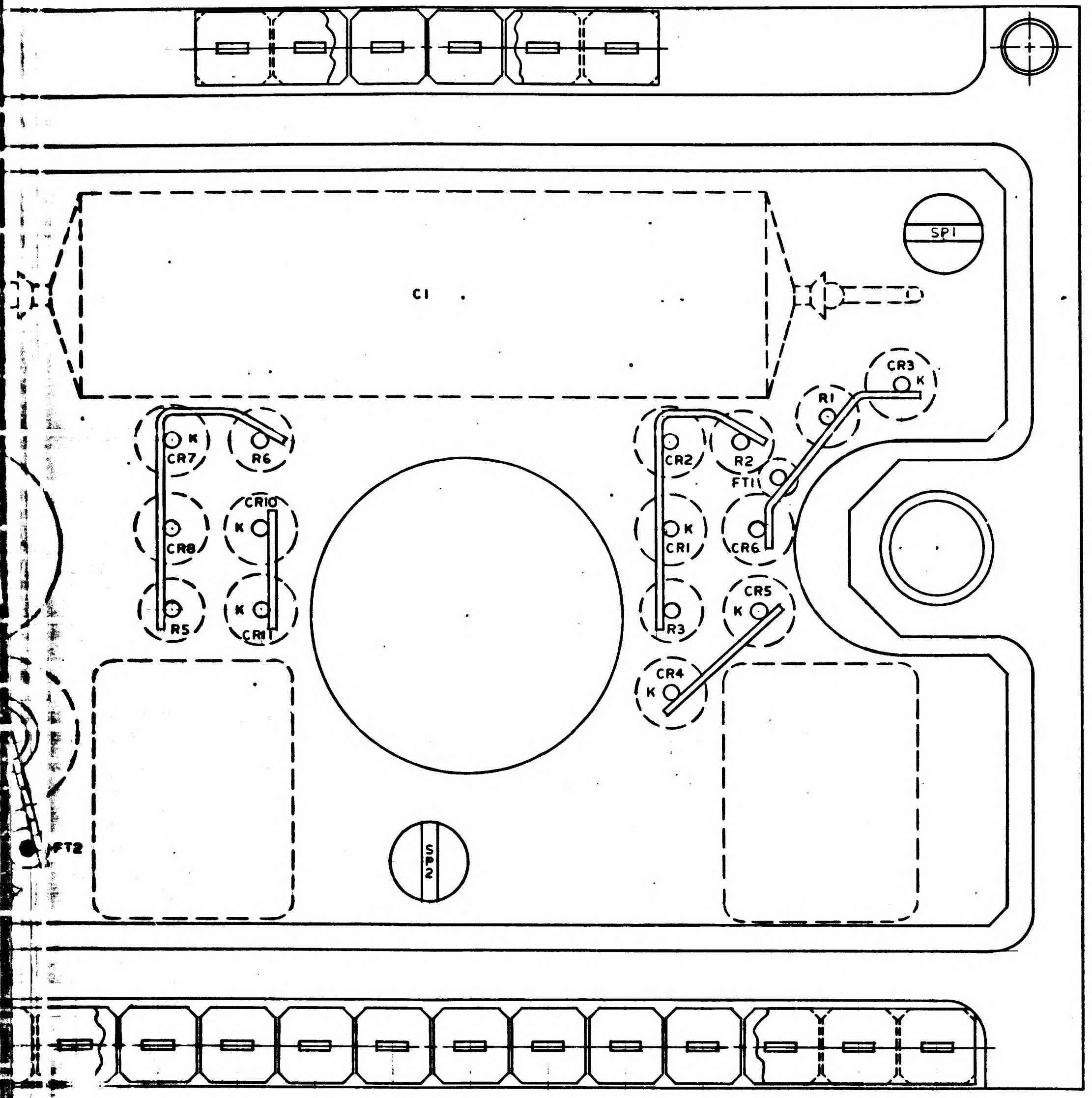
SECTION A-A

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005 EXCEPT WHERE SHOWN.
3. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
4. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
5. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
6. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) USING CURING CYCLE NO.2. UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
7. MARK PIN NUMBERS .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
8. STAKE FIND NO.5 THRU FIND NO. 8 AND FIND NO.10 THRU FIND NO.16 PER ND 1002009 METHOD C & CENTRALIZE
9. ON FIND NO.2 AND FIND NO. 3 FT( ) INDICATES FEEDTHRU.
10. APPLY ZINC CHROMATE PRIMER, MIL-P-8585 PER MIL-P-6808 (AS6) TO THREADS OF FIND NO.4.
11. BOND FIND NO.10 PER ND1002117.
12. CUT FIND NO. 23 AT TOP OF TURRET.
13. SOLDER PER ND 1002071.
14. INDICATED AREAS TO BE FREE OF ENCAPSULATING COMPOUND.
15. AFTER FINAL SYSTEM LEVEL ADJUSTMENT, SEAL ADJUSTING SCREWS PER ND 1002009 METHOD C
16. C3 AND C4 TO BE SELECTED FROM CHART "A" PER ATP-1007021.
17. R5 AND R6 TO BE SELECTED FROM CHART "B" OR CHART "F" PER ATP 1007021
18. R12 TO BE SELECTED FROM CHART "C" PER ATP-1007021.
19. R11 TO BE SELECTED FROM CHART "D" PER ATP-1007021.
20. MUST MEET REQUIREMENTS OF ND1002136
21. R7 TO BE SELECTED FROM CHART "E" PER ATP-1007021.
22. PROCURE PER PS 1007021.
23. BOND FIND NO. 23 TO FIND NO.17 PER ND 1002237

1007522	SYM	DESCRIPTION	DATE	APPROVAL
	A	REPLACED WITH CHANGE BY REV B PER TDRR 16331	2/6/65	

REVISIONS 13799



SP1
C1
CR3
K
R1
CR7
K
R6
CR2
R2
FT1
CR10
K
CR8
K
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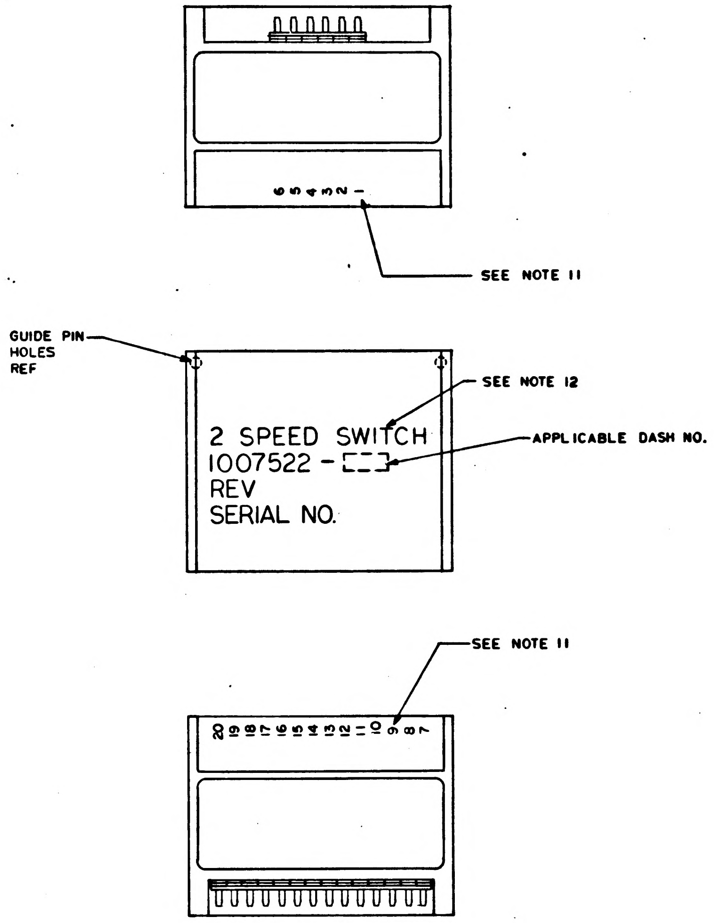
CR6
CR5
K
R5
K
CR11
R3
CR4
K
SB2
FT2



SEE NOTE 11
GUIDE PIN HOLES REF
SEE NOTE 12
APPLICABLE DASH NO.
2 SPEED SWITCH
1007522 -
REV
SERIAL NO.
SEE NOTE 11
1 2 3 4 5 6
7 8 9 10 11 12 13 14 15 16 17 18 19 20

MARKING VIEW
SCALE 2/1

A REPLACED WITH CHANGE BY REV B

	1009505	SCHEMATIC	REF
AR	1006776-21	INSULATION SLEEVING	21
1	1008540-6	GASKET, CONNECTOR MINIATURE	20
1	1008540-14	GASKET, CONNECTOR MINIATURE	19
2	1010329-1	TRANSFORMER	18
8	1010392-1	DIODE	17
4	1010372-21	DIODE	16
1	1010264-26	CAPACITOR	15
1	1010264-17	CAPACITOR	14
6	1006750-63	RESISTOR	13
AR	1006776-22	INSULATION SLEEVING	12
AR	1006776-20	INSULATION SLEEVING	11
AR	1006757-8	WIRE, ELECTRICAL .020 DIA	10
AR	1006757-1	WIRE, ELECTRICAL .010 X .020	9
2	1010485-98	SCREW, FILLISTER HEAD	8
6	1008161-3	SCREW, CAP SLOTTED HD SPECIAL	7
3	1015135-014	SPACER	6
20	1006782-5	CONTACT, WRAPOST-MALE, MIN	5
20	1006775	INSULATOR, WRAPOST-MALE, MIN	4
1	1008534	WIRING BOARD, BOTTOM	3
1	1008532	WIRING BOARD, TOP	2
1	1007594	FRAME	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
011	LIST OF MATERIALS		

1007579	
1007578	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS — ± DECIMALS XXX ±.005 XX ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN DATE
CHECKED
APPROVAL 7 OCT 64
APPROVAL 10-8-64
NASA APPROVAL 10-14-64
MIT APPROVAL 10/14/64

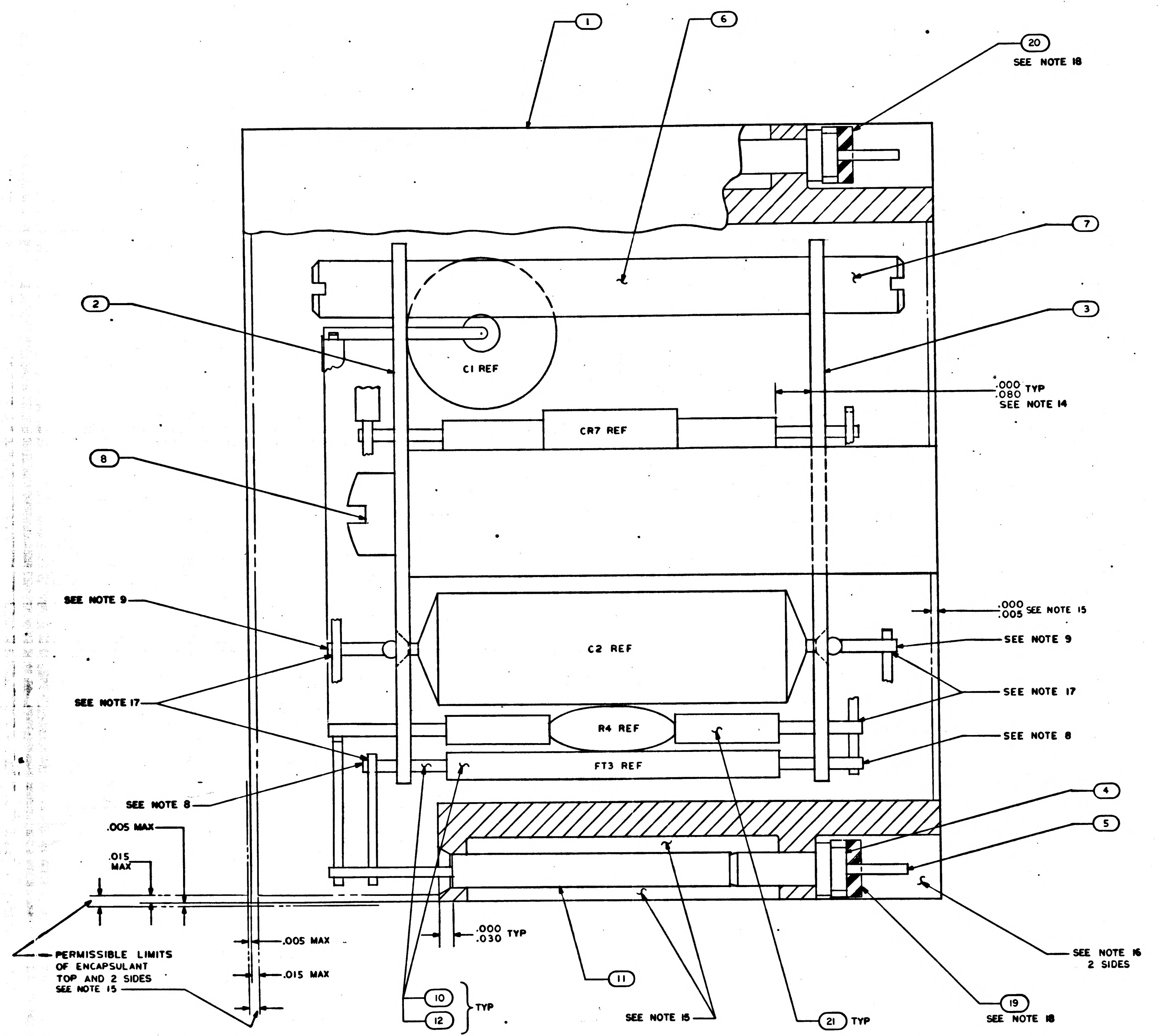
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

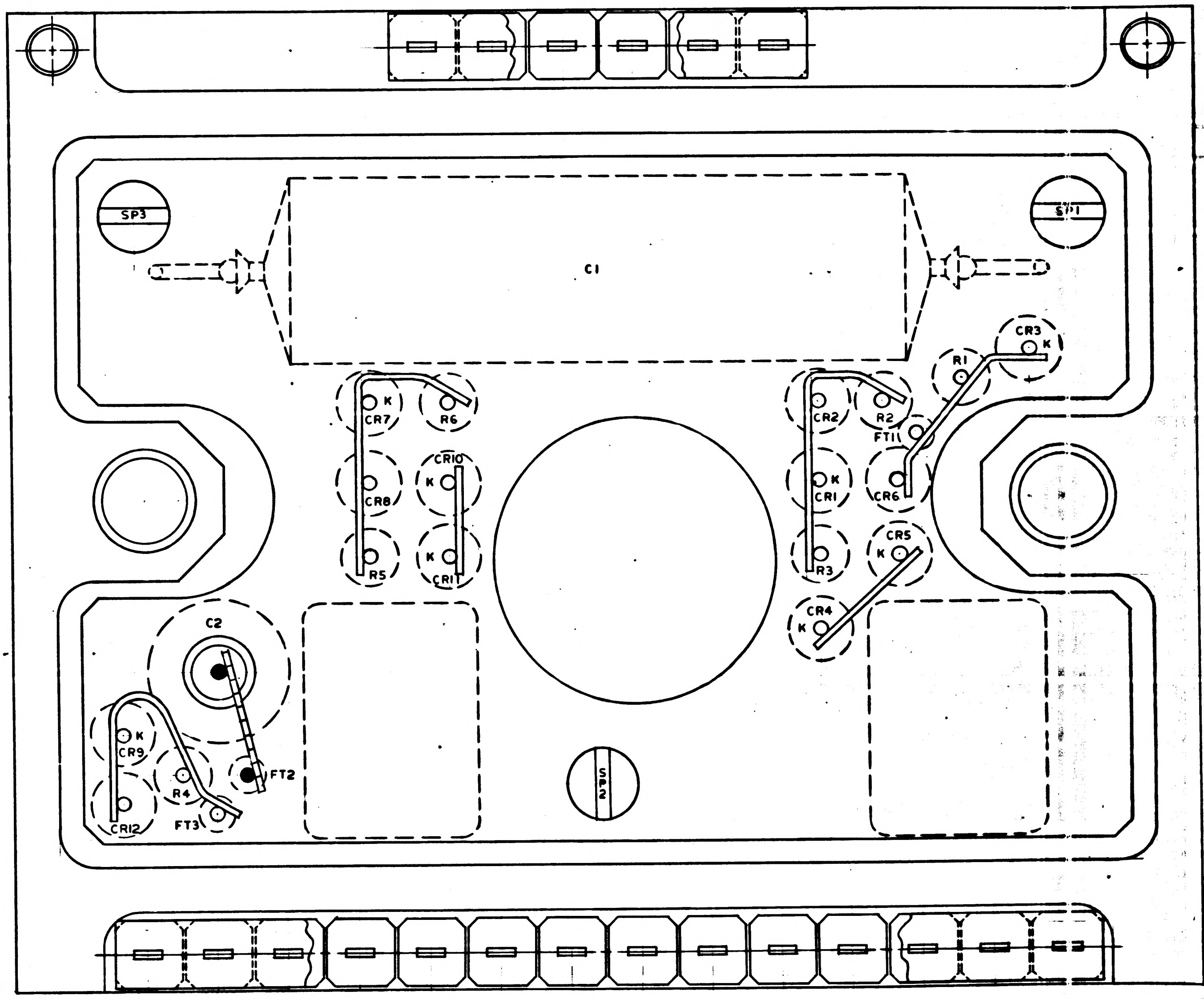
2 SPEED SWITCH ASSEMBLY

CODE IDENT NO.	SIZE	NASA DRAWING NO.
—	J	1007522
SCALE 10/1	WT —	SHEET 1 OF 1

1007522

SP3
R6 13
CR7 17
CR10 16
CR8 17
R5 13
CR11 16
C2 14
CR9 17
R4 13
CR12 17
FT3


1
6
20
SEE NOTE 18
7
2
3
C1 REF
.000 .080 TYP
SEE NOTE 14
CR7 REF
8
.000 .005 SEE NOTE 15
SEE NOTE 9
C2 REF
SEE NOTE 9
SEE NOTE 17
SEE NOTE 17
R4 REF
SEE NOTE 8
FT3 REF
SEE NOTE 8
4
5
.005 MAX
.015 MAX
.005 MAX
.015 MAX
.000 .030 TYP
PERMISSIBLE LIMITS OF ENCAPSULANT TOP AND 2 SIDES SEE NOTE 15
10
12
TYP
11
SEE NOTE 15
21 TYP
SEE NOTE 16 2 SIDES
19
SEE NOTE 18


SP3
SP1
C1
R1
CR3
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CR7
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R6
CR2
R2
FT1
CR10
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CR8
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CR6
R5
K
CR11
R3
CR5
K
CR4
K
C2
K
CR9
R4
FT2
CR12
FT3
SP2

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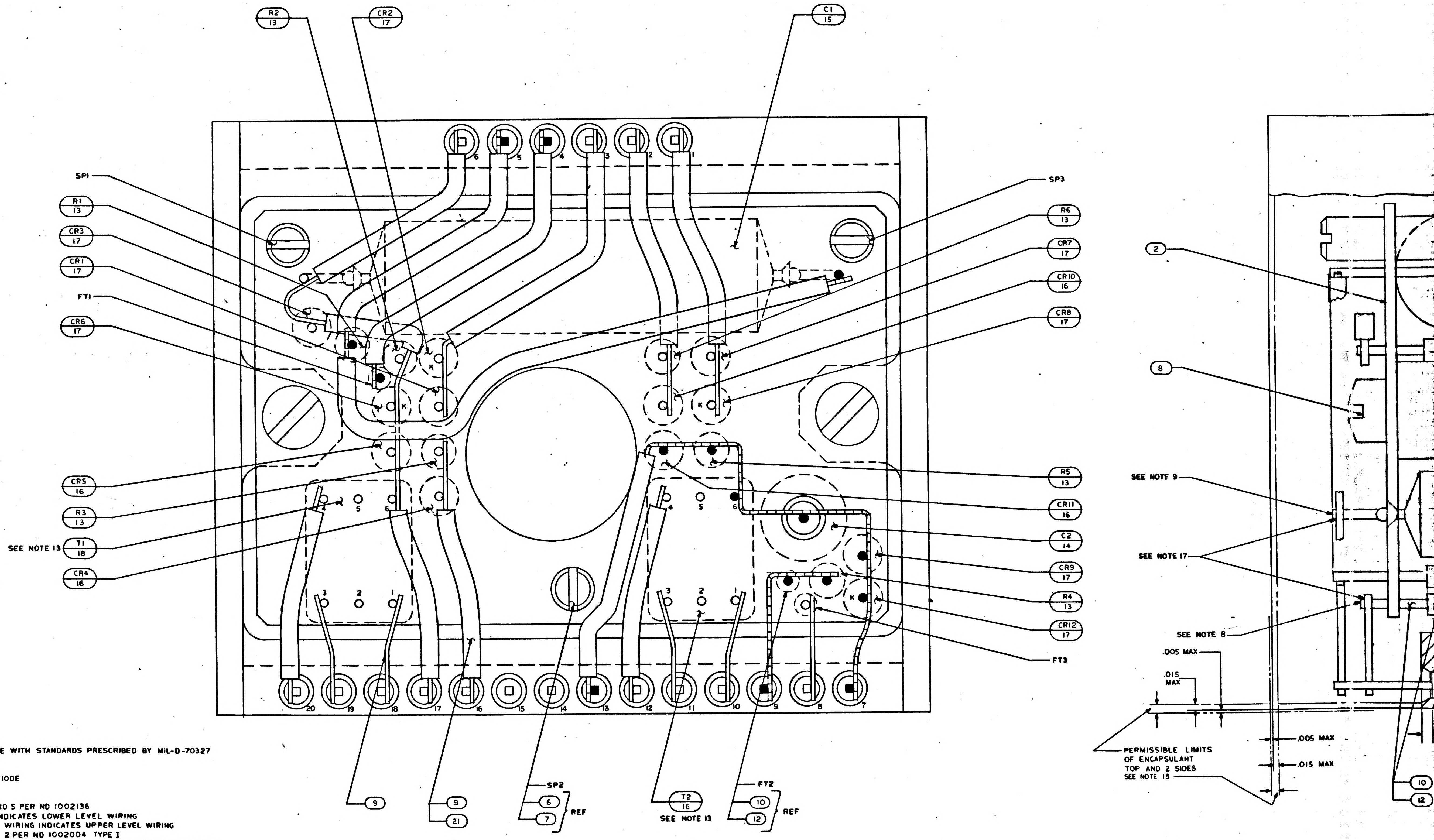
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CR2 17
C1 15
SP1
R1 13
CR3 17
CR1 17
FT1
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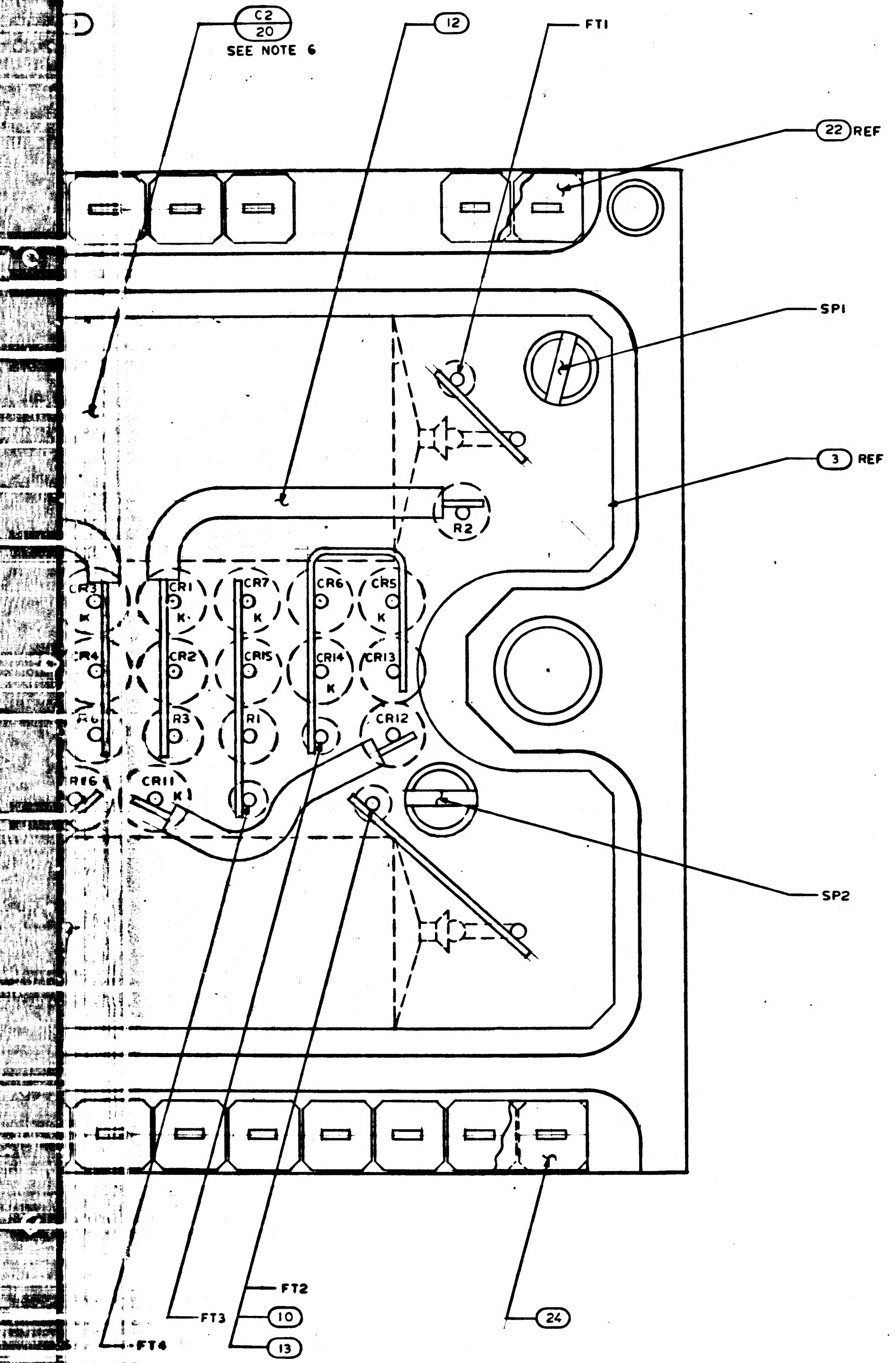
SP3
R6 13
CR7 17
CR10 16
CR8 17
6 5 4 3 2 1
K
CR5 16
R3 13
SEE NOTE 13
T1 18
CR4 16
R5 13
CR11 16
C2 14
CR9 17
R4 13
CR12 17
FT3
4 5 6
3 2 1
20 19 18 17 16 15 14 13 12 11 10 9 8 7
9
9
21
SP2
6
7
REF
T2 16
SEE NOTE 13
FT2
10
12
REF
2
8
SEE NOTE 9
SEE NOTE 17
SEE NOTE 8
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULANT TOP AND 2 SIDES SEE NOTE 15
.005 MAX
.015 MAX
10
12

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. FT DENOTES FEED THRU
4. K DENOTES CATHODE SIDE OF DIODE
5. SP DENOTES SPACER
6. WELD PER ND 1002005
7. ASSEMBLE FIND NO 4 AND FIND NO 5 PER ND 1002136
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
10. BOND T1 T2 AND C1 TO FIND NO 2 PER ND 1002004 TYPE I
11. MARK .100/.060 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
12. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
13. CUT LEAD NUMBERS 2 AND 5 .03MAX ABOVE CASE
14. TYPICAL SLEEVING FOR ALL COMPONENTS
15. ENCAPSULATE MODULE PER ND 1002002 BLACK POLYURETHANE FOAM REMOVE ALL FLASHING
16. INDICATED AREAS TO BE FREE OF ENCAPSULATION
17. WORKMANSHIP REQUIREMENTS PER ND 1002069
18. BOND FIND NO. 19 AND FIND NO. 20 TO FIND NO. 4 PER ND 1002237

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 16331	2/9/65	



C2
20
SEE NOTE 6
12
FT1
22 REF
SP1
3 REF
R2
CR3
K
CR1
K
CR7
K
CR6
K
CR5
K
CR4
CR2
CR15
CR14
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R3
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R6
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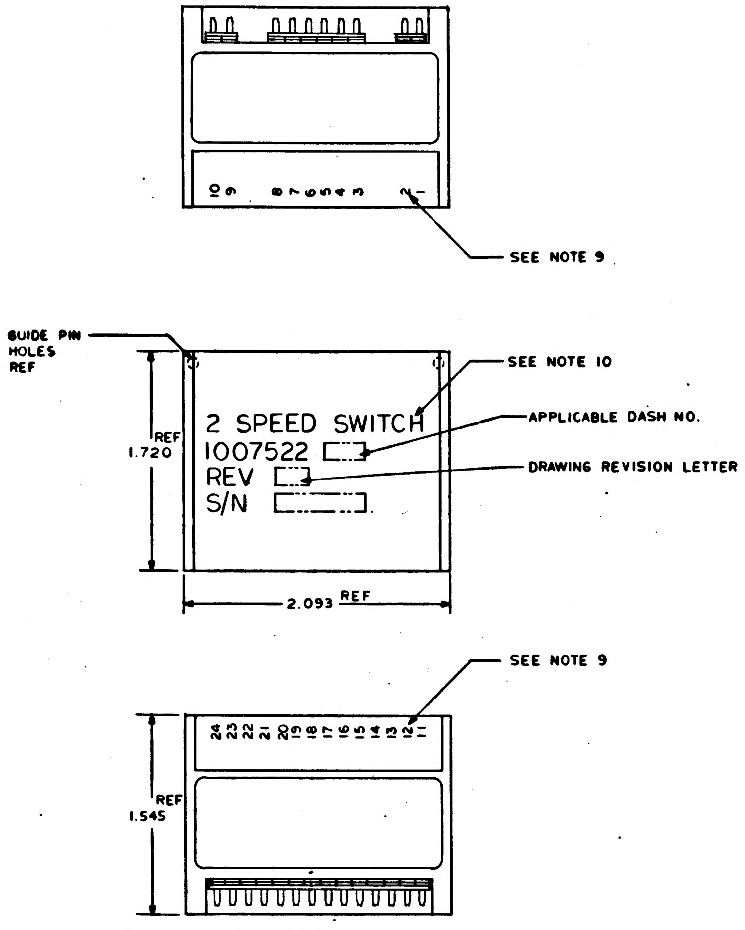
K1
SP2
FT2
FT3
10
13
FT4
24



10 9 8 7 6 5 4 3 2 1
SEE NOTE 9
GUIDE PIN HOLES REF
SEE NOTE 10
2 SPEED SWITCH
1007522
REV
S/N
APPLICABLE DASH NO.
DRAWING REVISION LETTER
1.720 REF
2.093 REF
SEE NOTE 9
24 23 22 21 20 19 18 17 16 15 14 13 12 11
1.545 REF

MARKING VIEW
SCALE 2/1

Ⓑ REPLACES REV A
WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009505	SCHEMATIC	REF
1	1008540-14	GASKET CONNECTOR MINIATURE	24
1	1008540-6	GASKET CONNECTOR MINIATURE	23
2	1008540-2	GASKET CONNECTOR MINIATURE	22
2	1010329-1	TRANSFORMER	21
1	1010264-121	CAPACITOR	20
1	1010264-120	CAPACITOR	19
1	1010264-119	CAPACITOR	18
1	1010264-22	CAPACITOR	17
16	1010392-1	DIODE	16
4	1010372-21	DIODE	15
6	1006750-63	RESISTOR	14
AR	1006776-22	INSULATION SLEEVING	13
AR	1006776-21	INSULATION SLEEVING	12
AR	1006776-20	INSULATION SLEEVING	11
AR	1006757-8	WIRE, ELECTRICAL	10
AR	1006757-1	WIRE, ELECTRICAL	9
2	1010485-98	SCREW, FILLISTER HEAD	8
6	1008161-3	SCREW, CAP SLOTTED HD SPECIAL	7
3	1015135-014	SPACER	6
24	1006782-5	CONTACT WRAPOST-MALE MIN	5
24	1006775	INSULATOR WRAPOST-MALE MIN	4
1	1008534	WIRING BOARD, BOTTOM	3
1	1008532	WIRING BOARD, TOP	2
1	1007594	FRAME	1

011 LIST OF MATERIALS

NEXT ASSY	USED ON
1007578	
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

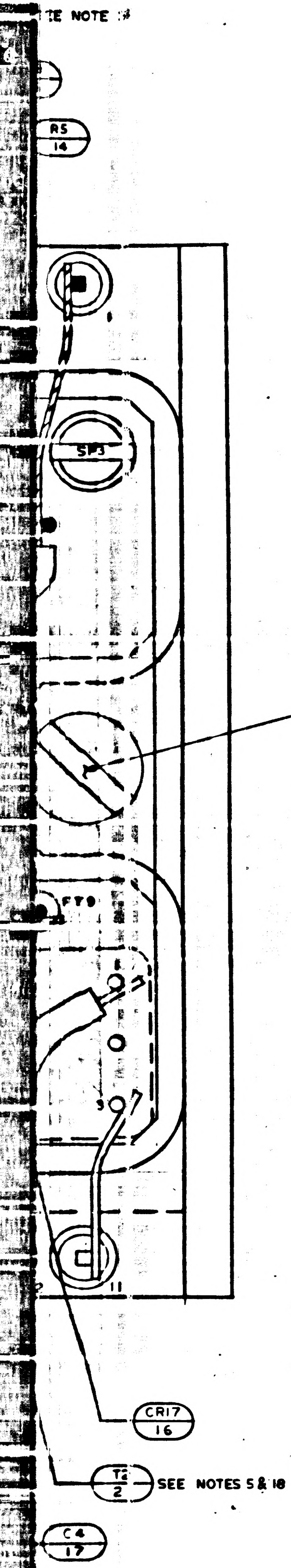
MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DRAWN Bonarrigo DATE Jan 28 65
CHECKED
APPROVAL 8 FEB 65
APPROVAL
NASA APPROVAL 2-9-65
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

2 SPEED SWITCH ASSEMBLY

CODE IDENT NO. —
SIZE J
NASA DRAWING NO. 1007522
SCALE 10/1
WT
SHEET 1 OF 1

1007522 B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2
8
CR17
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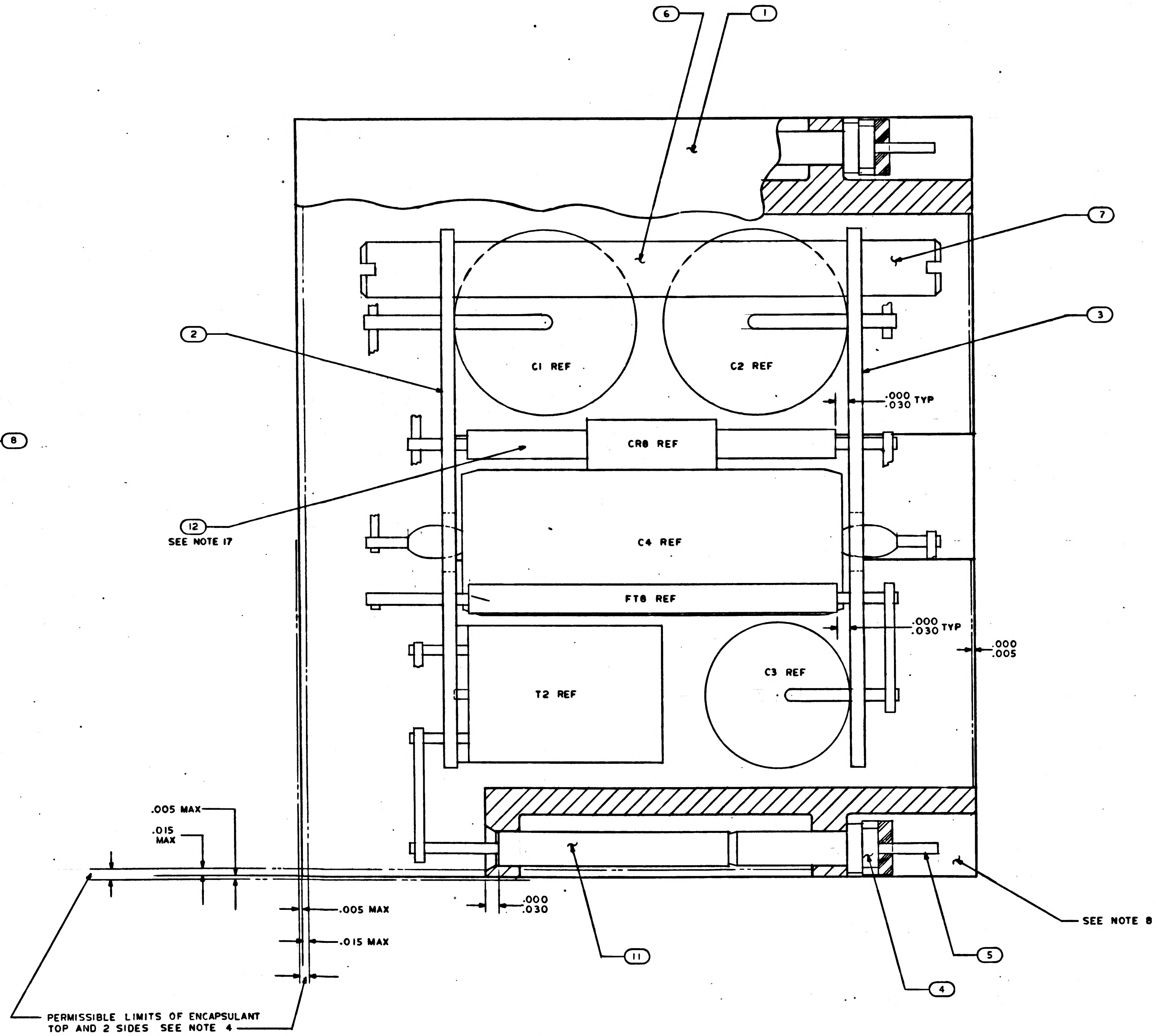
T2
2
SEE NOTES 5 & 18
C4
17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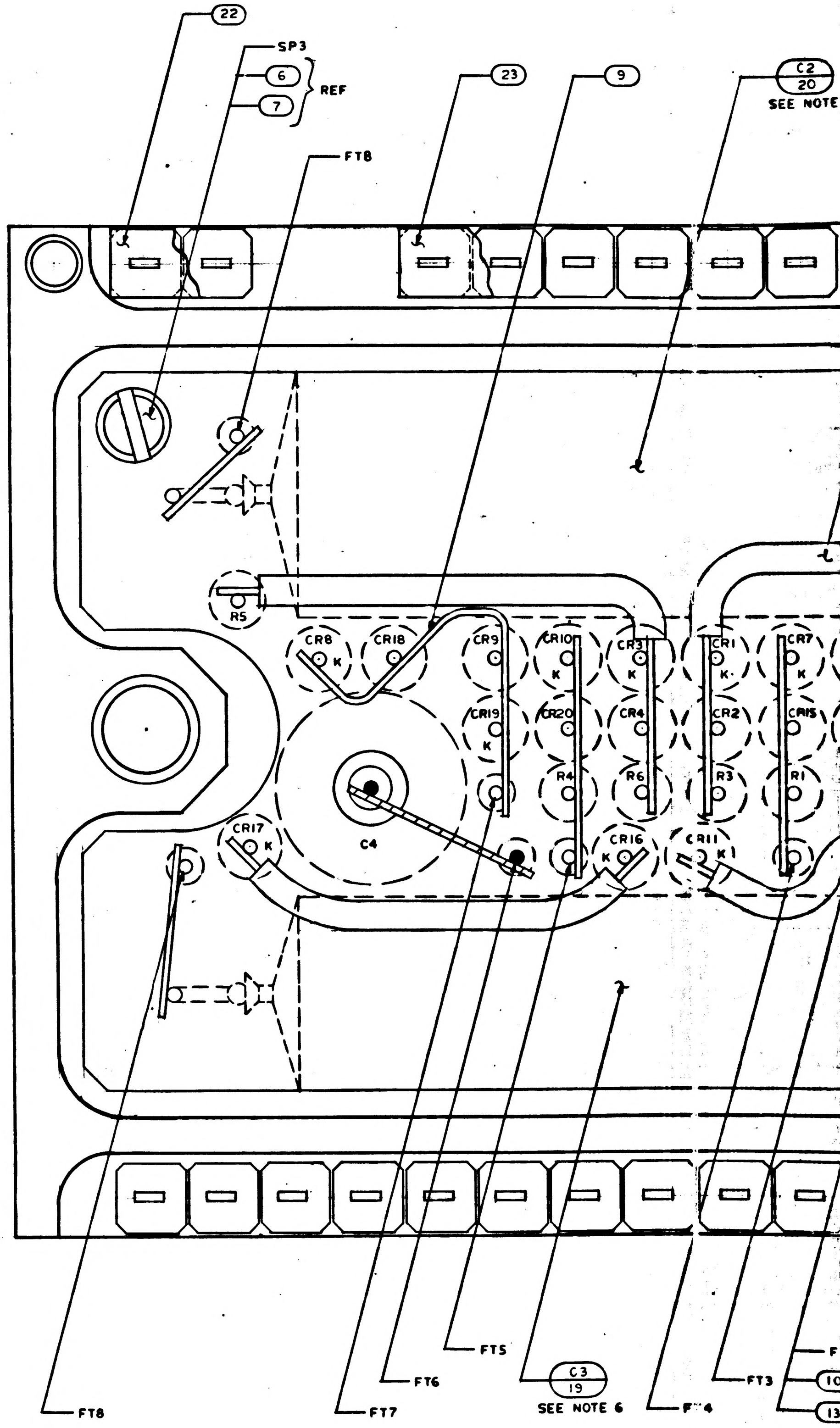
1
7
3
2
C1 REF
C2 REF
.000
.030 TYP
CR8 REF
12
SEE NOTE 17
C4 REF
FT8 REF
.000
.030 TYP
.000
.005
T2 REF
C3 REF
.005 MAX
.015
MAX
.005 MAX
.015 MAX
.000
.030
11
5
4
SEE NOTE 8
PERMISSIBLE LIMITS OF ENCAPSULANT
TOP AND 2 SIDES SEE NOTE 4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7
REF
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C2
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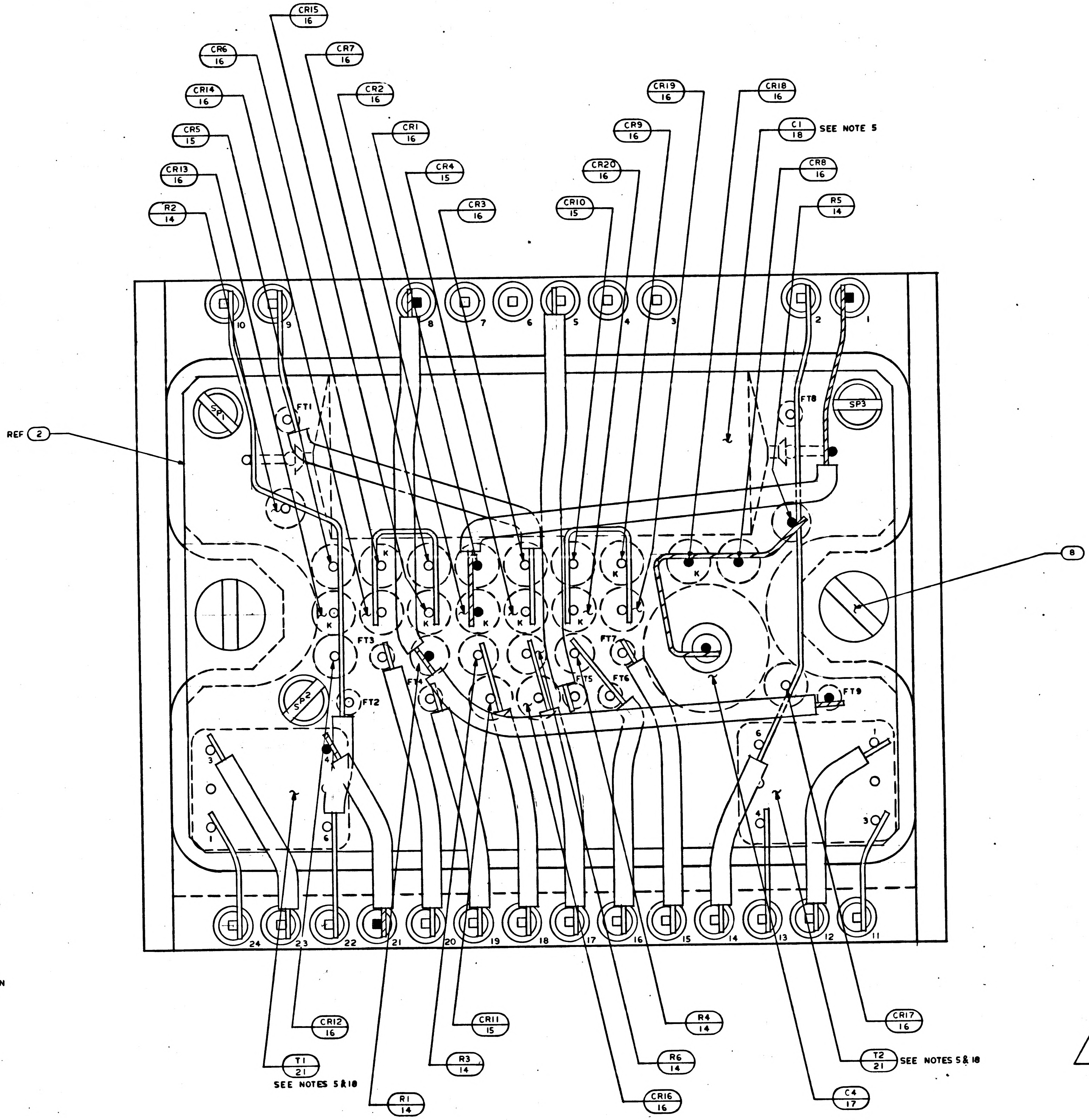
SEE NOTE
R5
CR8
CR18
CR9
CR10
CR3
CR1
CR7
CR19
CR20
CR4
CR2
CR15
R4
R6
R3
R1
C4
CR17
CR16
CR11
K
FT8
FT7
FT6
FT5
C3
19
SEE NOTE 6
F 4
FT3
F
10
13

1007522 B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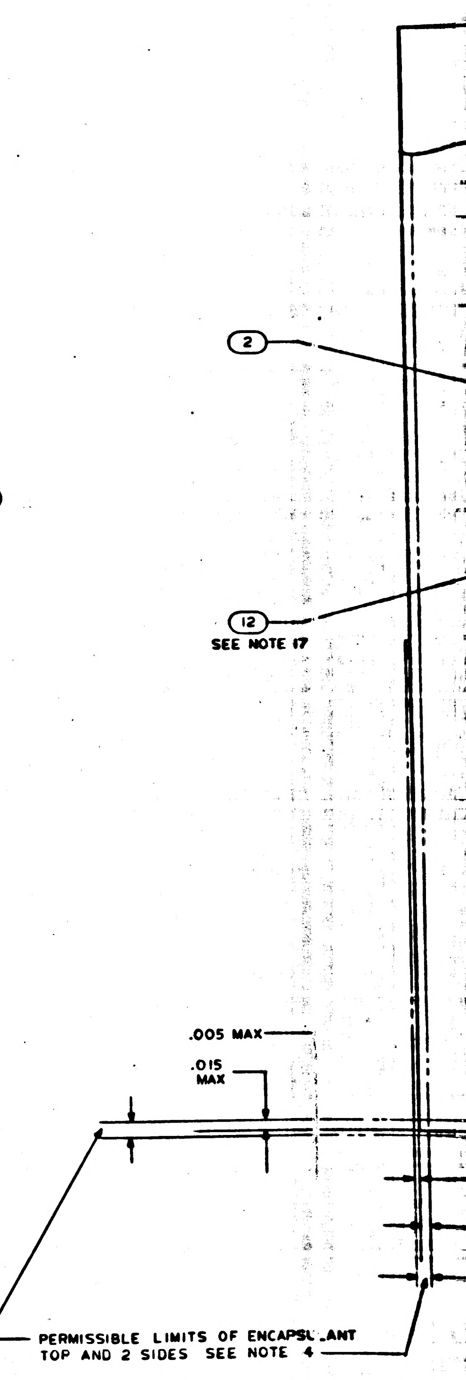
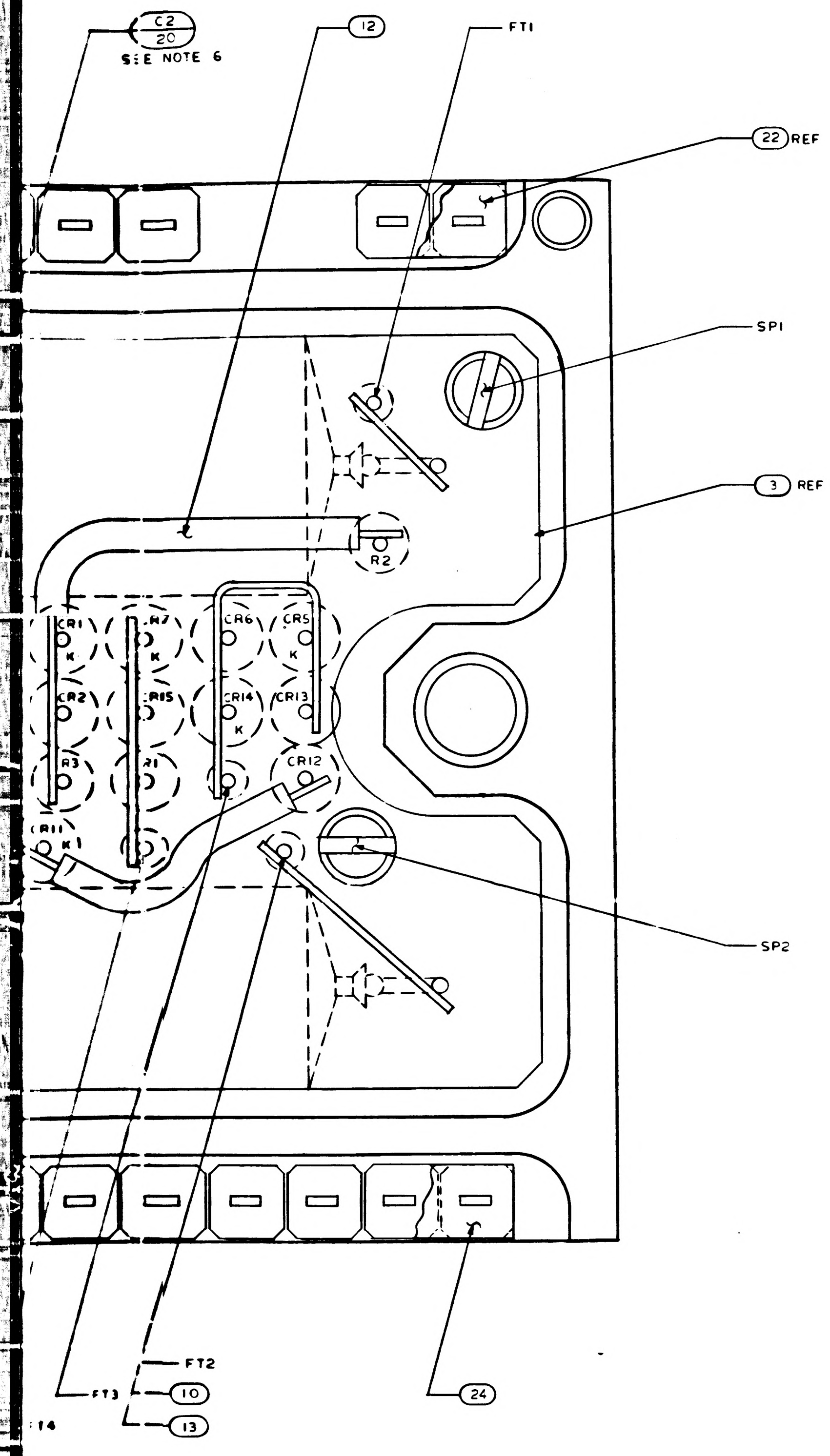
CR18 16
CR9 16
C1 18 SEE NOTE 5
CR20 16
CR8 16
CR10 15
R5 14
REF 2
8
SP1
SP2
SP3
FT1
FT2
FT3
FT4
FT5
FT6
FT7
FT8
FT9
K
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
CR12 16
CR11 15
R4 14
CR17 16
T1 21
SEE NOTES 5&18
R3 14
R6 14
T2 21 SEE NOTES 5&18
R1 14
CR16 16
C4 17


2
12
SEE NOTE 17
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSL ANT
TOP AND 2 SIDES SEE NOTE 4

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND 1002005
3. ASSEMBLE FIND NO. 4 TO FIND NO. 5 PER ND 1002136
4. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
5. BOND FIND NO. 18 AND FIND NO. 21 TO FIND NO. 2 PER ND 1002004 TYPE I
6. BOND FIND NO. 19 AND FIND NO. 20 TO FIND NO. 3 PER ND 1002004 TYPE I
7. BOND FIND NO. 22, FIND NO. 23 AND FIND NO. 24 TO FIND NO. 4 PER ND 1002237
8. INDICATED AREA TO BE FREE OF ENCAPSULATION
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
11. AR DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
14 SP DENOTES SPACER
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. TYPICAL SLEEVING FOR FIND NO. 14, FIND NO. 15 AND FIND NO. 16
18. TRIM UNUSED LEADS OF FIND NO. 21 .010/.030 FROM CASE
19. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
20. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007522

1007522 B

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 16771	2/9/65	
C	REVISED PER TDRR 16843	4 MAR 66	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SEE NOTE 6
12
FT1
22 REF
SP1
3 REF
R2
CR1
CR7
CR6
CR5
K
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CR12
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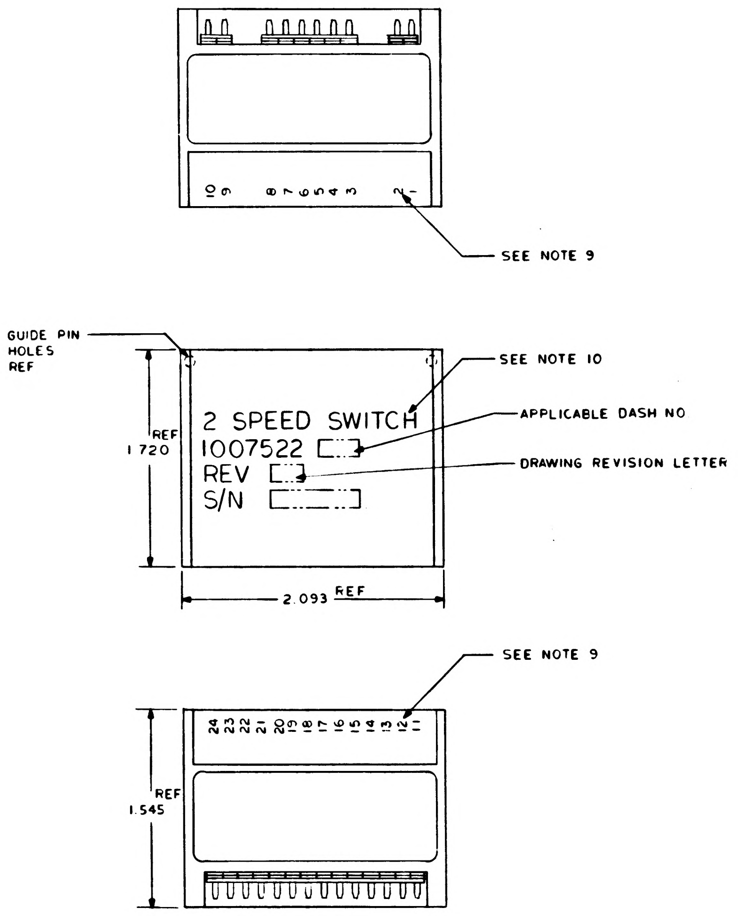
SP2
24
FT2
FT3
10
13
14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SEE NOTE 9
GUIDE PIN HOLES REF
SEE NOTE 10
2 SPEED SWITCH
1007522
REV
S/N
APPLICABLE DASH NO
DRAWING REVISION LETTER
REF 1.720
2.093 REF
SEE NOTE 9
24 23 22 21 20 19 18 17 16 15 14 13 12 11
REF 1.545

MARKING VIEW
SCALE 2/1

Ⓑ REPLACES REV A WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
☒	1009505	SCHEMATIC	REF
1	1008540-14	GASKET CONNECTOR MINIATURE	24
1	1008540-6	GASKET CONNECTOR MINIATURE	23
2	1008540-2	GASKET CONNECTOR MINIATURE	22
2	1010329-1	TRANSFORMER	21
1	1010264-121	CAPACITOR	20
1	1010264-120	CAPACITOR	19
1	1010264-119	CAPACITOR	18
1	1010264-22	CAPACITOR	17
16	1010392-1	DIODE	16
4	1010372-21	DIODE	15
6	1006750-63	RESISTOR	14
AR	1006776-22	INSULATION SLEEVING	13
AR	1006776-21	INSULATION SLEEVING	12
AR	1006776-20	INSULATION SLEEVING	11
AR	1006757-8	WIRE, ELECTRICAL	10
AR	1006757-1	WIRE, ELECTRICAL	9
2	1010485-98	SCREW, FILLISTER HEAD	8
6	1008161-3	SCREW, CAP SLOTTED HD SPECIAL	7
3	1015135-014	SPACER	6
24	1006782-5	CONTACT WRAPOST-MALE MIN	5
24	1006775	INSULATOR WRAPOST-MALE MIN	4
1	1008655	WIRING BOARD, BOTTOM	3
1	1008657	WIRING BOARD, TOP	2
1	1007594	FRAME	1

C11 LIST OF MATERIALS

1007522 C

NEXT ASSY	USED ON
1007578	
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN DATE 28 Jan 65
CHECKED 8 Feb 65
APPROVAL 8 Feb 65
APPROVAL 2/8/65
NASA APPROVAL 2-9-65
MIT APPROVAL

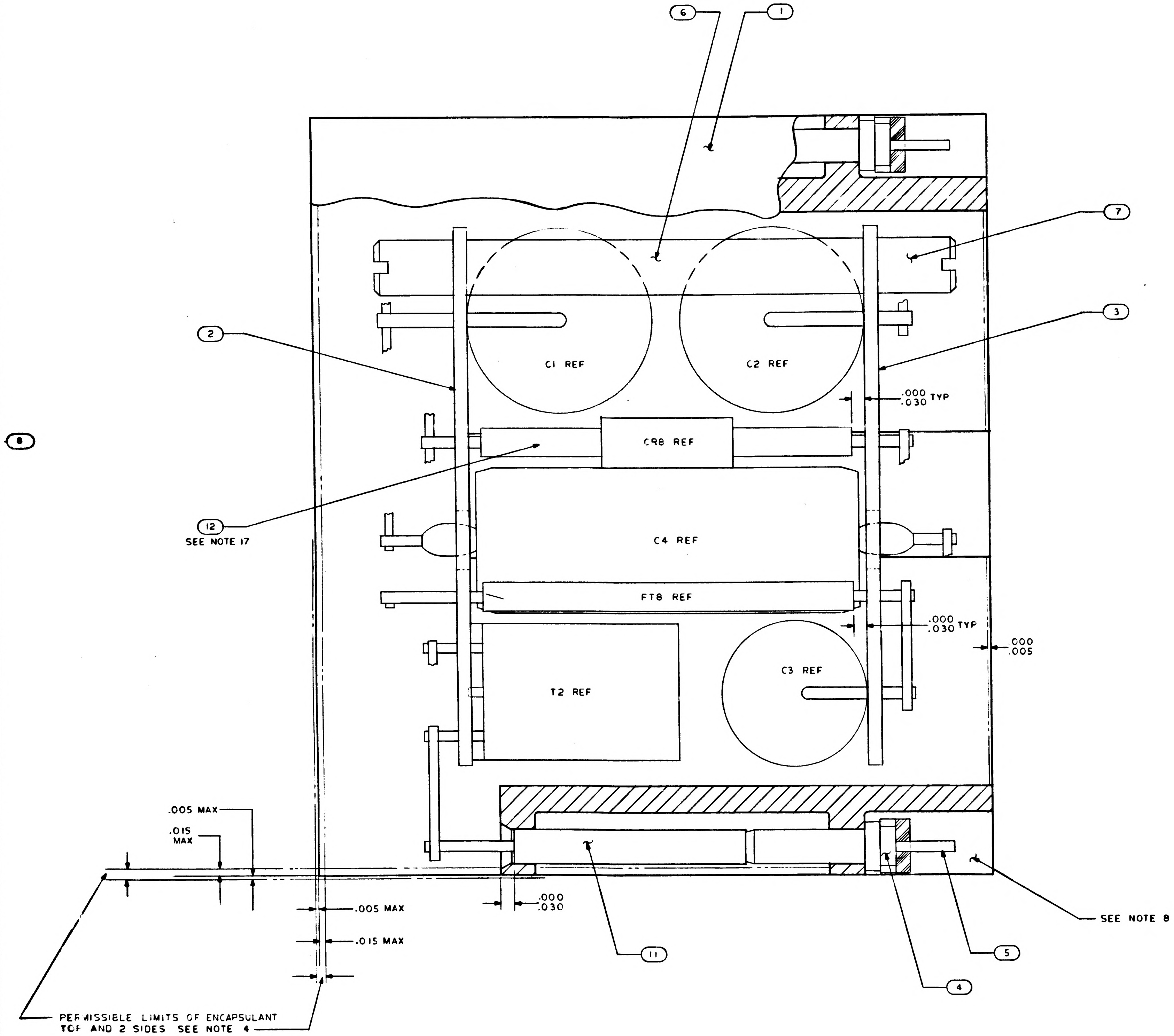
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

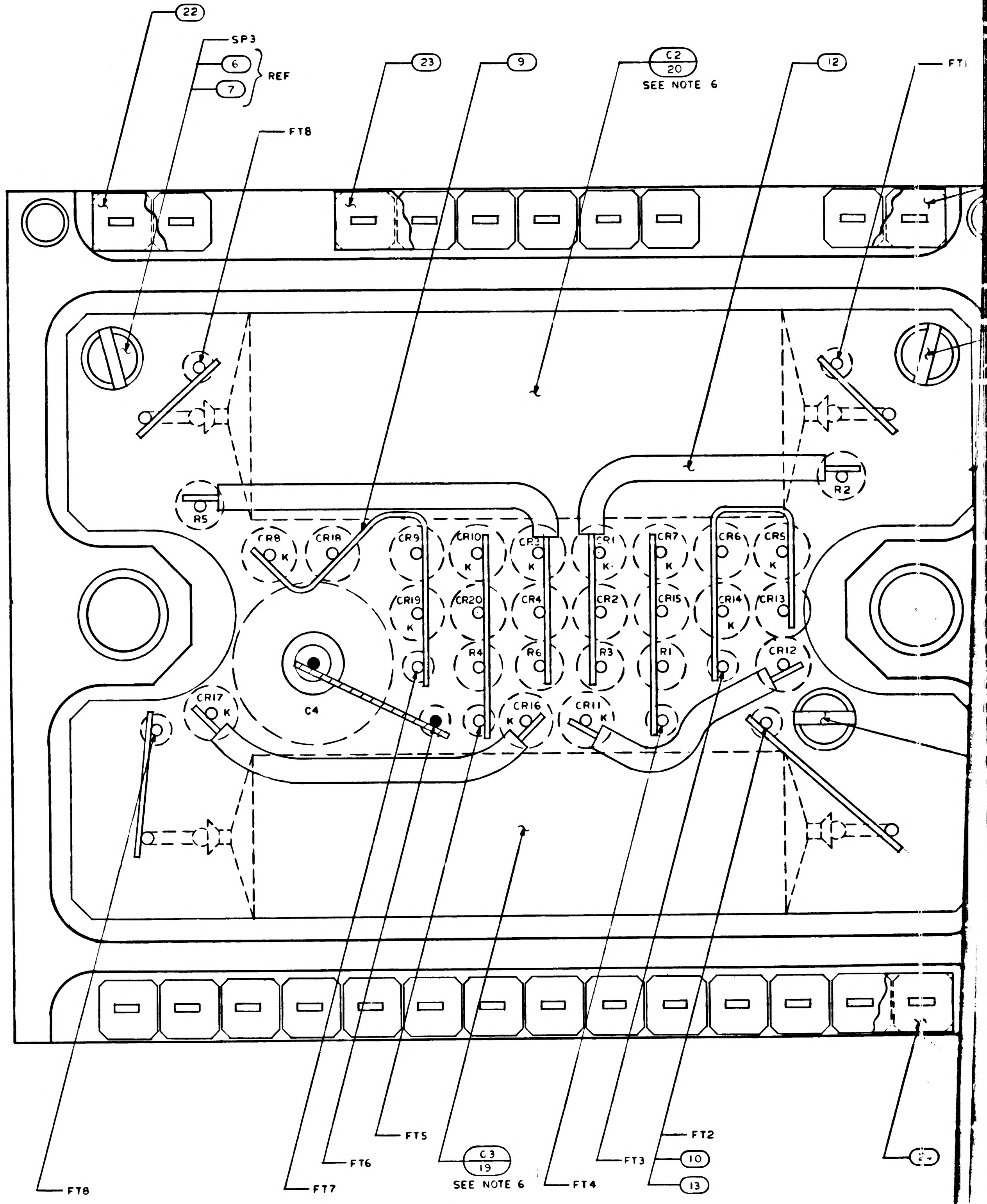
2 SPEED SWITCH ASSEMBLY

CODE IDENT NO —
SIZE J
NASA DRAWING NO 1007522
SCALE 10/1
WT
SHEET 1 OF 1

1007522	C	SH 1

3/1007522


6
1
7
3
2
C1 REF
C2 REF
.000 .030 TYP
CR8 REF
12 SEE NOTE 17
C4 REF
FT8 REF
.000 .030 TYP
.000 .005
T2 REF
C3 REF
.005 MAX
.015 MAX
.005 MAX
.015 MAX
.000 .030
SEE NOTE 8
11
5
4
PERMISSIBLE LIMITS OF ENCAPSULANT TOP AND 2 SIDES SEE NOTE 4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SP3
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7
REF
FT8
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C2 20 SEE NOTE 6
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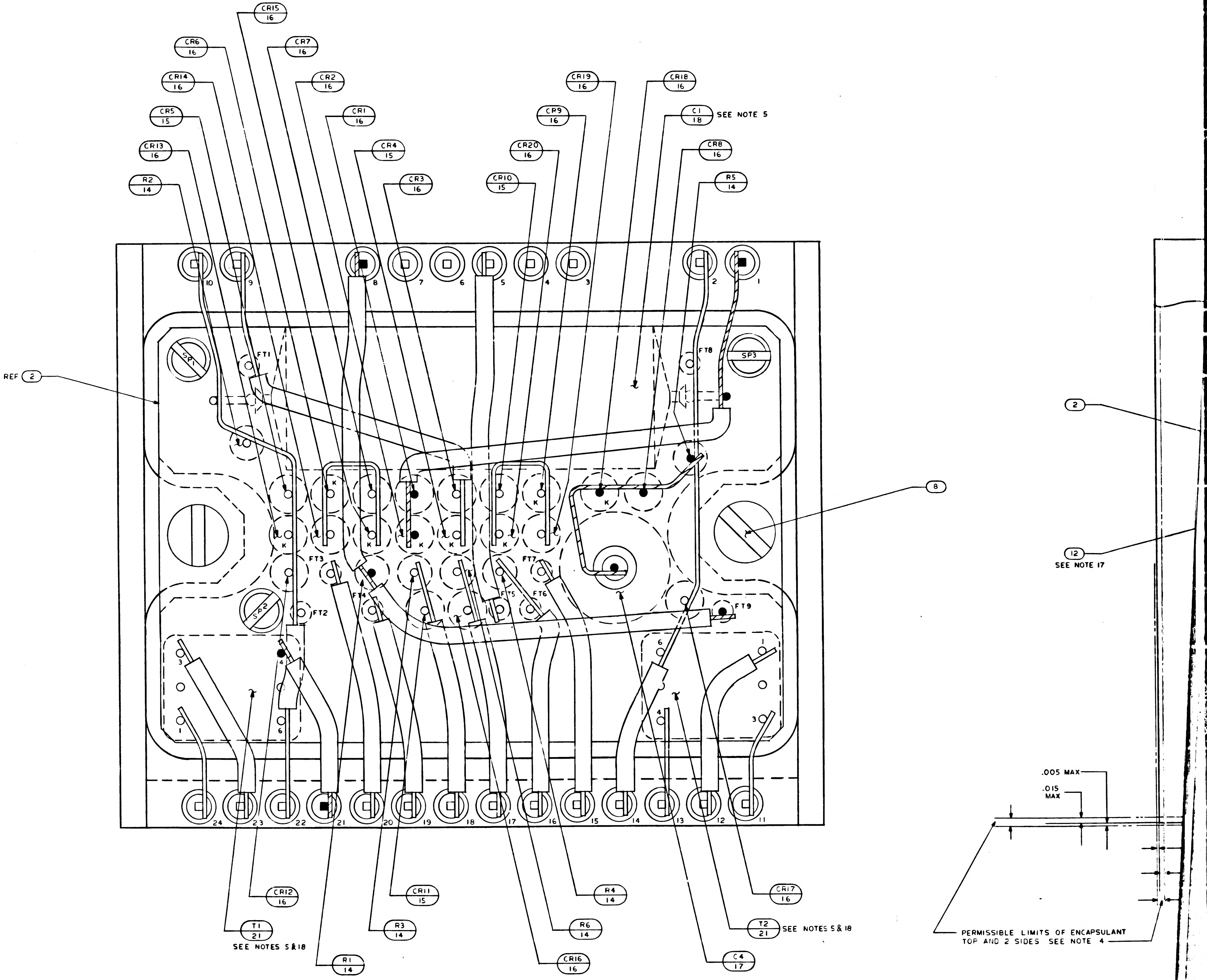
FT1
R5
R2
CR8
CR18
CR9
CR10
CR3
CR1
CR7
CR6
CR5
CR19
CR20
CR4
CR2
CR15
CR14
CR13
R4
R6
R3
R1
CR12
C4
CR17
CR16
CR11
K
FT8
FT7
FT6
FT5
C3 19 SEE NOTE 6
FT4
FT3
FT2
10
13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CR14 16
CR2 16
CR5 15
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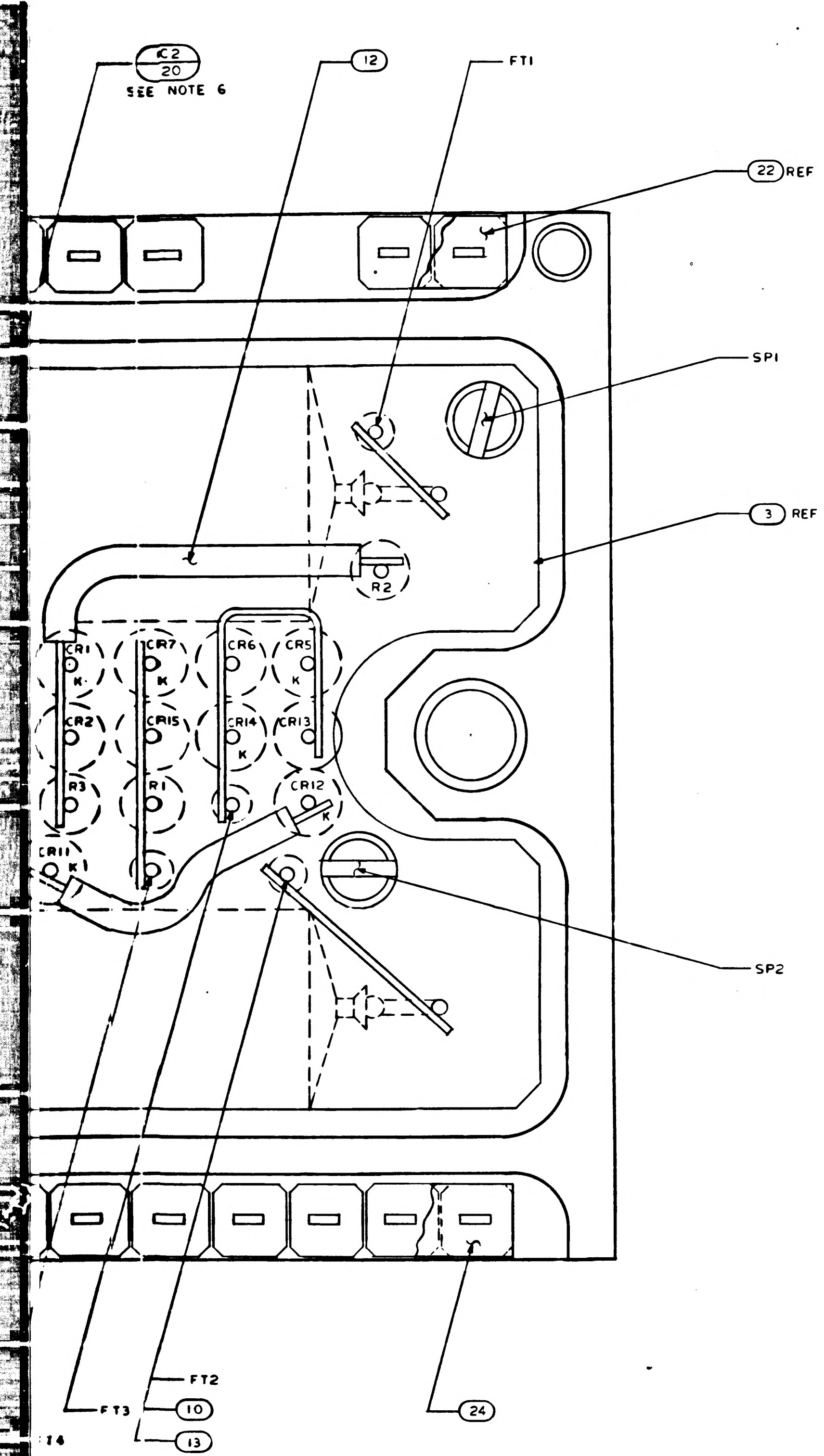
CR13 16
CR4 15
CR3 16
R2 14
CR19 16
CR18 16
CR9 16
C1 18 SEE NOTE 5
CR20 16
CR8 16
CR10 15
R5 14
REF 2
FT1
FT2
FT3
FT4
FT5
FT6
FT7
FT8
FT9
SP1
SP2
SP3
K
8
2
12
SEE NOTE 17
10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13 12 11
CR12 16
T1 21
SEE NOTES 5 & 18
R1 14
R3 14
CR11 15
R6 14
CR16 16
R4 14
C4 17
T2 21 SEE NOTES 5 & 18
CR17 16
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULANT TOP AND 2 SIDES SEE NOTE 4

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND 1002005
3. ASSEMBLE FIND NO. 4 TO FIND NO. 5 PER ND 1002136
4. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
5. BOND FIND NO. 18 AND FIND NO. 21 TO FIND NO. 2 PER ND 1002004 TYPE I
6. BOND FIND NO. 19 AND FIND NO. 20 TO FIND NO. 3 PER ND 1002004 TYPE I
7. BOND FIND NO. 22, FIND NO. 23 AND FIND NO. 24 TO FIND NO. 4 PER ND 1002237
8. INDICATED AREA TO BE FREE OF ENCAPSULATION
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
11. AP DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
14. SP DENOTES SPACER
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. TYPICAL SLEEVING FOR FIND NO. 14, FIND NO. 15 AND FIND NO. 16
18. TRIM UNUSED LEADS OF FIND NO 21 .010/.030 FROM CASE
19. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
20. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007522

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 16331	3/9/65	WK
C	REVISED PER TDRR 16843	4 MAR 65	JJJ
D	REVISED PER TDRR 17193	16 MAR 65	A.N.



C2
20
SEE NOTE 6
12
FT1
22 REF
SP1
3 REF
R2
CR1
K
CR7
K
CR6
CR5
K
CR2
CR15
CR14
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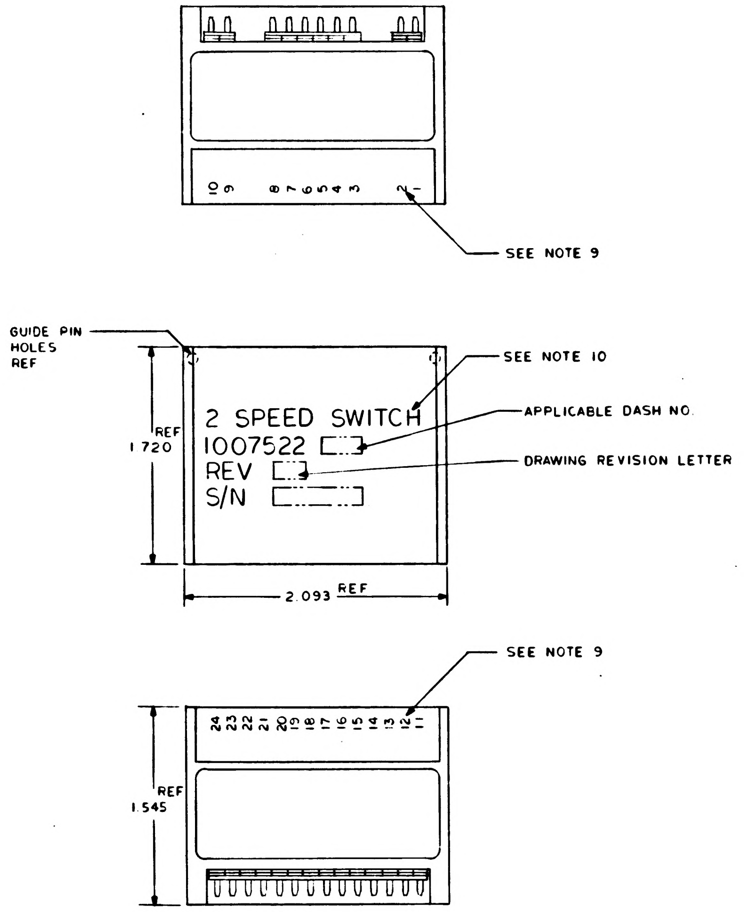
CR13
R3
R1
CR12
K
CR11
K
SP2
FT2
FT3
10
13
24
T4



10 9 8 7 6 5 4 3 2 1
SEE NOTE 9
GUIDE PIN HOLES REF
SEE NOTE 10
2 SPEED SWITCH
1007522
REV
S/N
APPLICABLE DASH NO.
DRAWING REVISION LETTER
REF 1.720
2.093 REF
SEE NOTE 9
24 23 22 21 20 19 18 17 16 15 14 13 12 11
REF 1.545

MARKING VIEW
SCALE 2/1

Ⓑ REPLACES REV A
WITH CHANGE

☒	1009505	SCHEMATIC	REF
1	1008540-14	GASKET CONNECTOR MINIATURE	24
1	1008540-6	GASKET CONNECTOR MINIATURE	23
2	1008540-2	GASKET CONNECTOR MINIATURE	22
2	1010329-1	TRANSFORMER	21
1	1010264-121	CAPACITOR	20
1	1010264-120	CAPACITOR	19
1	1010264-119	CAPACITOR	18
1	1010264-22	CAPACITOR	17
16	1010392-1	DIODE	16
4	1010372-21	DIODE	15
6	1006750-63	RESISTOR	14
AR	1006776-22	INSULATION SLEEVING	13
AR	1006776-21	INSULATION SLEEVING	12
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AR	1006757-8	WIRE, ELECTRICAL	10
AR	1006757-1	WIRE, ELECTRICAL	9
2	1010485-98	SCREW, FILLISTER HEAD	8
6	1008161-3	SCREW, CAP SLOTTED HD SPECIAL	7
3	1015135-014	SPACER	6
24	1006782-5	CONTACT WRAPOST-MALE MIN	5
24	1006775	INSULATOR WRAPOST-MALE MIN	4
1	1008655	WIRING BOARD, BOTTOM	3
1	1008657	WIRING BOARD, TOP	2
1	1007594	FRAME	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
011	LIST OF MATERIALS		

1007522 D

NEXT ASSY	USED ON
1007578	
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

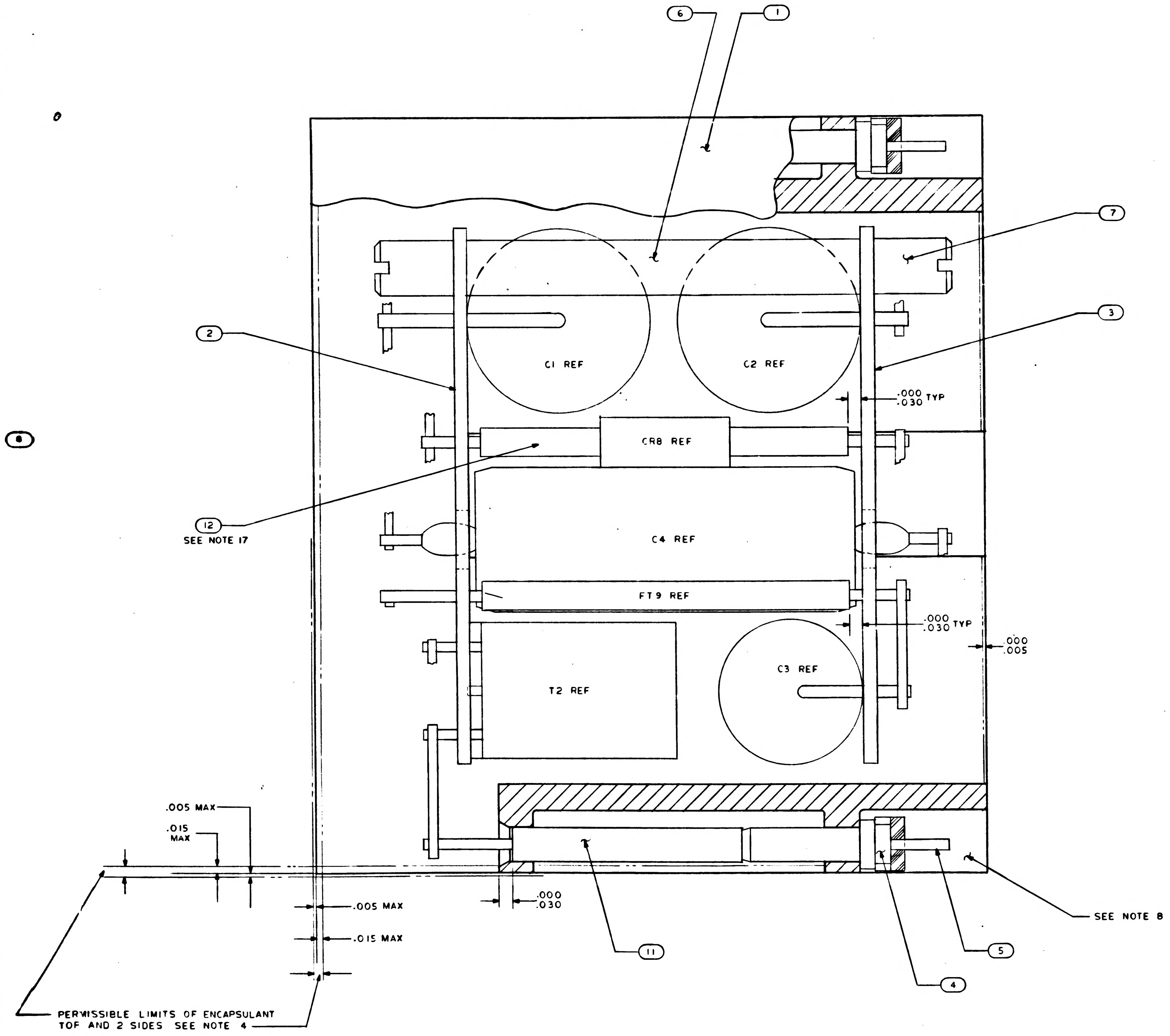
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT

DRAWN Cavarrigo DATE 28 Jan 65
CHECKED 8 Feb 65
APPROVAL 9 Feb 65
APPROVAL 2/10/65
NASA APPROVAL 2-9-65
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

2 SPEED SWITCH
ASSEMBLY

CODE IDENT NO. —
SIZE J
NASA DRAWING NO 1007522
SCALE 10/1
WT
SHEET 1 OF 1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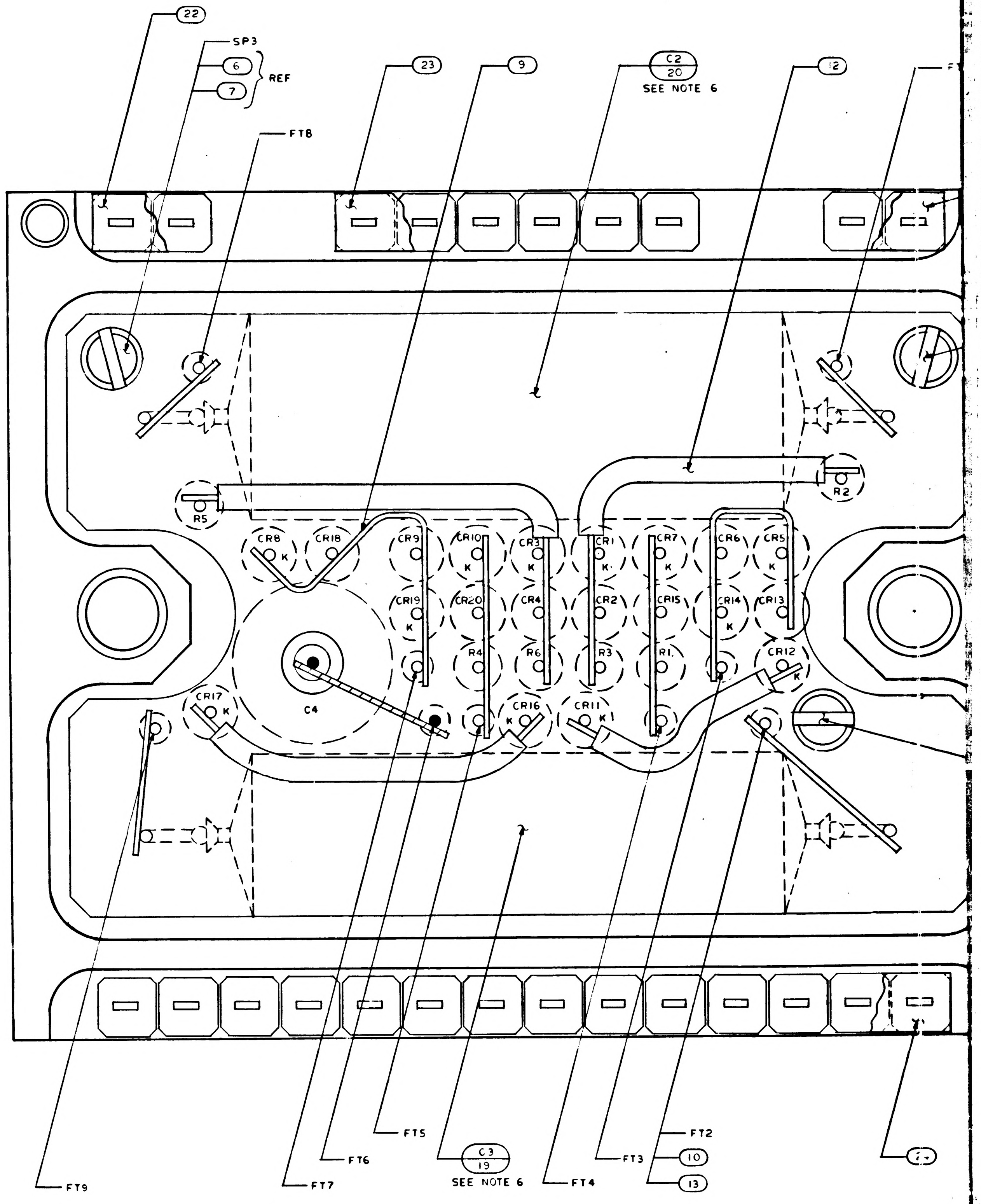
1
7
3
2
C1 REF
C2 REF
.000
.030 TYP
CR8 REF
12
SEE NOTE 17
C4 REF
FT9 REF
.000
.030 TYP
.000
.005
T2 REF
C3 REF
.005 MAX
.015
MAX
.000
.030
.005 MAX
.015 MAX
11
5
4
SEE NOTE 8
PERMISSIBLE LIMITS OF ENCAPSULANT
TOP AND 2 SIDES SEE NOTE 4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REF
FT8
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C2
20
SEE NOTE 6
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FT
R5
R2
CR8
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CR18
CR9
CR10
CR3
CR1
CR7
CR6
CR5
CR19
CR20
CR4
CR2
CR15
CR14
CR13
R4
R6
R3
R1
CR12
CR17
C4
CR16
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FT6
FT5
C3
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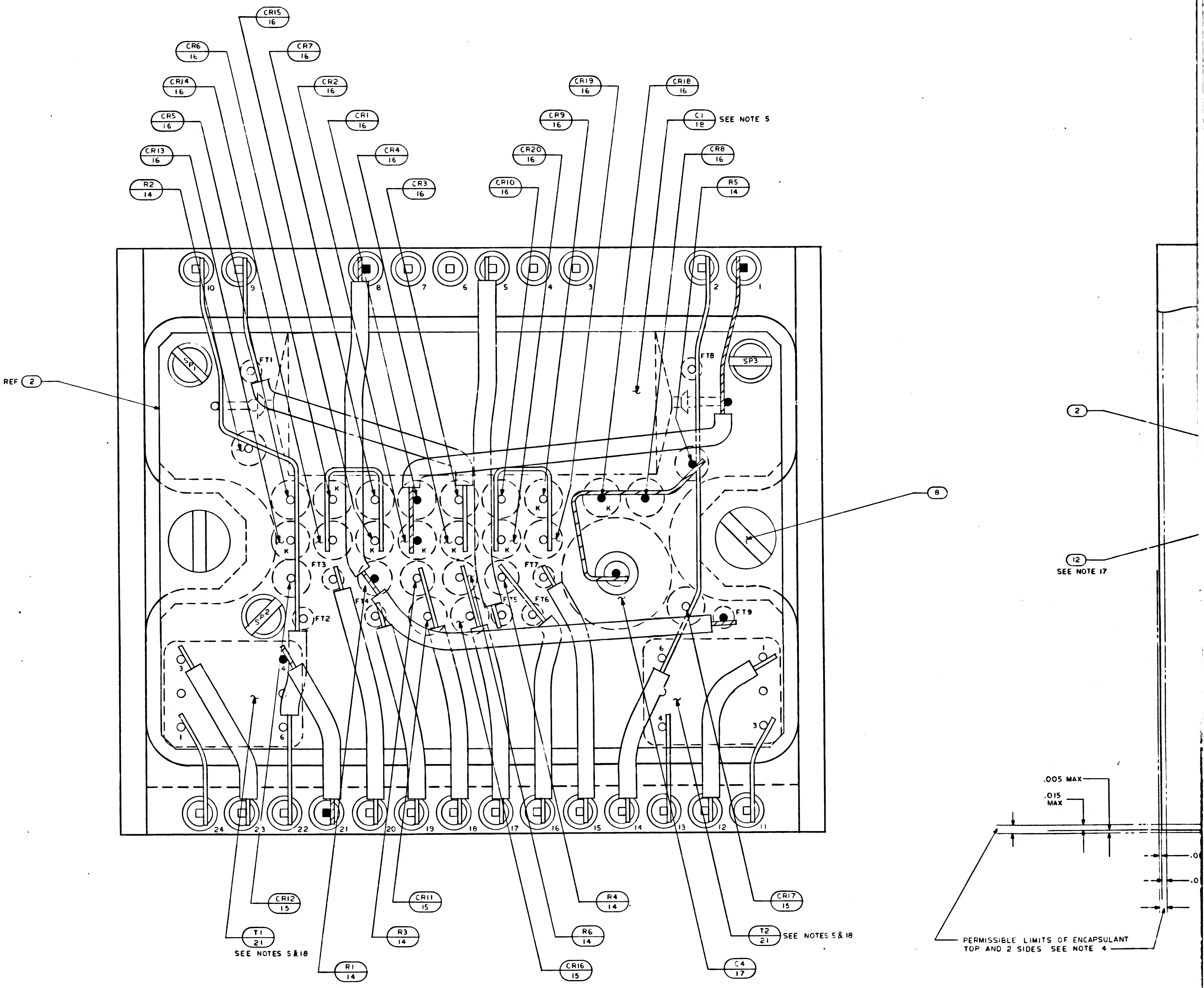
SEE NOTE 6
FT4
FT3
FT2
10
13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CR18 16
CR9 16
C1 18 SEE NOTE 5
CR20 16
CR8 16
CR10 16
R5 14
10
9
8
7
6
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4
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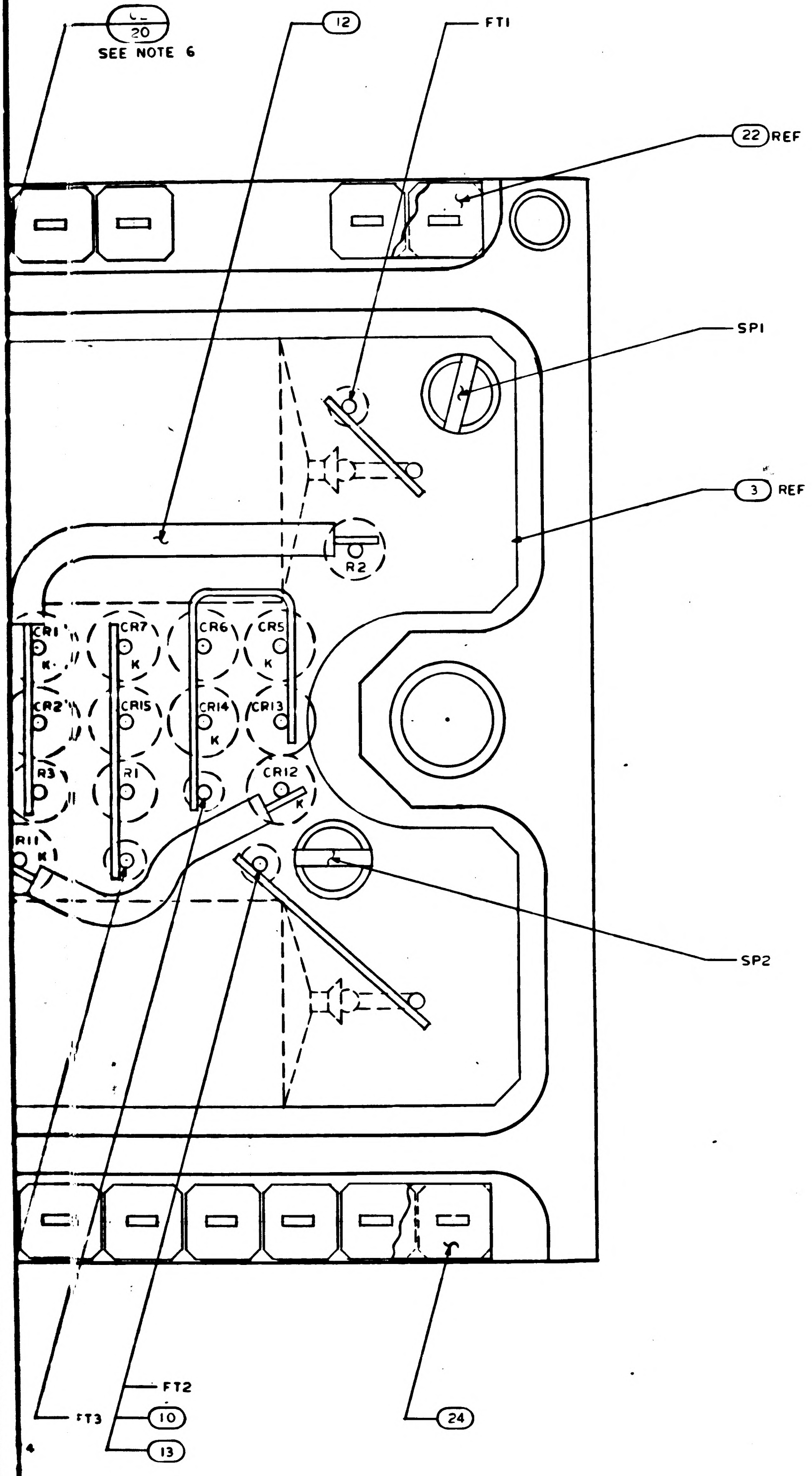
SP1
SP2
SP3
FT1
FT2
FT3
FT4
FT5
FT6
FT7
FT8
FT9
K
REF 2
8
2
12
SEE NOTE 17
24
23
22
21
20
19
18
17
16
15
14
13
12
11
CR12 15
CR11 15
R4 14
CR17 15
T1 21
SEE NOTES 5&18
R3 14
R6 14
T2 21 SEE NOTES 5&18
R1 14
CR16 15
C4 17
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULANT TOP AND 2 SIDES SEE NOTE 4

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND 1002005
3. ASSEMBLE FIND NO. 4 TO FIND NO. 5 PER ND 1002136
4. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
5. BOND FIND NO. 18 AND FIND NO. 21 TO FIND NO. 2 PER ND 1002004 TYPE I
6. BOND FIND NO. 19 AND FIND NO. 20 TO FIND NO. 3 PER ND 1002004 TYPE I
7. BOND FIND NO. 22, FIND NO. 23 AND FIND NO. 24 TO FIND NO. 4 PER ND 1002237
8. INDICATED AREA TO BE FREE OF ENCAPSULATION
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
11. AP DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
14. SP DENOTES SPACER
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. TYPICAL SLEEVING FOR FIND NO. 14, FIND NO. 15 AND FIND NO. 16
18. TRIM UNUSED LEADS OF FIND NO. 21 .010/.030 FROM CASE
19. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
20. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007522

3H

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 16331	2/9/65	WK
C	REVISED PER TDR R 16843	4 MAR 65	JJJ
D	REVISED PER TDR R 17193	16 MAR 65	A.N.
E	REVISED PER TDRR 19410	1 JUN 65	JHR



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SEE NOTE 6
12
FT1
22 REF
SP1
3 REF
R2
CR1
CR7
CR6
CR5
K
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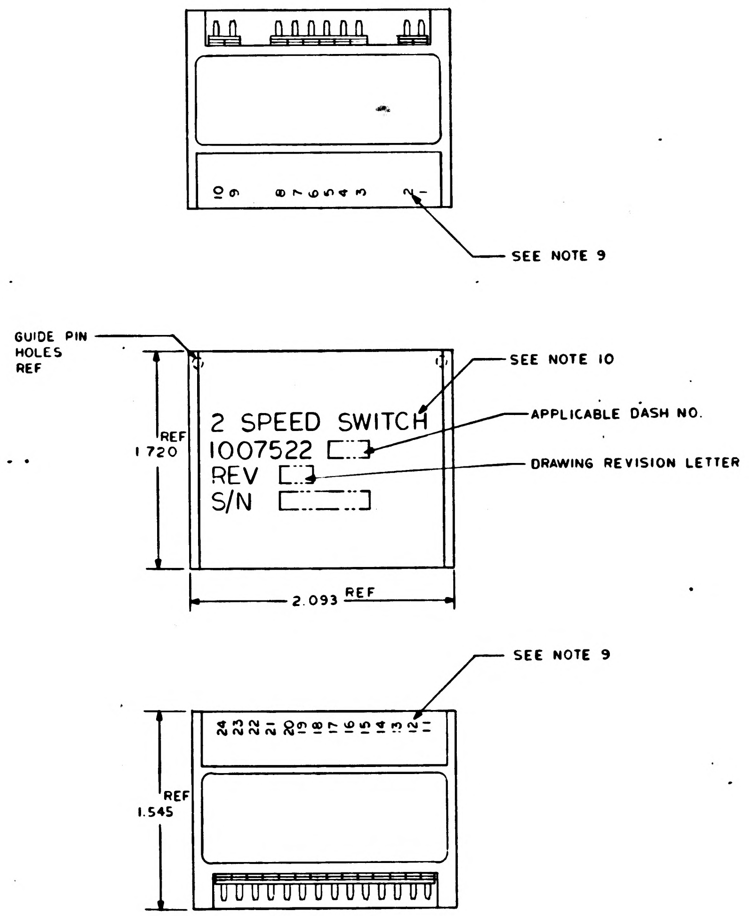
SP2
FT2
FT3
10
13
24



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SEE NOTE 9
GUIDE PIN HOLES REF
SEE NOTE 10
APPLICABLE DASH NO.
DRAWING REVISION LETTER
2 SPEED SWITCH
1007522
REV
S/N
REF 1.720
2.093 REF
SEE NOTE 9
24 23 22 21 20 19 18 17 16 15 14 13 12 11
REF 1.545

MARKING VIEW
SCALE 2/1

Ⓑ REPLACES REV A WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
	1009505	SCHEMATIC	REF
1	1008540-14	GASKET CONNECTOR MINIATURE	24
1	1008540-6	GASKET CONNECTOR MINIATURE	23
2	1008540-2	GASKET CONNECTOR MINIATURE	22
2	1010329-1	TRANSFORMER	21
1	1010264-121	CAPACITOR	20
1	1010264-120	CAPACITOR	19
1	1010264-119	CAPACITOR	18
1	1010264-22	CAPACITOR	17
16	1010392-1	DIODE	16
4	1010372-21	DIODE	15
6	1006750-63	RESISTOR	14
AR	1006776-22	INSULATION SLEEVING	13
AR	1006776-21	INSULATION SLEEVING	12
AR	1006776-20	INSULATION SLEEVING	11
AR	1006757-8	WIRE, ELECTRICAL	10
AR	1006757-1	WIRE, ELECTRICAL	9
2	1010485-98	SCREW, FILLISTER HEAD	8
6	1008161-3	SCREW, CAP SLOTTED HD SPECIAL	7
3	1015135-014	SPACER	6
24	1006782-5	CONTACT WRAPOST-MALE MIN	5
24	1006775	INSULATOR WRAPOST-MALE MIN	4
1	1008655	WIRING BOARD, BOTTOM	3
1	1008657	WIRING BOARD, TOP	2
1	1007594	FRAME	1

011 LIST OF MATERIALS

NEXT ASSY	USED ON
1007578	
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL ——
HEAT TREATMENT ——
FINAL FINISH ——

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO CONTRACT
DRAWN Emorrig DATE 28 Jan 65
CHECKED 8 Feb 65
APPROVAL 8 FEB 65
APPROVAL 4/9/65
NASA APPROVAL 2-9-65
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

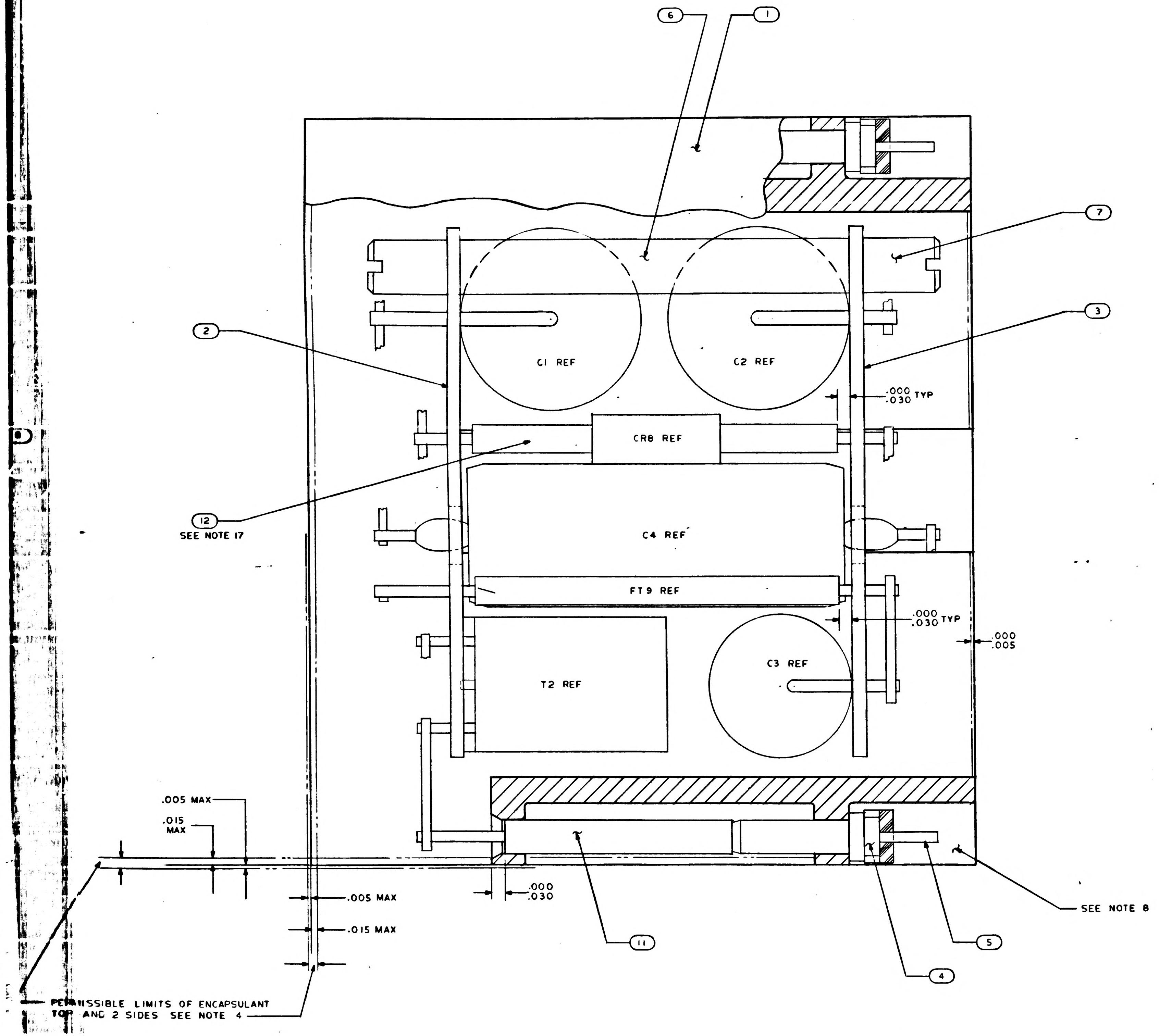
2 SPEED SWITCH
ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007522
SCALE 10/1
WT
SHEET 1 OF 1

1007522 E SH 1

(3M)

3/1007522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2
C1 REF
C2 REF
.000
.030 TYP
CR8 REF
12
SEE NOTE 17
C4 REF
FT9 REF
.000
.030 TYP
.000
.005
C3 REF
T2 REF
.005 MAX
.015
MAX
.005 MAX
.015 MAX
.000
.030
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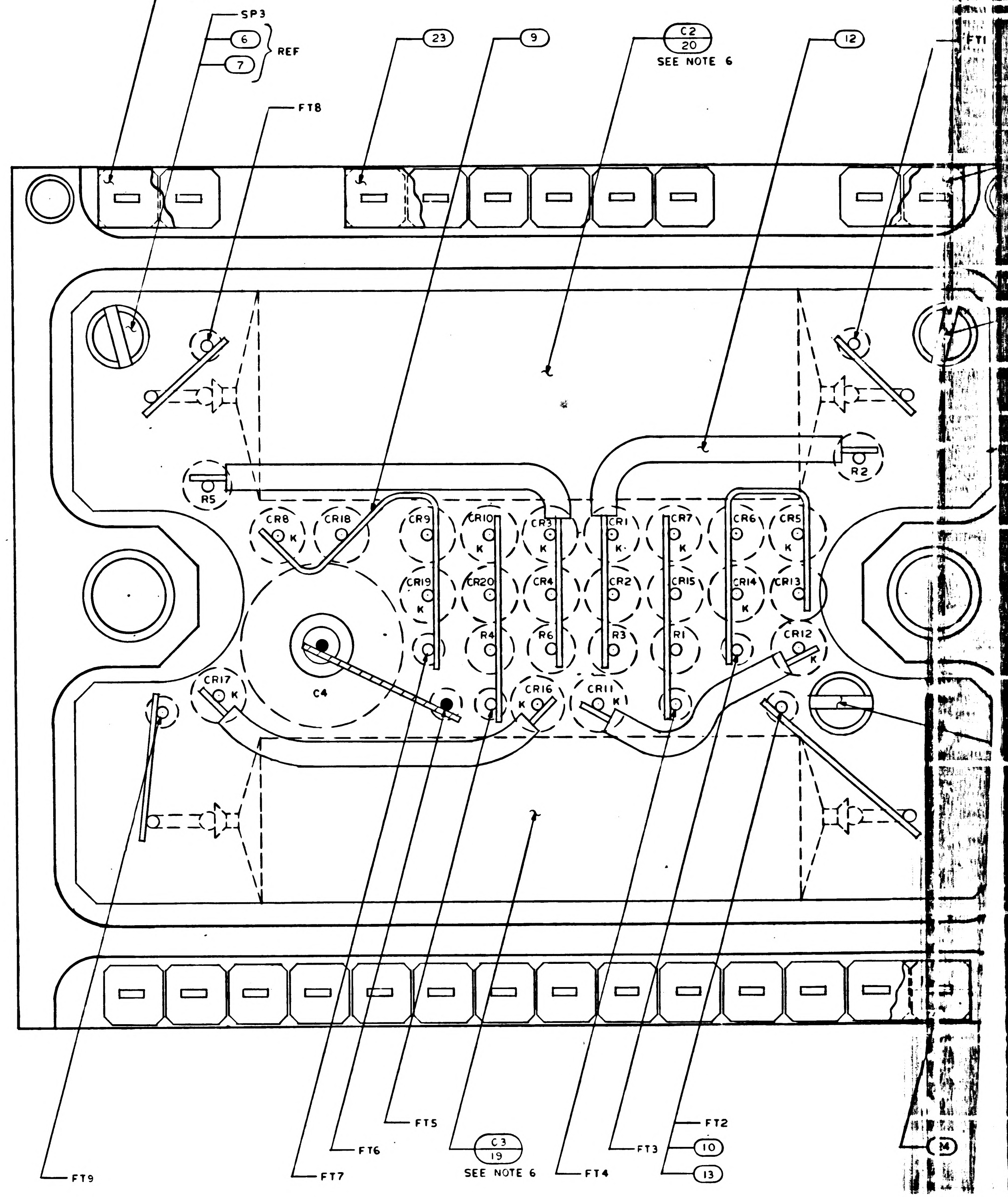
4
SEE NOTE 8
PERMISSIBLE LIMITS OF ENCAPSULANT
TOP AND 2 SIDES SEE NOTE 4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R2
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CR10
CR3
CR1
CR7
CR6
CR5
K
CR19
CR20
CR4
CR2
CR15
CR14
CR13
R4
R6
R3
R1
CR12
C4
CR17
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FT5
C3
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SEE NOTE 6
FT4
FT3
FT2
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13
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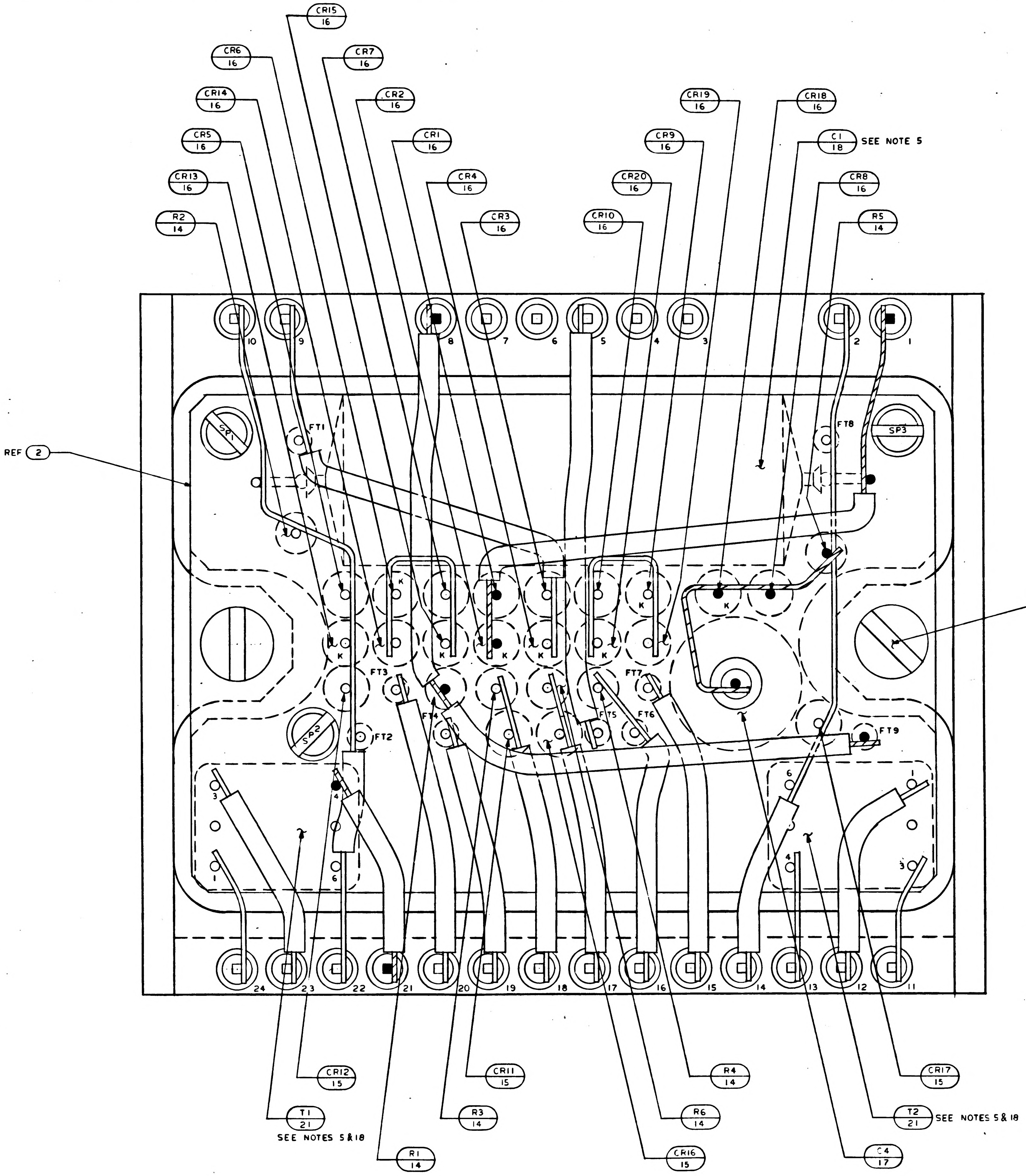
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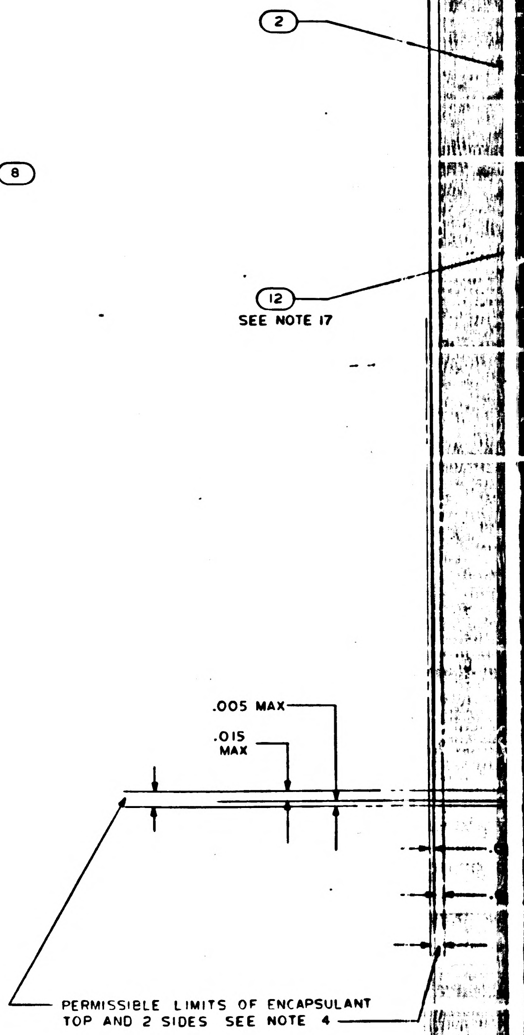
CR9 16
C1 18 SEE NOTE 5
CR20 16
CR8 16
CR10 16
R5 14
10
9
8
7
6
5
4
3
2
1
SP1
FT1
FT8
SP3
REF 2
8
K
FT3
FT4
FT5
FT6
FT7
SP2
FT2
FT9
24
23
22
21
20
19
18
17
16
15
14
13
12
11
CR12 15
CR11 15
R4 14
CR17 15
T1 21
SEE NOTES 5&18
R3 14
R6 14
T2 21 SEE NOTES 5&18
R1 14
CR16 15
C4 17


2
12
SEE NOTE 17
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULANT TOP AND 2 SIDES SEE NOTE 4

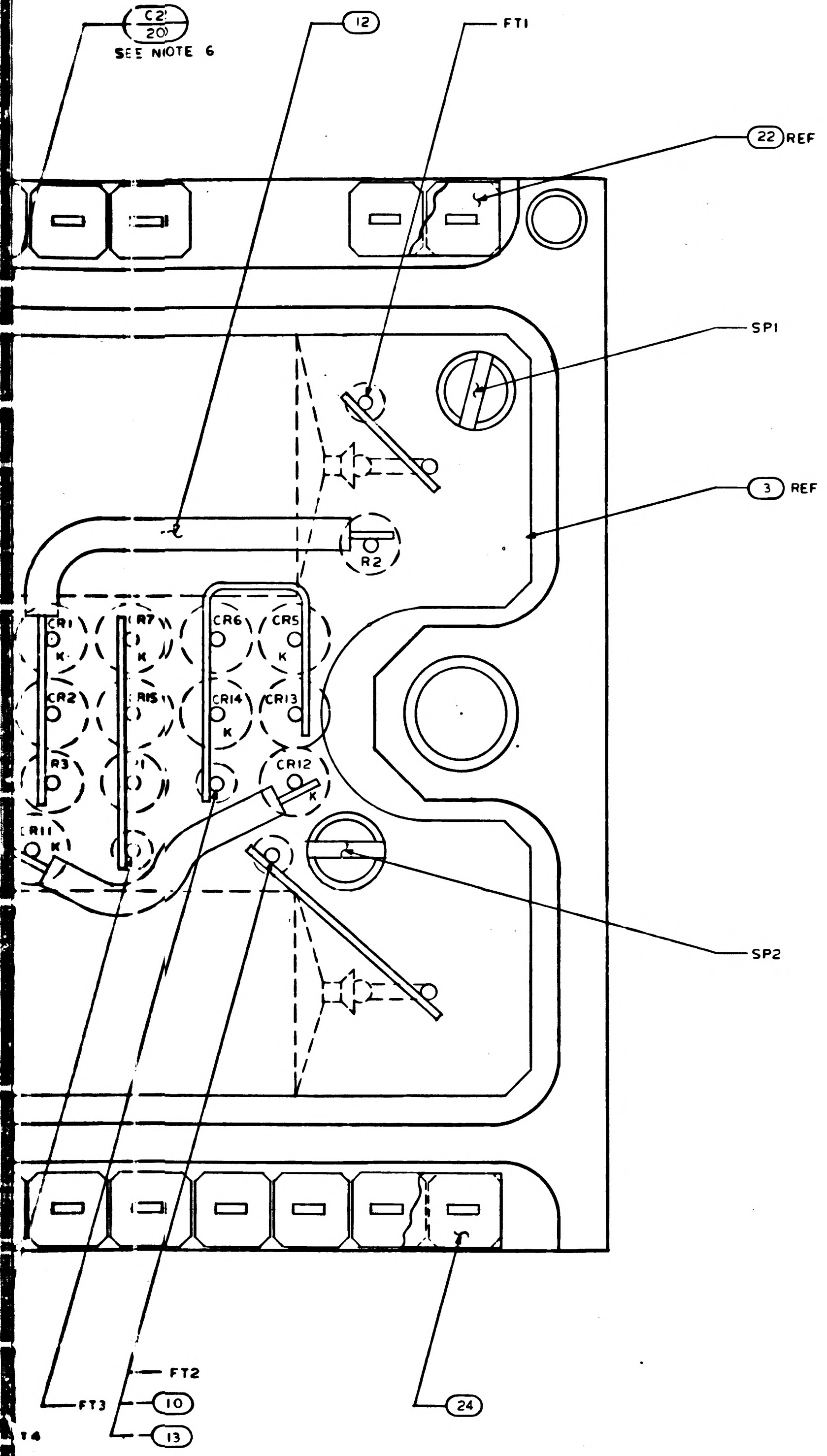
NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND 1002005
3. ASSEMBLE FIND NO. 4 TO FIND NO. 5 PER ND 1002136
4. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
5. BOND FIND NO. 18 AND FIND NO. 21 TO FIND NO. 2 PER ND 1002004 TYPE I
6. BOND FIND NO. 19 AND FIND NO. 20 TO FIND NO. 3 PER ND 1002004 TYPE I
7. BOND FIND NO. 22, FIND NO. 23 AND FIND NO. 24 TO FIND NO. 4 PER ND 1002237
8. INDICATED AREA TO BE FREE OF ENCAPSULATION
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
11. AR DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
14. SP DENOTES SPACER
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. TYPICAL SLEEVING FOR FIND NO. 14, FIND NO. 15 AND FIND NO. 16
18. TRIM UNUSED LEADS OF FIND NO. 21 .010/.030 FROM CASE
19. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
20. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007522
21. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ± .03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND 1002187 TYPE II.

1007522	E	SH 1

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 16331	2/9/65	WK
C	REVISED PER TDR R 16843	4 MAR 65	JJJ
D	REVISED PER TDR R 17193	16 MAR 65	A.N.
E	REVISED PER TDRR 19410	1 JUN 65	JHR MEA
F	REVISED PER TDRR 9485	10 JUN 65	JRD

(M)
(M)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SEE NOTE 6
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FT1
22 REF
SP1
3 REF
R2
CR1
R7
CR6
CR5
K
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CR14
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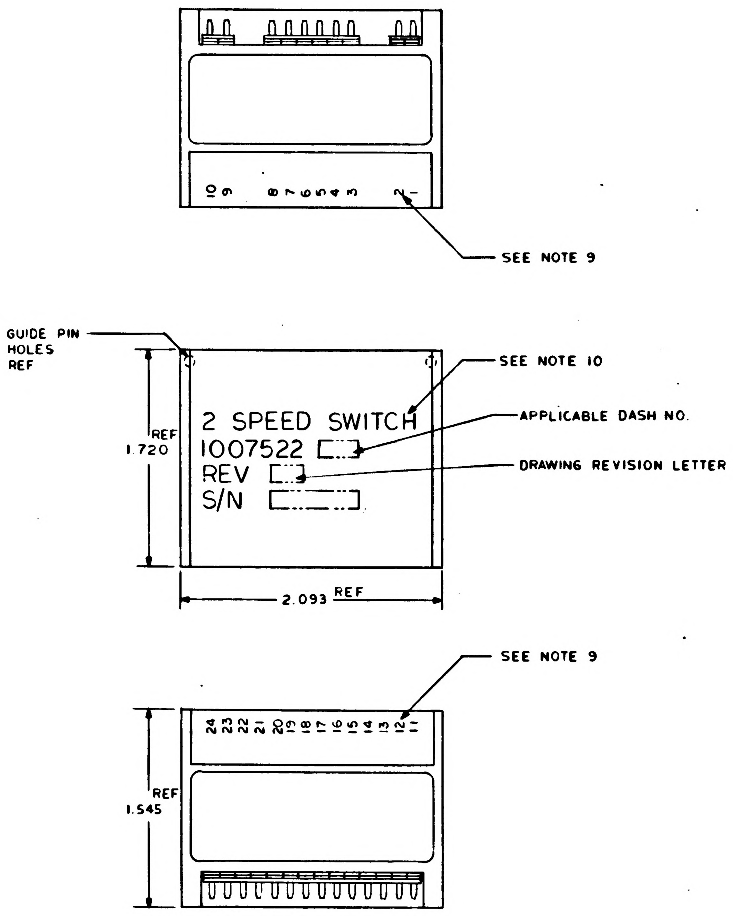
CR12
R11
SP2
24
FT2
FT3
10
13
T4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SEE NOTE 9
GUIDE PIN HOLES REF
SEE NOTE 10
2 SPEED SWITCH
1007522
REV
S/N
APPLICABLE DASH NO.
DRAWING REVISION LETTER
REF 1.720
2.093 REF
SEE NOTE 9
24 23 22 21 20 19 18 17 16 15 14 13 12 11
REF 1.545

MARKING VIEW
SCALE 2/1

(B) REPLACES REV A WITH CHANGE

☒	1009505	SCHEMATIC	REF
1	1008540-14	GASKET CONNECTOR MINIATURE	24
1	1008540-6	GASKET CONNECTOR MINIATURE	23
2	1008540-2	GASKET CONNECTOR MINIATURE	22
2	1010329-1	TRANSFORMER	21
1	1010264-121	CAPACITOR	20
1	1010264-120	CAPACITOR	19
1	1010264-119	CAPACITOR	18
1	1010264-22	CAPACITOR	17
16	1010392-1	DIODE	16
4	1010372-21	DIODE	15
6	1006750-63	RESISTOR	14
AR	1006776-22	INSULATION SLEEVING	13
AR	1006776-21	INSULATION SLEEVING	12
AR	1006776-20	INSULATION SLEEVING	11
AR	1006757-8	WIRE, ELECTRICAL	10
AR	1006757-1	WIRE, ELECTRICAL	9
2	1010485-98	SCREW, FILLISTER HEAD	8
6	1008161-3	SCREW, CAP SLOTTED HD SPECIAL	7
3	1015135-014	SPACER	6
24	1006782-5	CONTACT WRAPOST-MALE MIN	5
24	1006775	INSULATOR WRAPOST-MALE MIN	4
1	1008655	WIRING BOARD, BOTTOM	3
1	1008657	WIRING BOARD, TOP	2
1	1007594	FRAME	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
011	LIST OF MATERIALS		

1007522 F

NEXT ASSY	USED ON
1007578	
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL ——
HEAT TREATMENT ——
FINAL FINISH ——

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO
CONTRACT

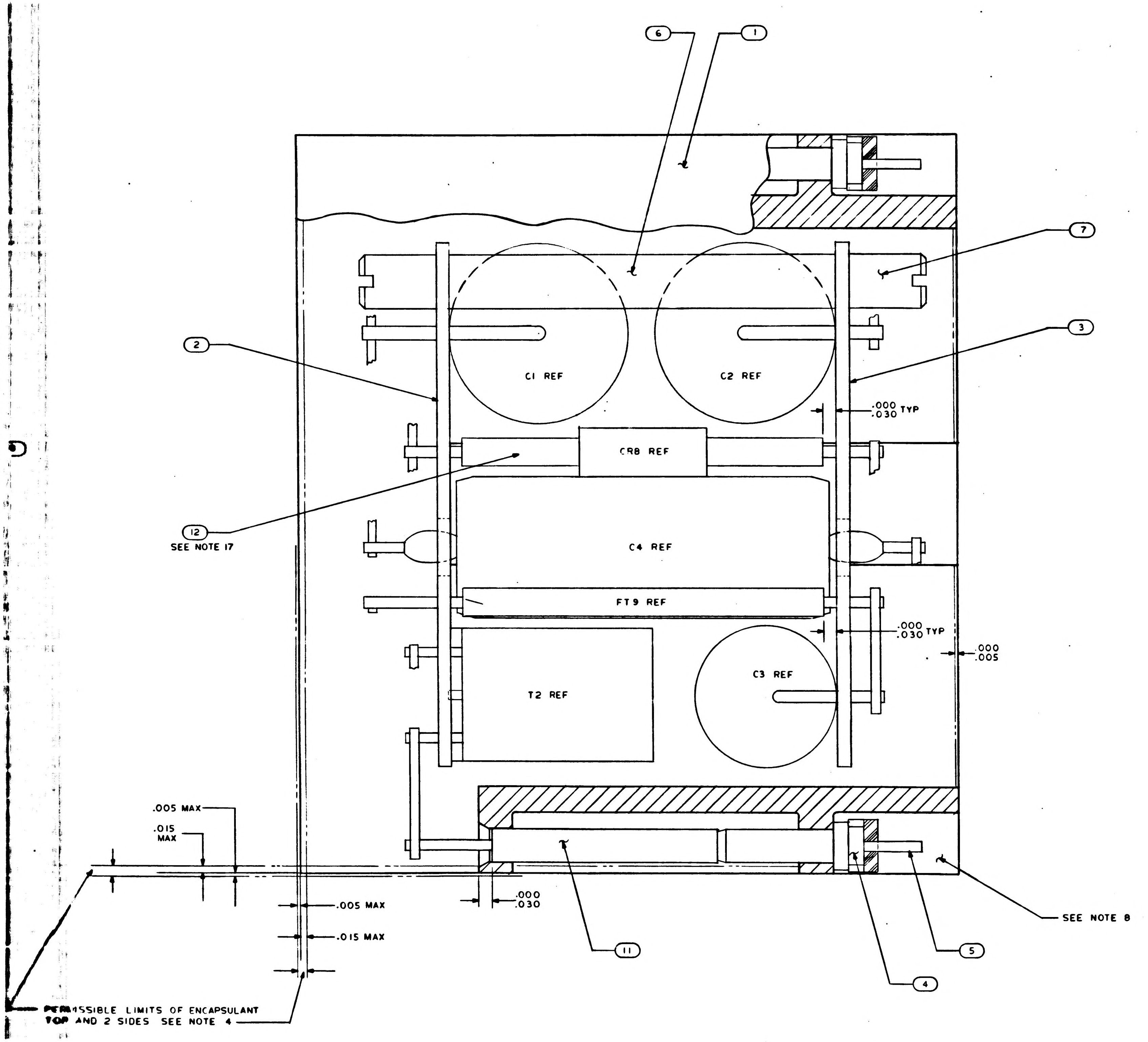
DRAWN Bonarrigo DATE 28 Jan 65
CHECKED R.P. Kurgiewicz 8 Feb 65
APPROVAL 9 FEB 65
APPROVAL E. Test 4 Feb 10/65
NASA APPROVAL 2-9-65
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

2 SPEED SWITCH ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007522
SCALE 10/1
WT
SHEET 1 OF 1

(3H)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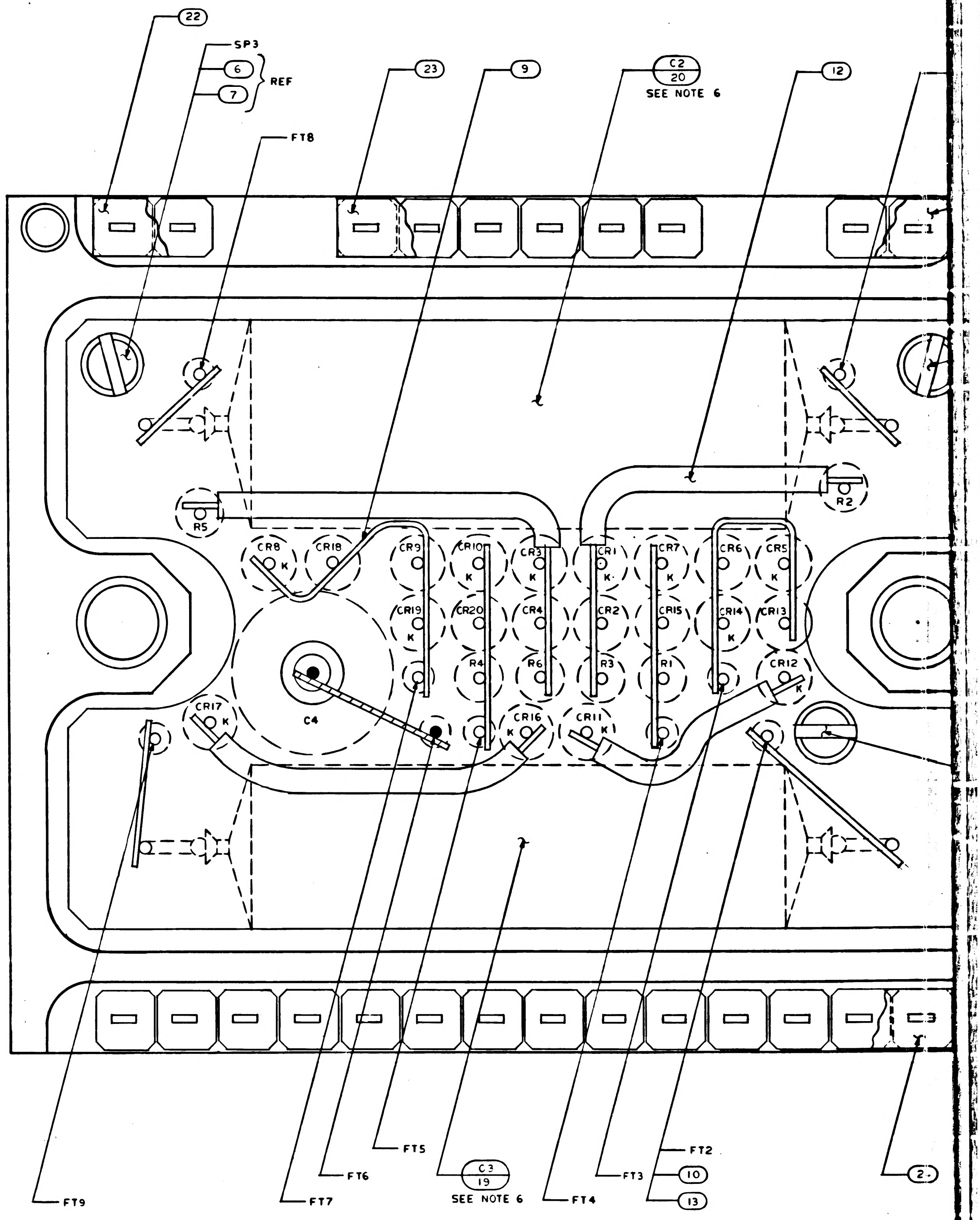
3
C1 REF
C2 REF
.000
.030 TYP
CR8 REF
12
SEE NOTE 17
C4 REF
FT9 REF
.000
.030 TYP
.000
.005
T2 REF
C3 REF
.005 MAX
.015
MAX
.005 MAX
.015 MAX
.000
.030
11
4
5
SEE NOTE 8
PERMISSIBLE LIMITS OF ENCAPSULANT
TOP AND 2 SIDES SEE NOTE 4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R2
CR8
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CR9
CR10
CR3
CR1
CR7
CR6
CR5
K
CR19
CR20
CR4
CR2
CR15
CR14
CR13
R4
R6
R3
R1
CR12
C4
CR17
CR16
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FT6
FT5
C3
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SEE NOTE 6
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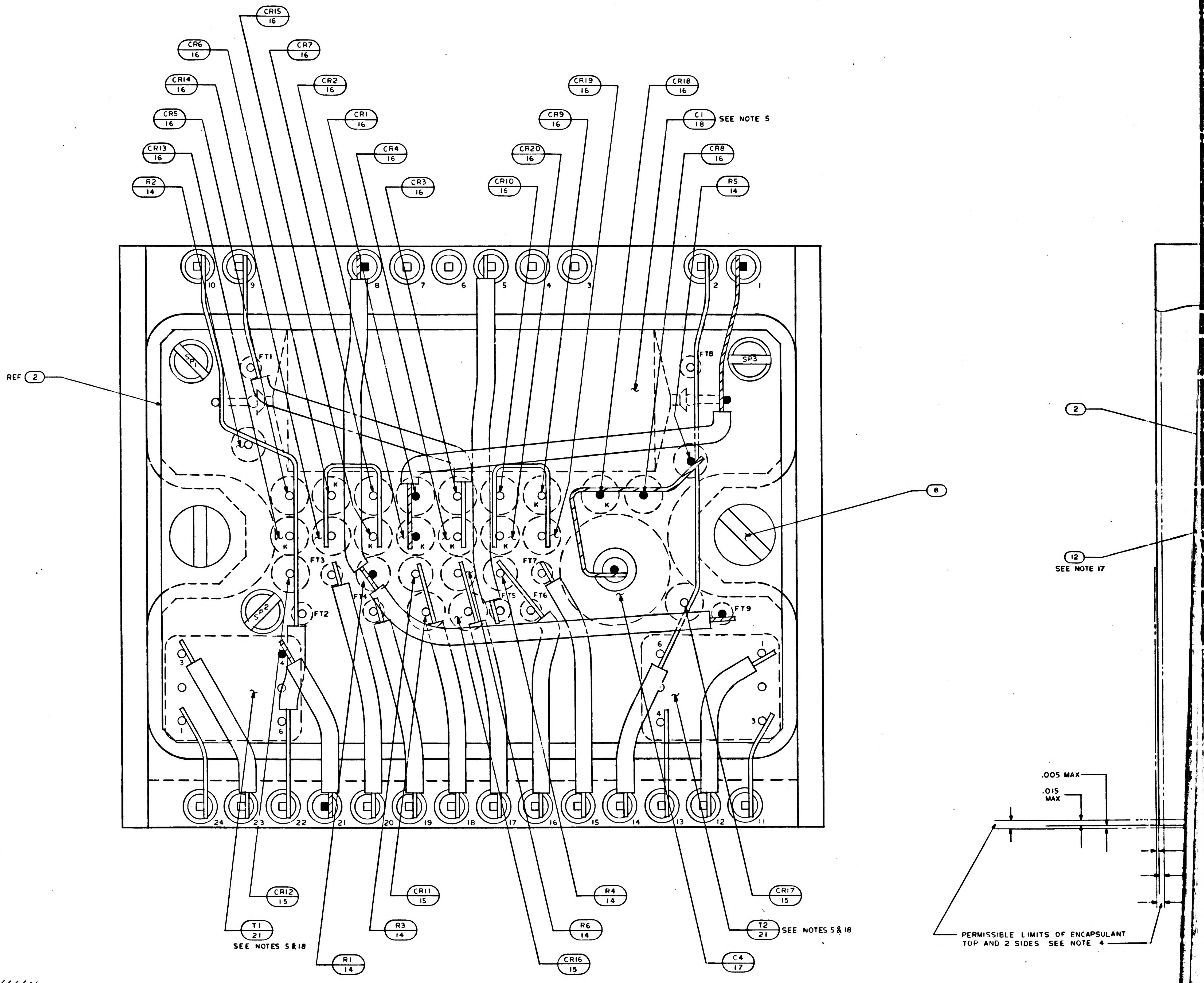
FT3
FT2
10
13
2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C
B
A
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CR6 16
CR7 16
CR14 16
CR2 16
CR5 16
CR1 16
CR13 16
CR4 16
R2 14
CR3 16
CR19 16
CR18 16
CR9 16
C1 18 SEE NOTE 5
CR20 16
CR8 16
CR10 16
R5 14
REF 2
SP1
FT1
FT8
SP3
2
8
12 SEE NOTE 17
K
FT2
FT3
FT4
FT5
FT6
FT7
FT9
SP2
10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13 12 11
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULANT TOP AND 2 SIDES SEE NOTE 4
CR12 15
T1 21
SEE NOTES 5&18
R1 14
R3 14
CR11 15
CR16 15
R6 14
R4 14
C4 17
T2 21 SEE NOTES 5&18
CR17 15

NOTES

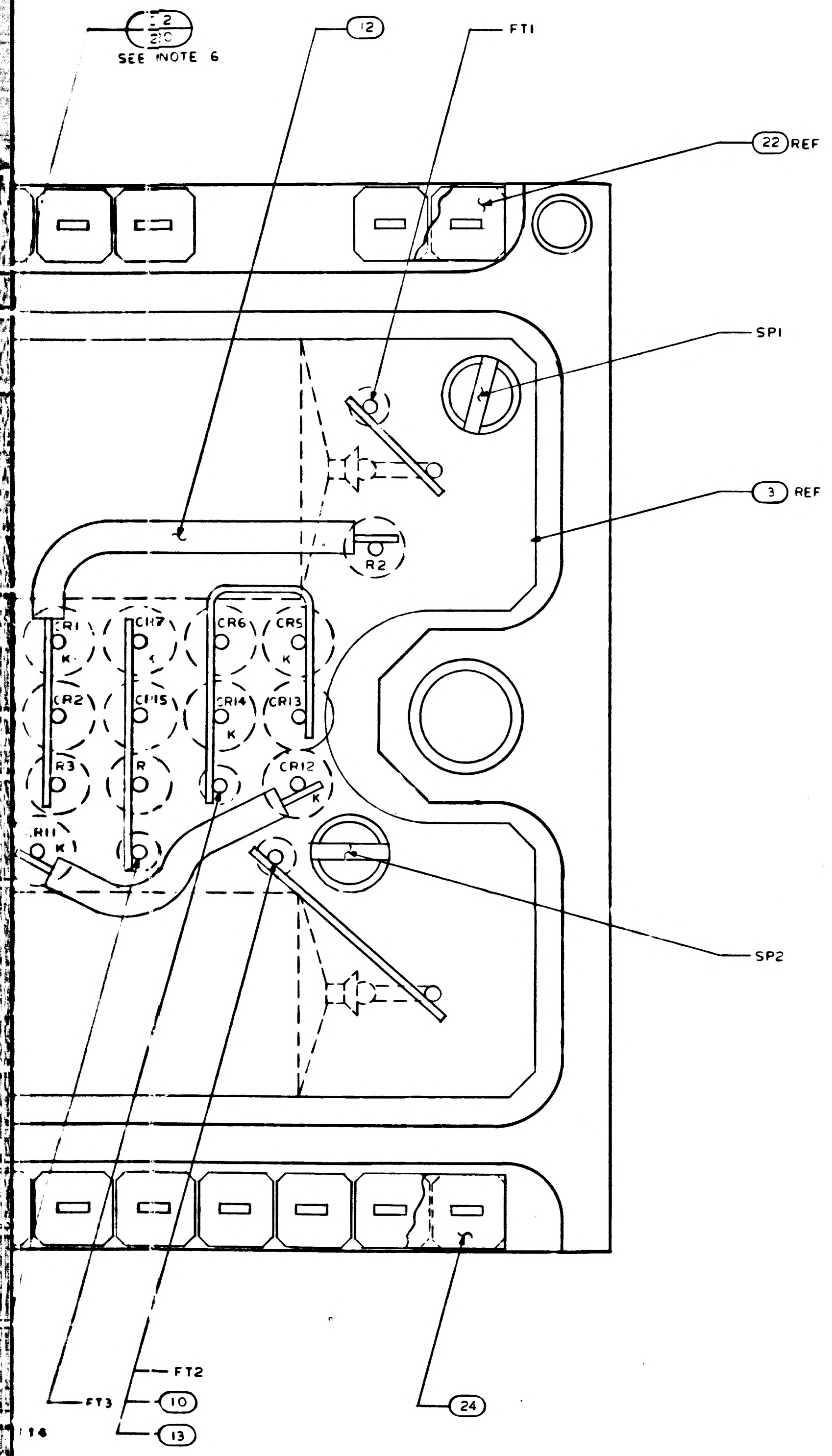
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND 1002005
3. ASSEMBLE FIND NO. 4 TO FIND NO. 5 PER ND 1002136
4. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
5. BOND FIND NO. 18 AND FIND NO. 21 TO FIND NO. 2 PER ND 1002004 TYPE I
6. BOND FIND NO. 19 AND FIND NO. 20 TO FIND NO. 3 PER ND 1002004 TYPE I
7. BOND FIND NO. 22, FIND NO. 23 AND FIND NO. 24 TO FIND NO. 4 PER ND 1002237
8. INDICATED AREA TO BE FREE OF ENCAPSULATION
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
11. AR DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
14. SP DENOTES SPACER
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. TYPICAL SLEEVING FOR FIND NO. 14, FIND NO. 15 AND FIND NO. 16
18. TRIM UNUSED LEADS OF FIND NO. 21 .010/.030 FROM CASE
19. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
20. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007522
21. ~~CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND 1002187 TYPE II.~~
22. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
23. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

34

1007522 F

17 10075 22

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 16331	2/9/65	
C	REVISED PER TDR R 16843	4 MAR 65	
D	REVISED PER TDR R 17193	16 MAR 65	A.N.
E	REVISED PER TDRR 1940	JUN 65	JHR
F	REVISED PER TDRR 9485	10 JUN 65	JRD
G	REVISED PER TDRR 2043	JUN 65	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SEE NOTE 6
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SP1
3 REF
R2
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CR17
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CR5
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FT2
FT3
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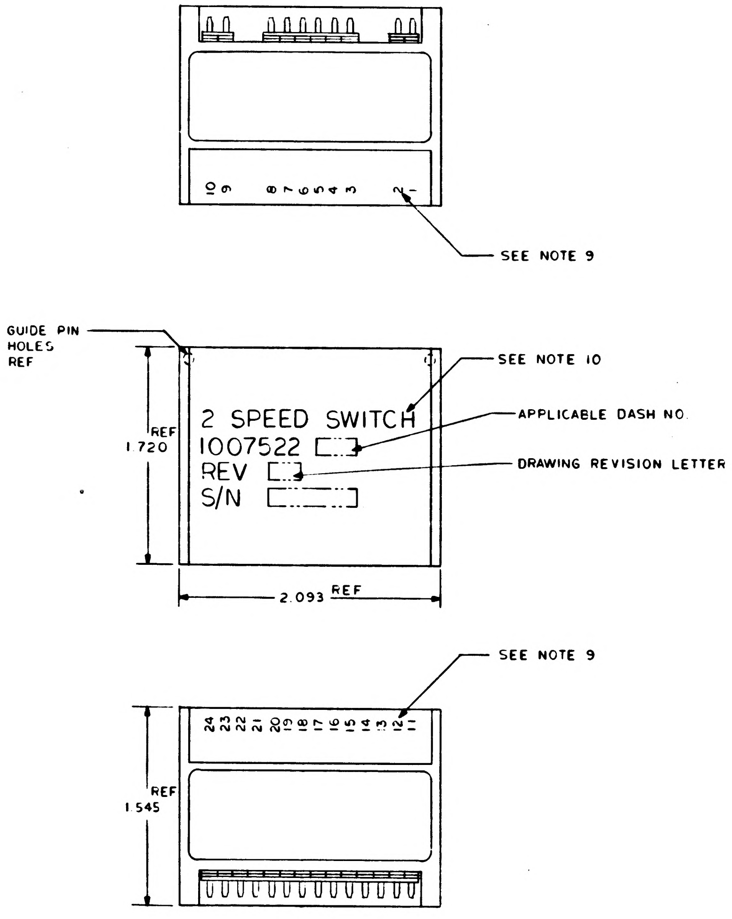
13
14
24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SEE NOTE 9
GUIDE PIN HOLES REF
SEE NOTE 10
2 SPEED SWITCH
1007522
REV
S/N
APPLICABLE DASH NO.
DRAWING REVISION LETTER
REF 1.720
2.093 REF
SEE NOTE 9
24 23 22 21 20 19 18 17 16 15 14 13 12 11
REF 1.545

MARKING VIEW
SCALE 2/1

Ⓑ REPLACES REV A
WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
☒	1009505	SCHEMATIC	REF
1	1008540-14	GASKET CONNECTOR MINIATURE	24
1	1008540-6	GASKET CONNECTOR MINIATURE	23
2	1008540-2	GASKET CONNECTOR MINIATURE	22
2	1010329-1	TRANSFORMER	21
1	1010264-121	CAPACITOR	20
1	1010264-120	CAPACITOR	19
1	1010264-119	CAPACITOR	18
1	1010264-22	CAPACITOR	17
16	1010392-1	DIODE	16
4	1010372-21	DIODE	15
6	1006750-63	RESISTOR	14
AR	1006776-22	INSULATION SLEEVING	13
AR	1006776-21	INSULATION SLEEVING	12
AR	1006776-20	INSULATION SLEEVING	11
AR	1006757-8	WIRE, ELECTRICAL	10
AR	1006757-1	WIRE, ELECTRICAL	9
2	1010485-98	SCREW, FILLISTER HEAD	8
6	1008161-3	SCREW, CAP SLOTTED HD SPECIAL	7
3	1015135-014	SPACER	6
24	1006782-5	CONTACT WRAPOST-MALE MIN	5
24	1006775	INSULATOR WRAPOST-MALE MIN	4
1	1008655	WIRING BOARD, BOTTOM	3
1	1008657	WIRING BOARD, TOP	2
1	1007594	FRAME	1
011	LIST OF MATERIALS		

1007522 G

NEXT ASSY	USED ON
1007578	
1007579	
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL ——
HEAT TREATMENT ——
FINAL FINISH ——

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN Barrigo DATE 28 Jan 65
CHECKED 8 Feb 65
APPROVAL 8 FEB 65
APPROVAL 2/8/65
NASA APPROVAL 2-9-65
MIT APPROVAL

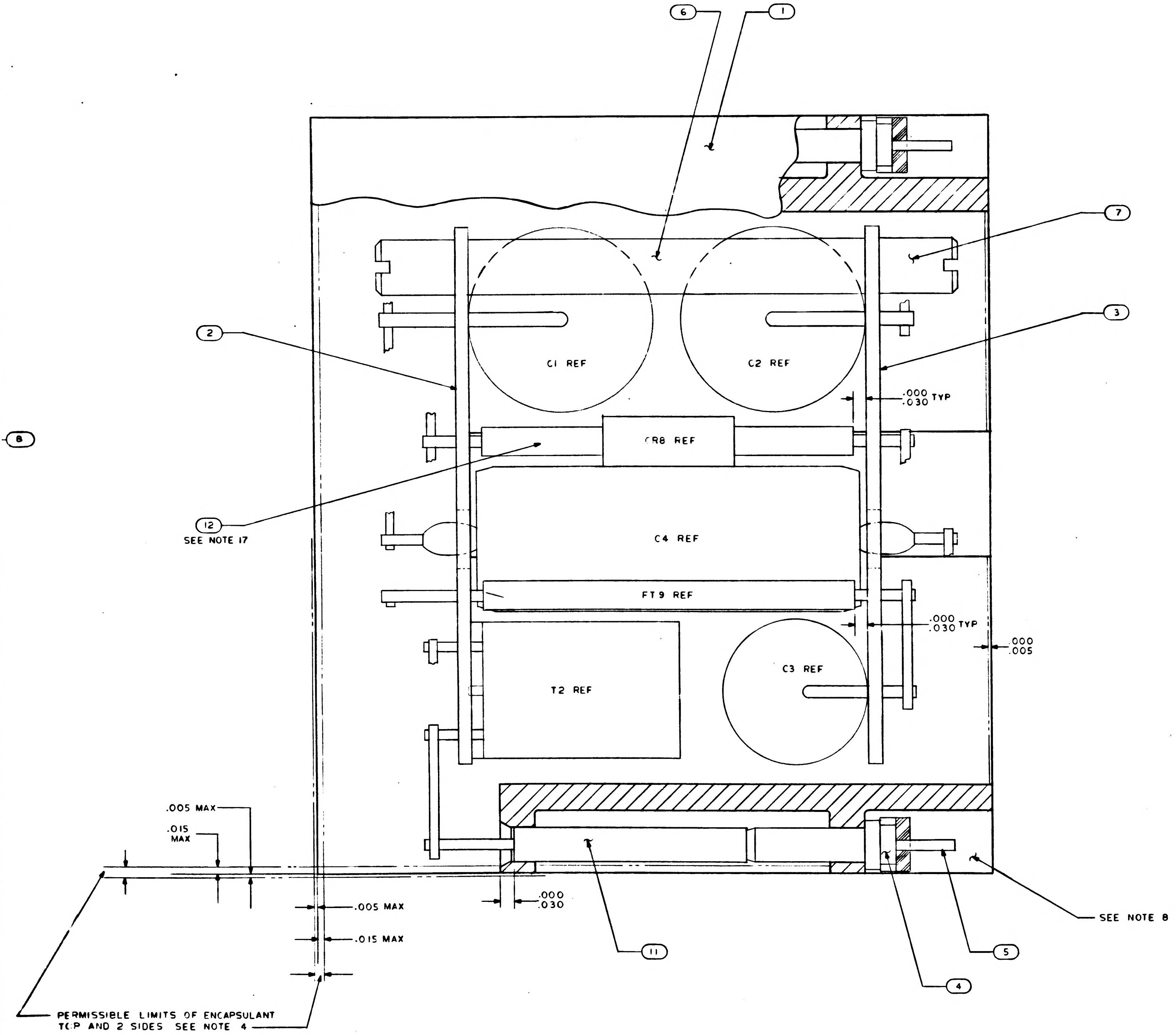
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

2 SPEED SWITCH ASSEMBLY

CODE IDENT NO 80230
SIZE J
NASA DRAWING NO 1007522
SCALE 10/1
WT
SHEET 1 OF 1

1007522 G SH 1

3/1007522


6
1
7
3
2
C1 REF
C2 REF
.000
.030 TYP
CR8 REF
12
SEE NOTE 17
C4 REF
FT9 REF
.000
.030 TYP
.000
.005
T2 REF
C3 REF
8
.005 MAX
.015
MAX
.000
.030
.005 MAX
.015 MAX
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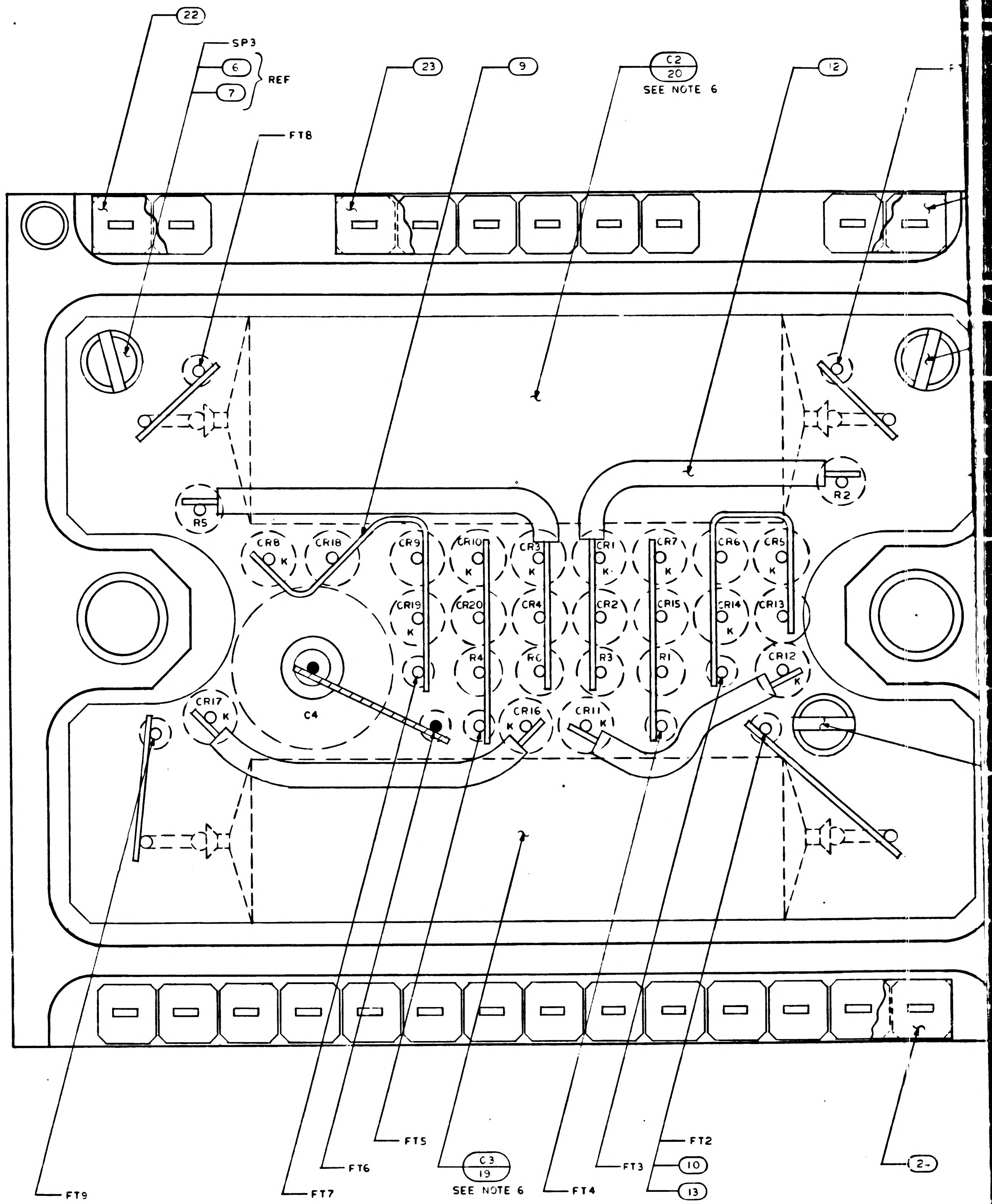
4
5
SEE NOTE 8
PERMISSIBLE LIMITS OF ENCAPSULANT
TOP AND 2 SIDES SEE NOTE 4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SP3
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REF
FT8
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C2
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SEE NOTE 6
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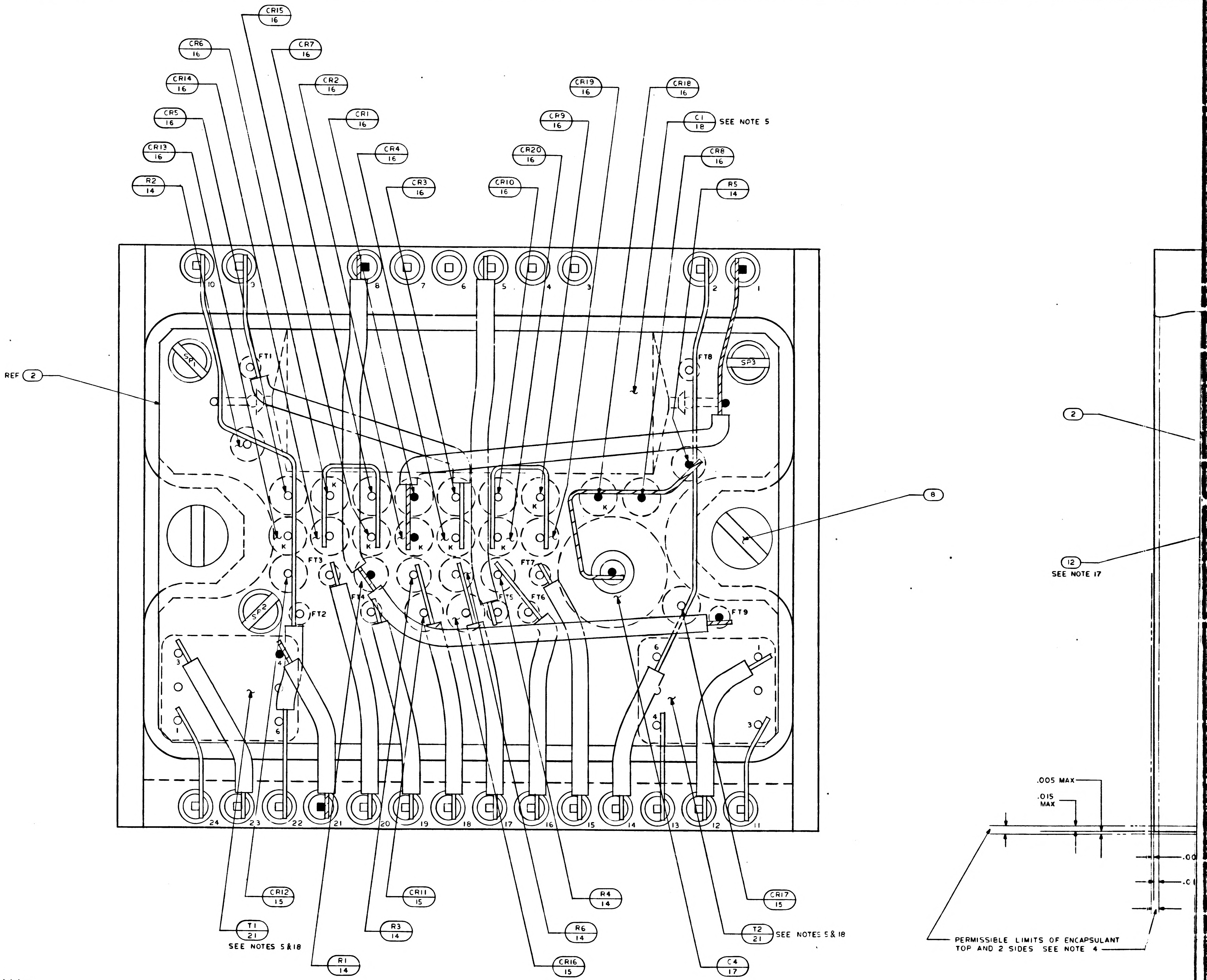
R5
R2
CR8
CR18
CR9
CR10
CR3
CR1
CR7
CR6
CR5
CR19
CR20
CR4
CR2
CR15
CR14
CR13
R4
R6
R3
R1
CR12
C4
CR17
CR16
CR11
K
FT9
FT7
FT6
FT5
C3
19
SEE NOTE 6
FT4
FT3
FT2
10
13
2

1007522 G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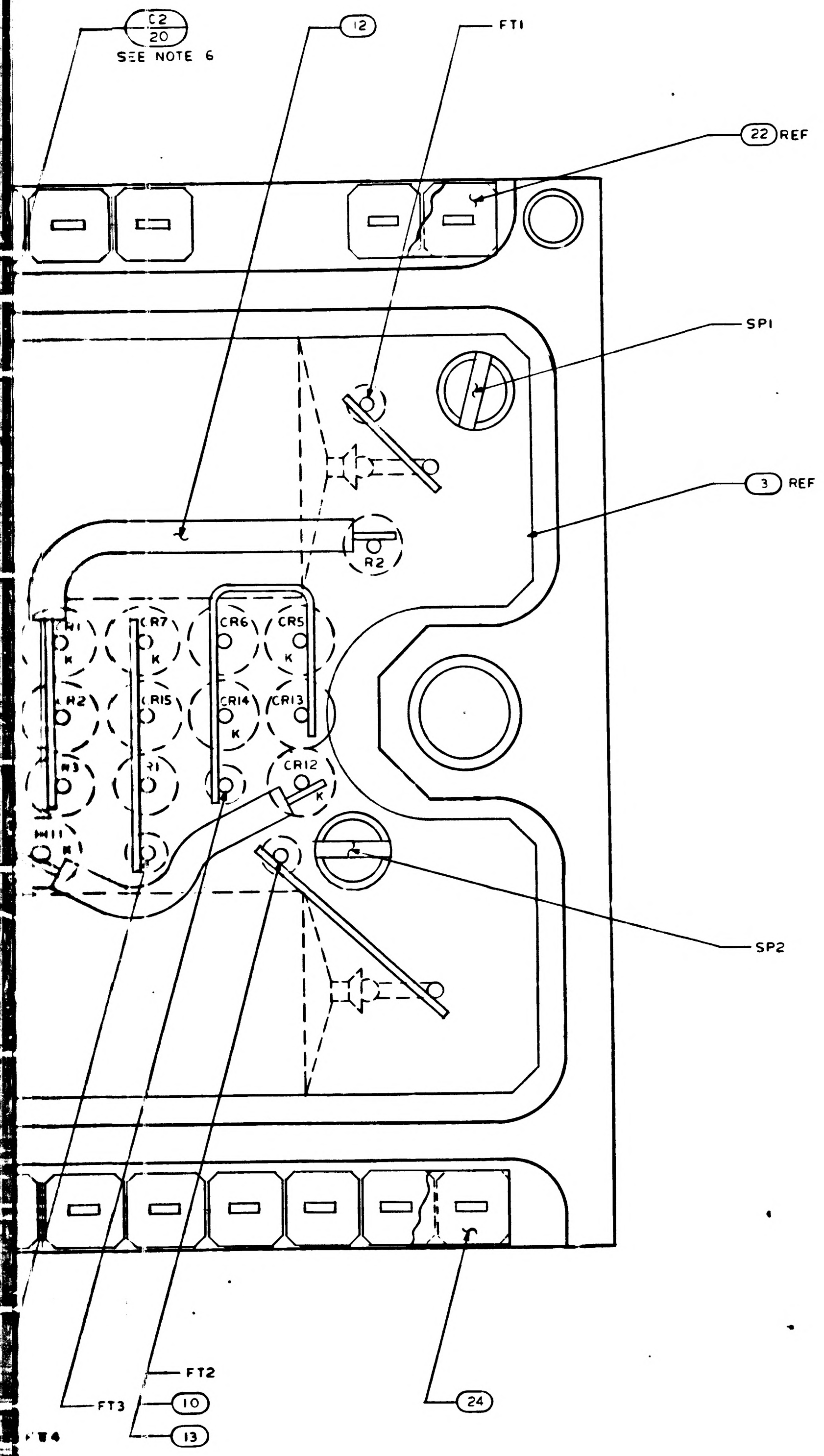
CR5 16
CR1 16
CR13 16
CR4 16
R2 14
CR3 16
CR19 16
CR18 16
CR9 16
C1 18 SEE NOTE 5
CR20 16
CR8 16
CR10 16
R5 14
REF 2
FT1
FT8
SP1
SP3
SP2
FT2
FT3
FT4
FT5
FT6
FT7
FT9
K
8
2
12 SEE NOTE 17
10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13 12 11
CR12 15
CR11 15
R4 14
CR17 15
T1 21 SEE NOTES 5 & 18
R3 14
R6 14
T2 21 SEE NOTES 5 & 18
R1 14
CR16 15
C4 17
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULANT TOP AND 2 SIDES SEE NOTE 4

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND 1002005
3. ASSEMBLE FIND NO. 4 TO FIND NO. 5 PER ND 1002136
4. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
5. BOND FIND NO. 18 AND FIND NO. 21 TO FIND NO. 2 PER ND 1002004 TYPE I
6. BOND FIND NO. 19 AND FIND NO. 20 TO FIND NO. 3 PER ND 1002004 TYPE I
7. ~~BOND FIND NO. 22, FIND NO. 23 AND FIND NO. 24 TO FIND NO. 4 PER ND 1002237~~
8. INDICATED AREA TO BE FREE OF ENCAPSULATION
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
11. AP DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
14. SP DENOTES SPACER
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. TYPICAL SLEEVING FOR FIND NO. 14, FIND NO. 15 AND FIND NO. 16
18. TRIM UNUSED LEADS OF FIND NO. 21 .010/.030 FROM CASE
19. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
20. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007522
21. ~~CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND 1002187 TYPE II.~~
22. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
23. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II. AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 16331	2/9/65	
C	REVISED PER TDRR 16843	4 MAR 65	JJJ
D	REVISED PER TDRR 17193	16 MAR 65	A.N.
E	REVISED PER TDRR 1940	1 JUN 65	JHR
F	REVISED PER TDRR 9485	10 JUN 65	JRC
G	REVISED PER TDRR 20143	JUN 65	
H	REVISED PER TDRR 22957	11 OCT 65	


C2
20
SEE NOTE 6
12
FT1
22 REF
SP1
3 REF
R2
CR7
CR6
CR5
K
R2
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CR1
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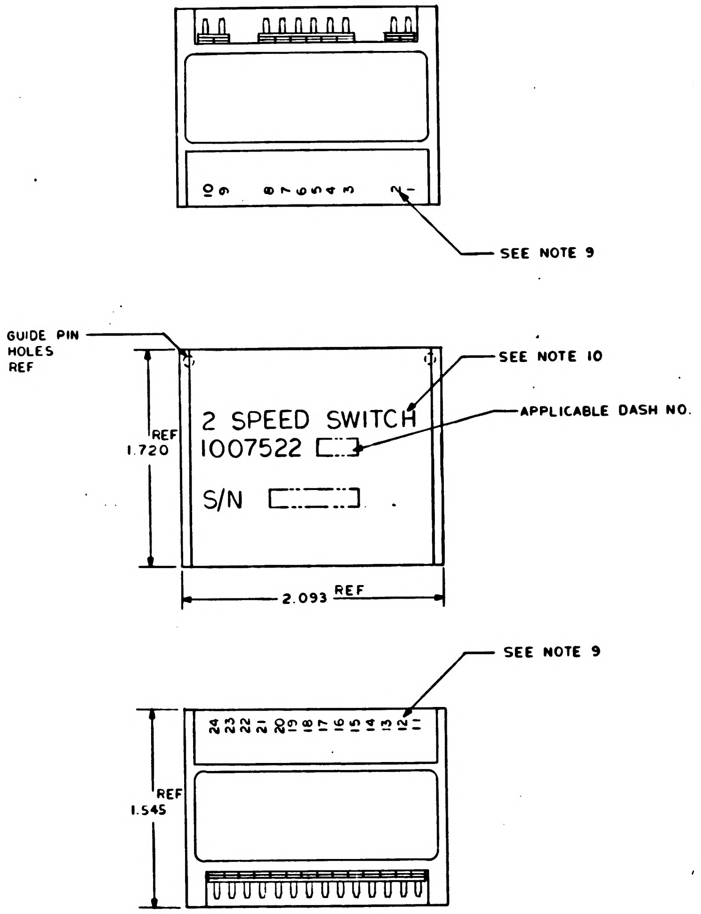
FT2
FT3
10
13
T4
24


SEE NOTE 9
GUIDE PIN HOLES REF
SEE NOTE 10
2 SPEED SWITCH
1007522
APPLICABLE DASH NO.
S/N
REF 1.720
2.093 REF
SEE NOTE 9
REF 1.545
24 23 22 21 20 19 18 17 16 15 14 13 12 11
10 9 8 7 6 5 4 3 2 1

MARKING VIEW
SCALE 2/1

Ⓑ REPLACES REV A WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
☒	1009505	SCHEMATIC	REF
1	1008540-14	GASKET CONNECTOR MINIATURE	24
1	1008540-6	GASKET CONNECTOR MINIATURE	23
2	1008540-2	GASKET CONNECTOR MINIATURE	22
2	1010329-1	TRANSFORMER	21
1	1010264-121	CAPACITOR	20
1	1010264-120	CAPACITOR	19
1	1010264-119	CAPACITOR	18
1	1010264-22	CAPACITOR	17
16	1010392-1	DIODE	16
4	1010372-21	DIODE	15
6	1006750-63	RESISTOR	14
AR	1006776-22	INSULATION SLEEVING	13
AR	1006776-21	INSULATION SLEEVING	12
AR	1006776-20	INSULATION SLEEVING	11
AR	1006757-8	WIRE, ELECTRICAL	10
AR	1006757-1	WIRE, ELECTRICAL	9
2	1010485-98	SCREW, FILLISTER HEAD	8
6	1008161-3	SCREW, CAP SLOTTED HD SPECIAL	7
3	1015135-014	SPACER	6
24	1006782-5	CONTACT WRAPOST-MALE MIN	5
24	1006775	INSULATOR WRAPOST-MALE MIN	4
1	1008655	WIRING BOARD, BOTTOM	3
1	1008657	WIRING BOARD, TOP	2
1	1007594	FRAME	1

011 LIST OF MATERIALS

NEXT ASSY	USED ON
1007578	
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN DATE 28 Jan 65
CHECKED 3 Feb 65
APPROVAL 8 Feb 65
APPROVAL
NASA APPROVAL 2-9-65
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

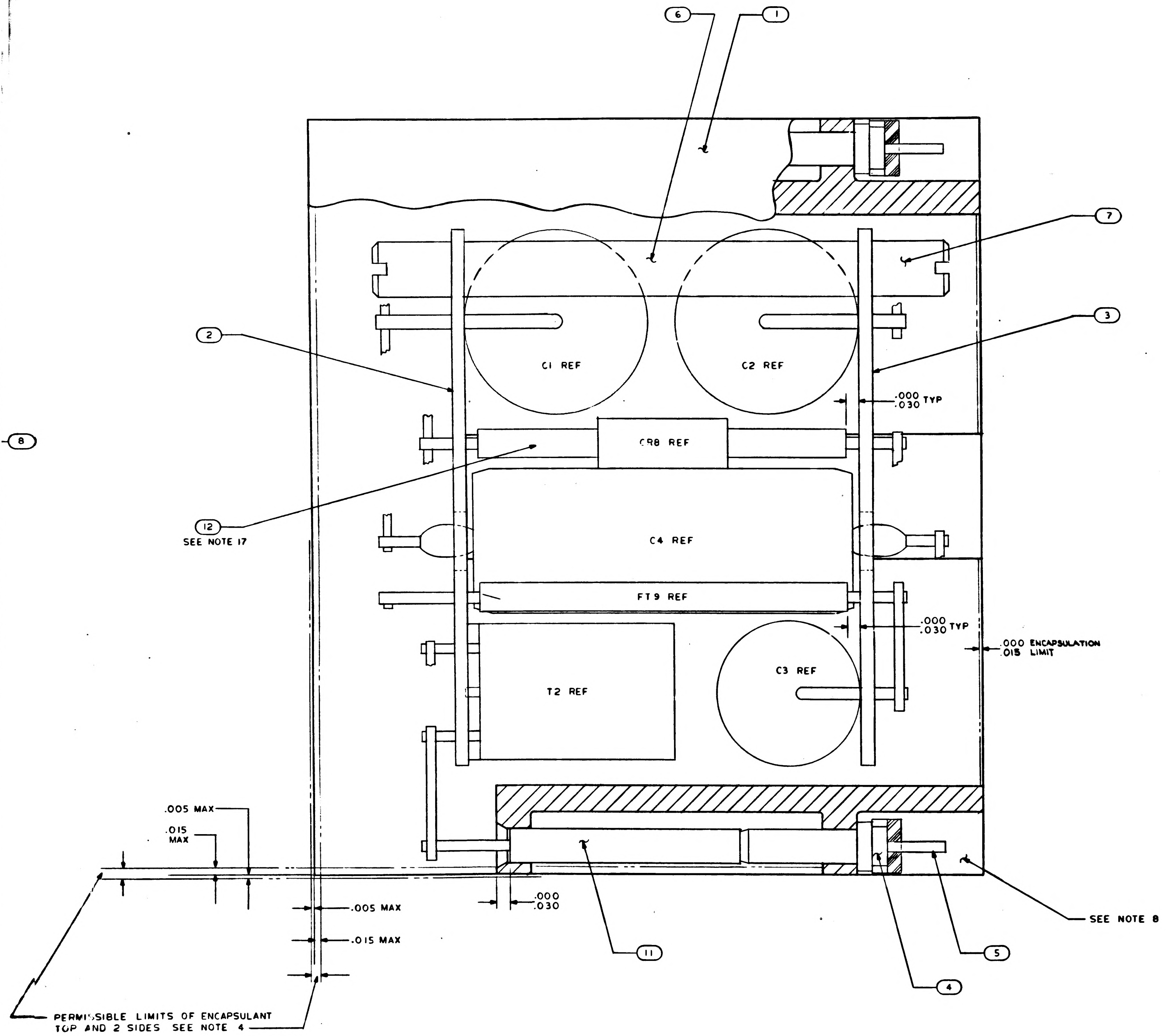
2 SPEED SWITCH ASSEMBLY

CODE IDENT NO. 80230 | SIZE J | NASA DRAWING NO 1007522
SCALE 10/1 | WT | SHEET 1 OF 1

1007522 H

1007522 | H | SH 1

3/1007522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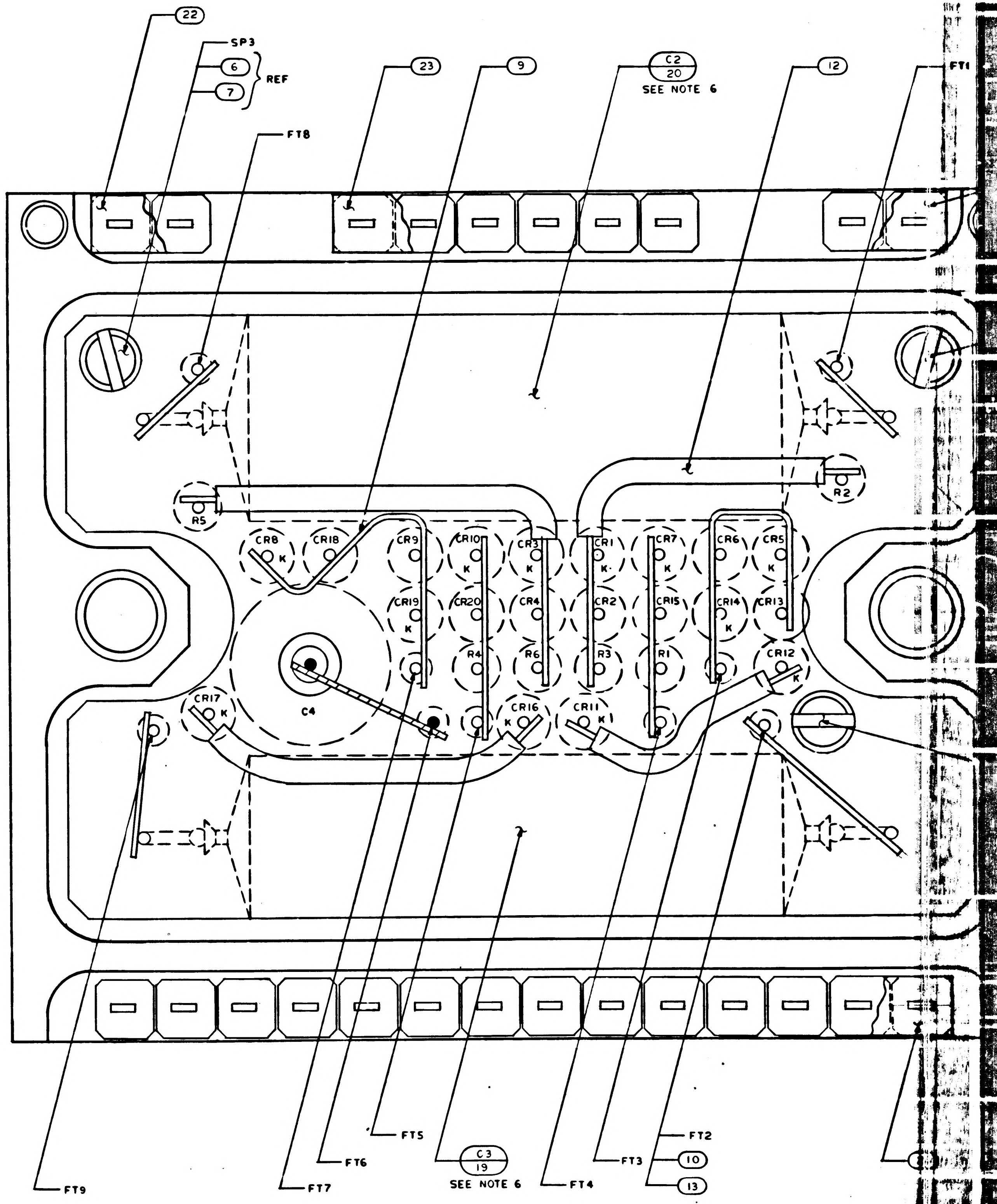
2
12
SEE NOTE 17
8
C1 REF
C2 REF
CR8 REF
C4 REF
FT9 REF
T2 REF
C3 REF
.000
.030 TYP
.000
.030 TYP
.000 ENCAPSULATION
.015 LIMIT
.005 MAX
.015
MAX
.005 MAX
.015 MAX
.000
.030
11
4
5
SEE NOTE 8
PERMISSIBLE LIMITS OF ENCAPSULANT
TOP AND 2 SIDES SEE NOTE 4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SP3
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REF
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FT8
R5
R2
CR8
CR18
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CR10
CR3
CR1
CR7
CR6
CR5
CR19
CR20
CR4
CR2
CR15
CR14
CR13
R4
R6
R3
R1
CR12
C4
CR17
CR16
CR11
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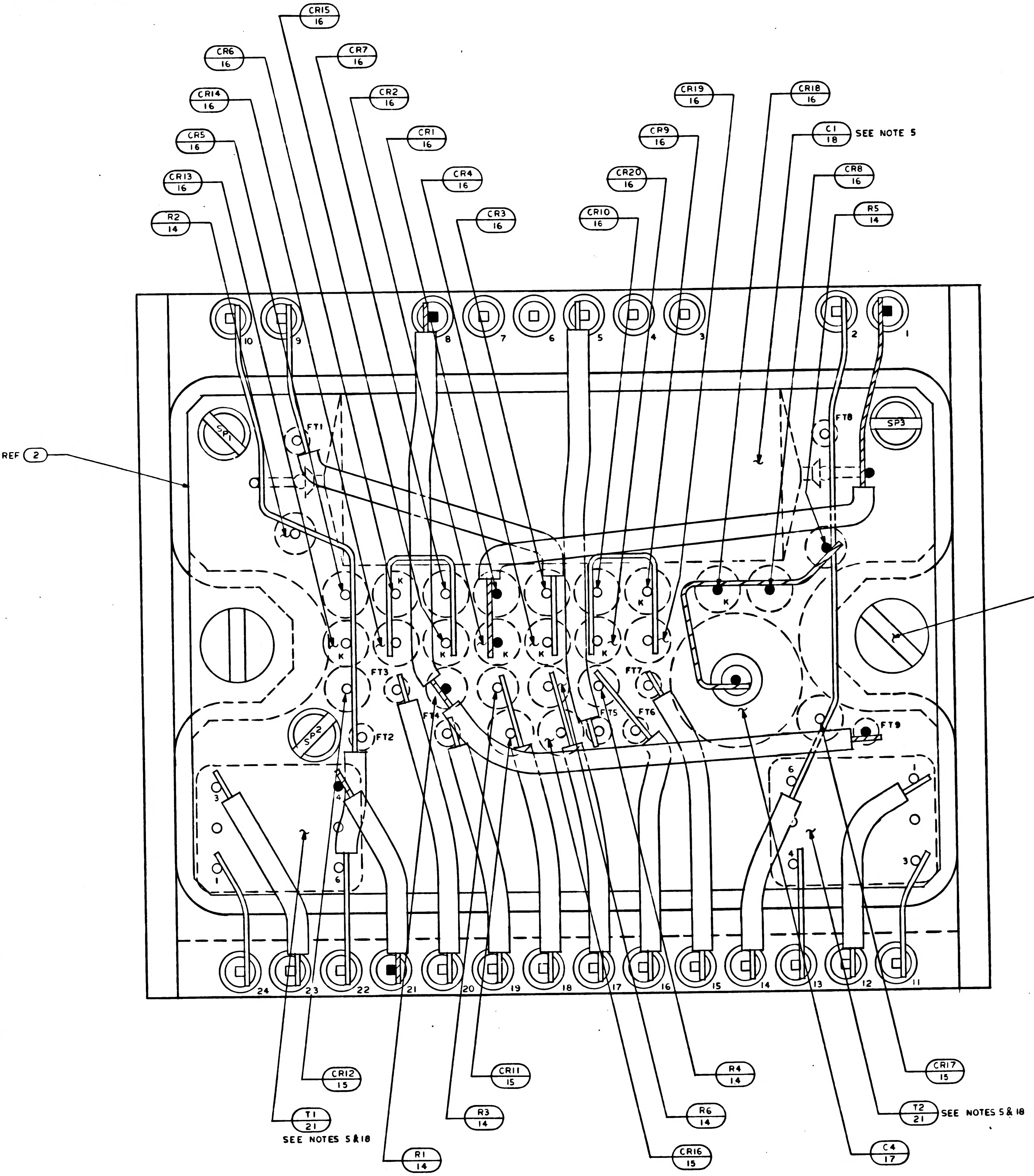
FT9
FT7
FT6
FT5
C3
19
SEE NOTE 6
FT4
FT3
FT2
10
13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CR13
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CR4
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R2
14
CR3
16
CR19
16
CR18
16
CR9
16
C1
18
SEE NOTE 5
CR20
16
CR8
16
CR10
16
R5
14
REF 2
8
SP1
SP2
SP3
FT1
FT2
FT3
FT4
FT5
FT6
FT7
FT8
FT9
K
CR12
15
T1
21
SEE NOTES 5&18
R1
14
R3
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CR11
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R6
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CR16
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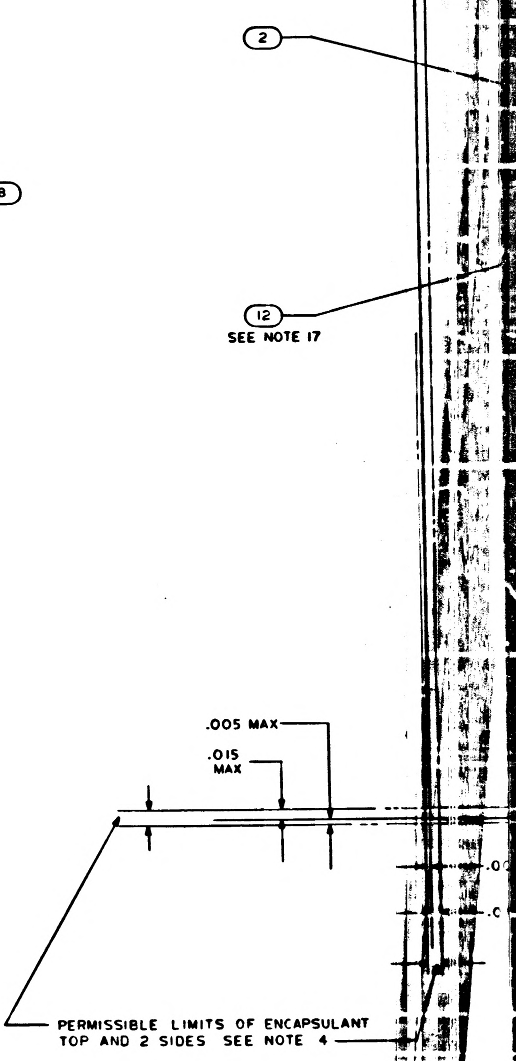
R4
14
C4
17
T2
21
SEE NOTES 5&18
CR17
15


2
12
SEE NOTE 17
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULANT TOP AND 2 SIDES SEE NOTE 4

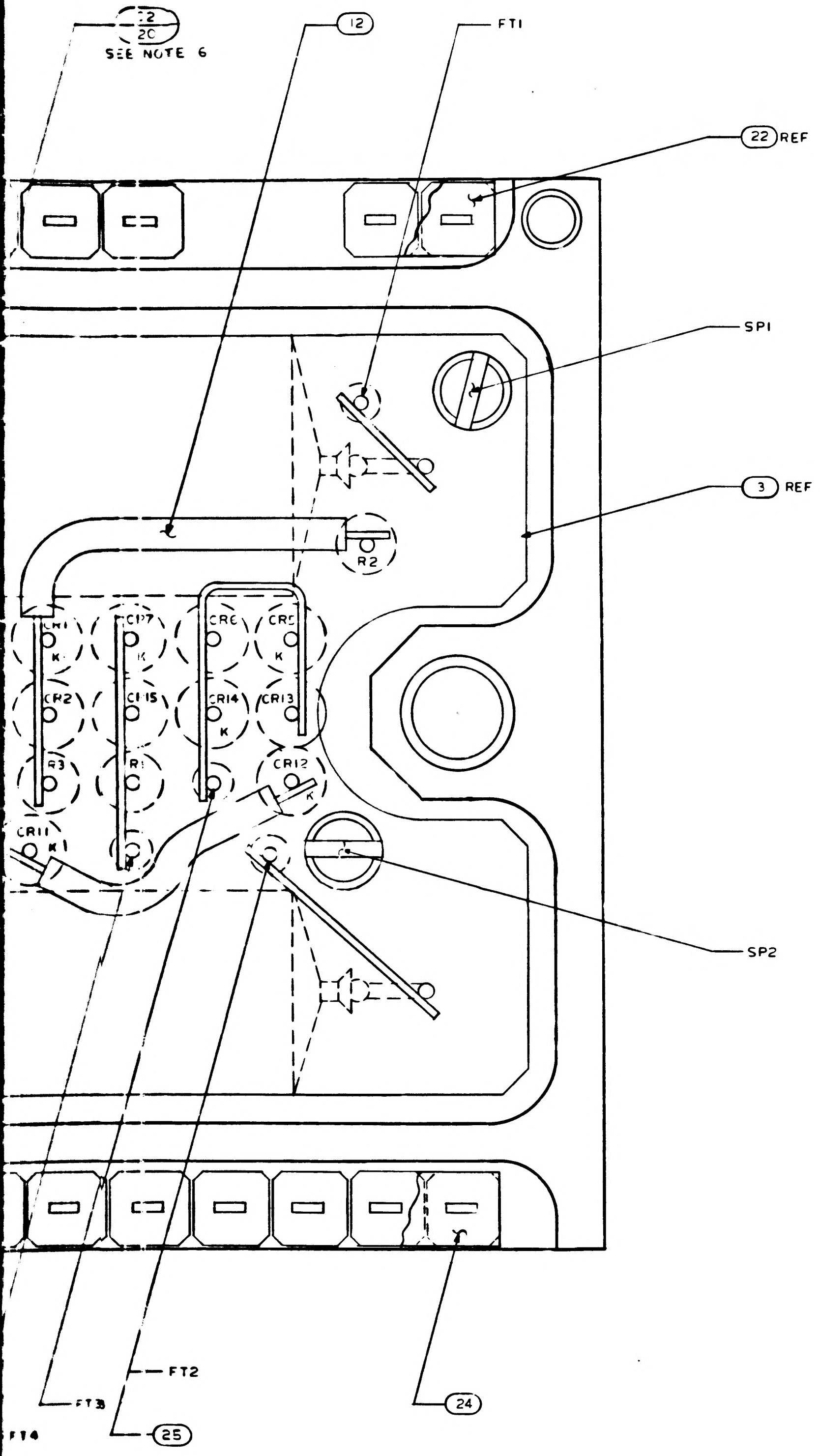
NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND 1002005
3. ASSEMBLE FIND NO. 4 TO FIND NO. 5 PER ND 1002136
4. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
5. BOND FIND NO. 18 AND FIND NO. 21 TO FIND NO. 2 PER ND 1002004 TYPE I
6. BOND FIND NO. 19 AND FIND NO. 20 TO FIND NO. 3 PER ND 1002004 TYPE I
7. ~~BOND FIND NO. 22, FIND NO. 23 AND FIND NO. 24 TO FIND NO. 4 PER ND 1002237~~
8. INDICATED AREA TO BE FREE OF ENCAPSULATION
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
11. AP DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
14. SP DENOTES SPACER
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. TYPICAL SLEEVING FOR FIND NO. 14, FIND NO. 15 AND FIND NO. 16
18. TRIM UNUSED LEADS OF FIND NO. 21 .010/.030 FROM CASE
19. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
20. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007522
21. ~~CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ± .03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND 1002187 TYPE II.~~
22. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
23. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 10.0922 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

3H

1007522	H	SH 1

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 16331	2/9/65	WK
C	REVISED PER TDR R 16843	4 MAR 65	JJJ
D	REVISED PER TDR R 17193	16 MAR 65	A.N.
E	REVISED PER TDRR 19410	1 JUN 65	JH
F	REVISED PER TDRR 19485	10 JUN 65	JRC
G	REVISED PER TDRR 20143	9 JUN 65	
H	REVISED PER TDRR 22957	11 OCT 65	
J	REVISED PER TDRR 23888	6 NOV 65	


2
2C
SEE NOTE 6
12
FT1
22 REF
SP1
3 REF
R2
CR1
K
CR17
K
CR6
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CR5
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CR2
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CR11
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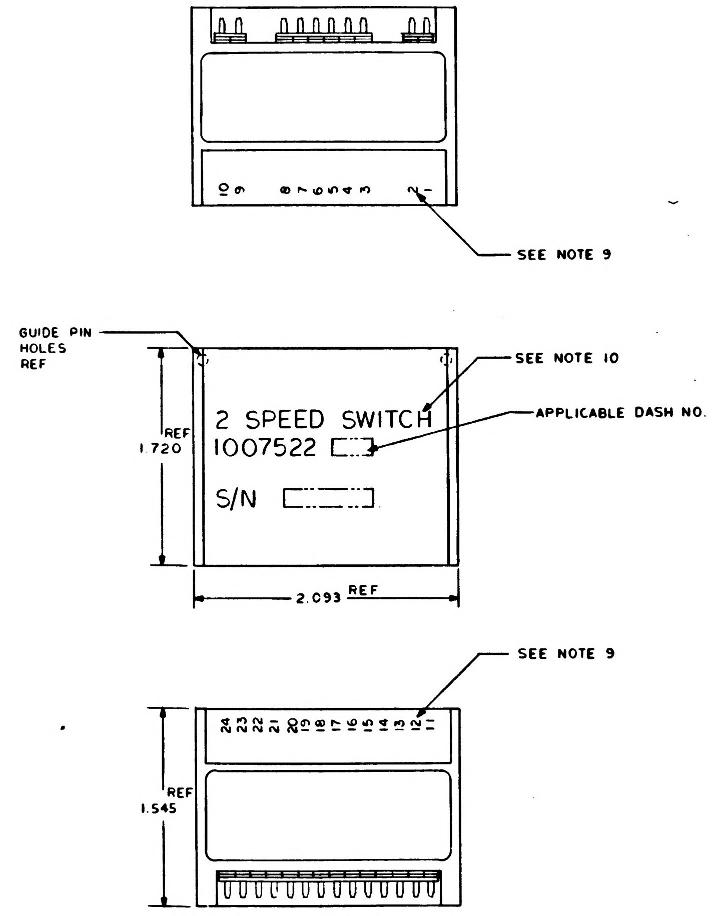
SP2
24
FT2
FT3
FT4
25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SEE NOTE 9
GUIDE PIN HOLES REF
SEE NOTE 10
APPLICABLE DASH NO.
2 SPEED SWITCH
1007522
S/N
REF 1.720
2.093 REF
SEE NOTE 9
24 23 22 21 20 19 18 17 16 15 14 13 12 11
REF 1.545

MARKING VIEW
SCALE 2/1

Ⓑ REPLACES REV A
WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
☒	1009505	SCHEMATIC	REF
AR	1010848-2	WIRE, ELECTRICAL - NICKEL	25
1	1008540-14	GASKET CONNECTOR MINIATURE	24
1	1008540-6	GASKET CONNECTOR MINIATURE	23
2	1008540-2	GASKET CONNECTOR MINIATURE	22
2	1010329-1	TRANSFORMER	21
1	1010264-121	CAPACITOR	20
1	1010264-120	CAPACITOR	19
1	1010264-119	CAPACITOR	18
1	1010264-22	CAPACITOR	17
16	1010392-1	DIODE	16
4	1010372-21	DIODE	15
6	1006750-63	RESISTOR	14
~~AR~~	~~1006776-22~~	~~INSULATION SLEEVING~~	13
AR	1006776-21	INSULATION SLEEVING	12
AR	1006776-20	INSULATION SLEEVING	11
~~AR~~	~~1006757-8~~	~~WIRE, ELECTRICAL~~	10
AR	1006757-1	WIRE, ELECTRICAL	9
2	1010485-98	SCREW, FILLISTER HEAD	8
6	1008161-3	SCREW, CAP SLOTTED HD SPECIAL	7
3	1015135-014	SPACER	6
24	1006782-5	CONTACT WRAPOST - MALE MIN	5
24	1006775	INSULATOR WRAPOST - MALE MIN	4
1	1008655	WIRING BOARD, BOTTOM	3
1	1009657	WIRING BOARD, TOP	2
1	1007594	FRAME	1

011 LIST OF MATERIALS

NEXT ASSY	USED ON
1007578	
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN Bonorrigo DATE 28 Jan 65
CHECKED R.P. Rangaswamy 8 Feb 65
APPROVAL 8 Feb 65
APPROVAL 4/8/65
NASA APPROVAL 2-9-65
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

2 SPEED SWITCH
ASSEMBLY

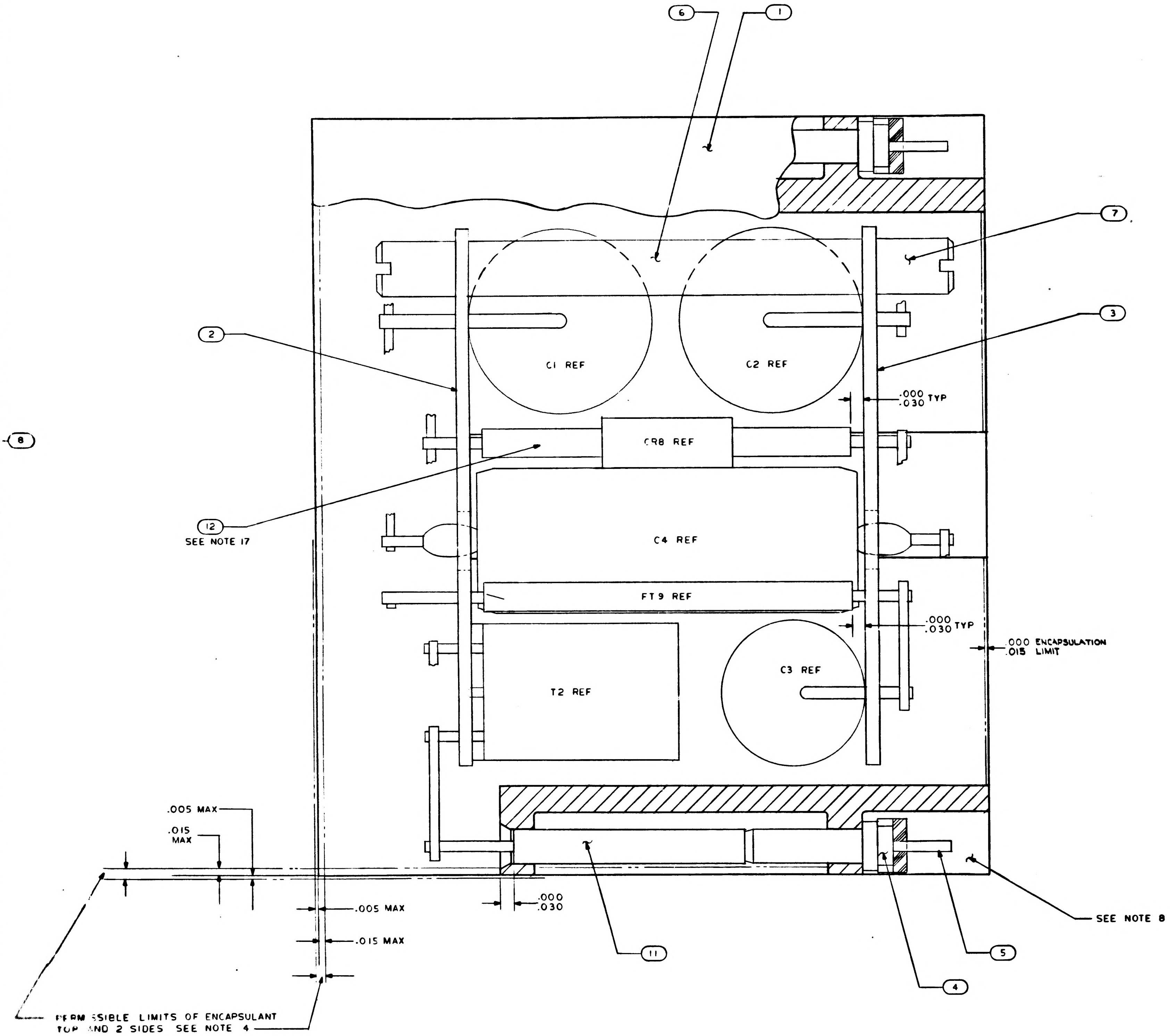
CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO 1007522
SCALE 10/1
WT
SHEET 1 OF 1

1007522 J

(3H)

1007522 J SH 1

37/1007522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1
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2
3
C1 REF
C2 REF
.000
.030 TYP
CR8 REF
12
SEE NOTE 17
C4 REF
FT9 REF
.000
.030 TYP
.000 ENCAPSULATION
.015 LIMIT
T2 REF
C3 REF
8
.005 MAX
.015
MAX
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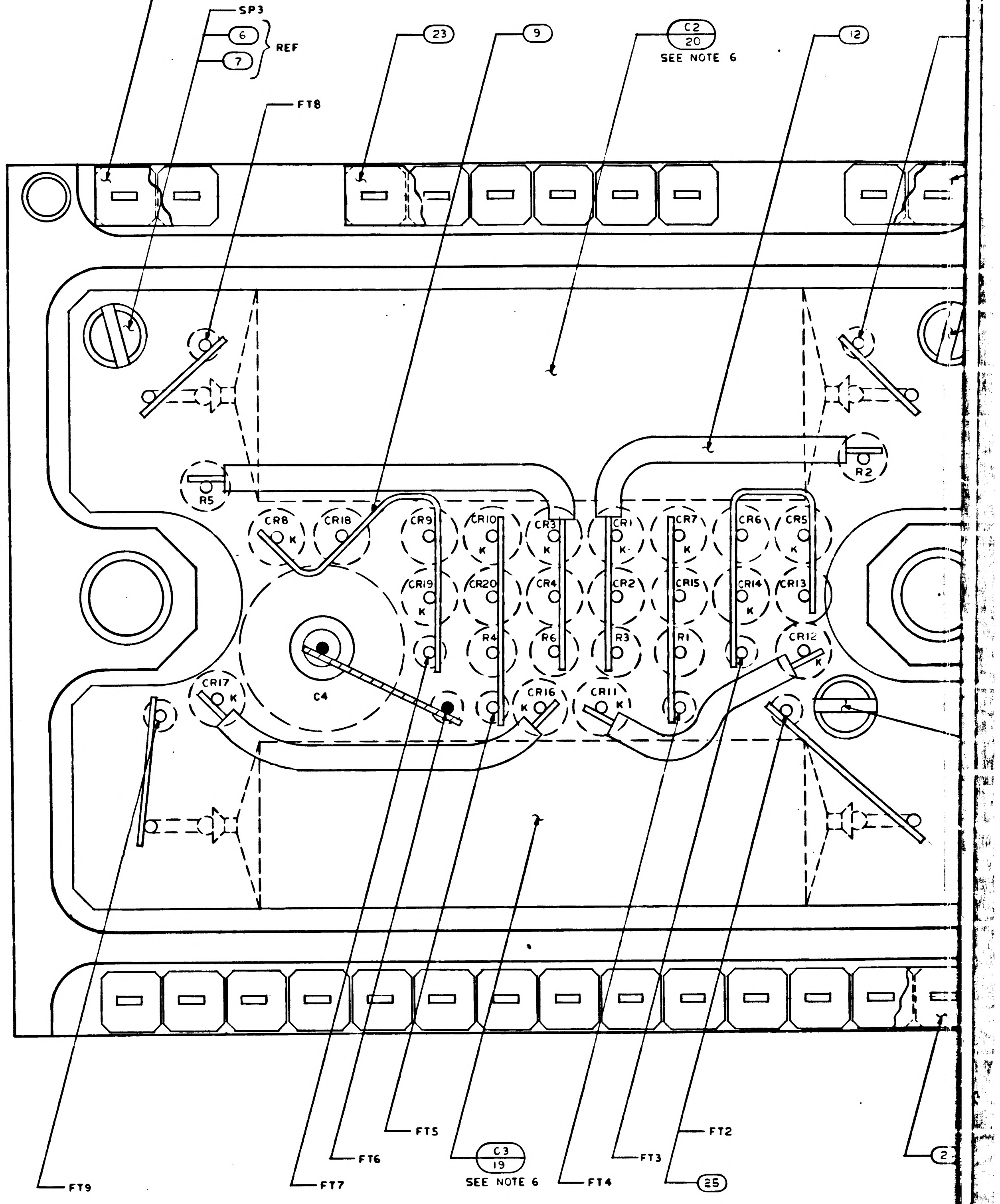
.030
11
4
5
SEE NOTE 8
PERMISSIBLE LIMITS OF ENCAPSULANT
TOP AND 2 SIDES SEE NOTE 4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SP3
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REF
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C2
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SEE NOTE 6
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FT8
R5
R2
CR8
K
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CR10
K
CR3
K
CR1
K
CR7
K
CR6
CR5
K
CR19
K
CR20
CR4
CR2
CR15
CR14
K
CR13
R4
R6
R3
R1
CR12
K
CR17
K
C4
CR16
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CR11
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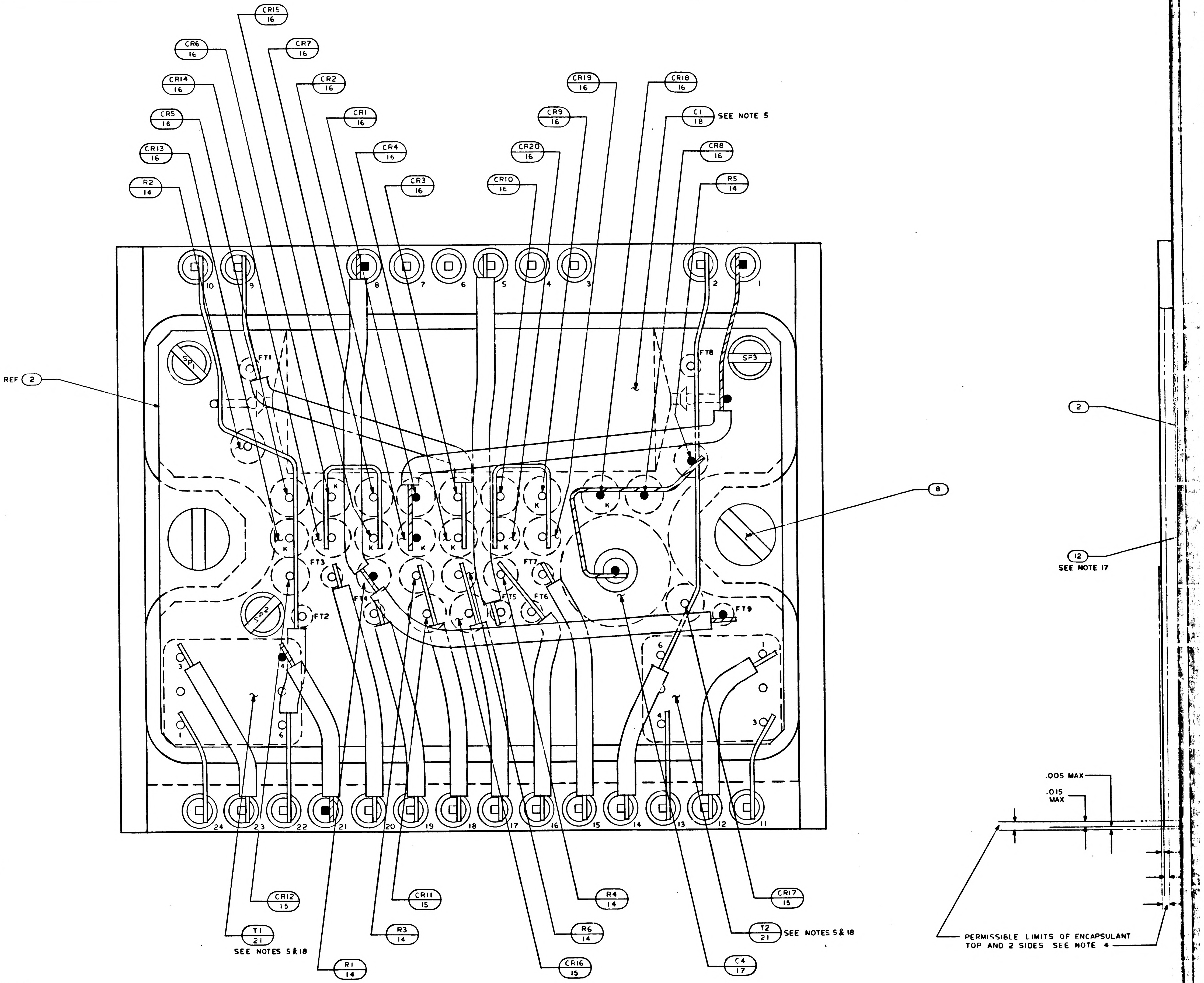
FT6
FT5
C3
19
SEE NOTE 6
FT4
FT3
FT2
25
2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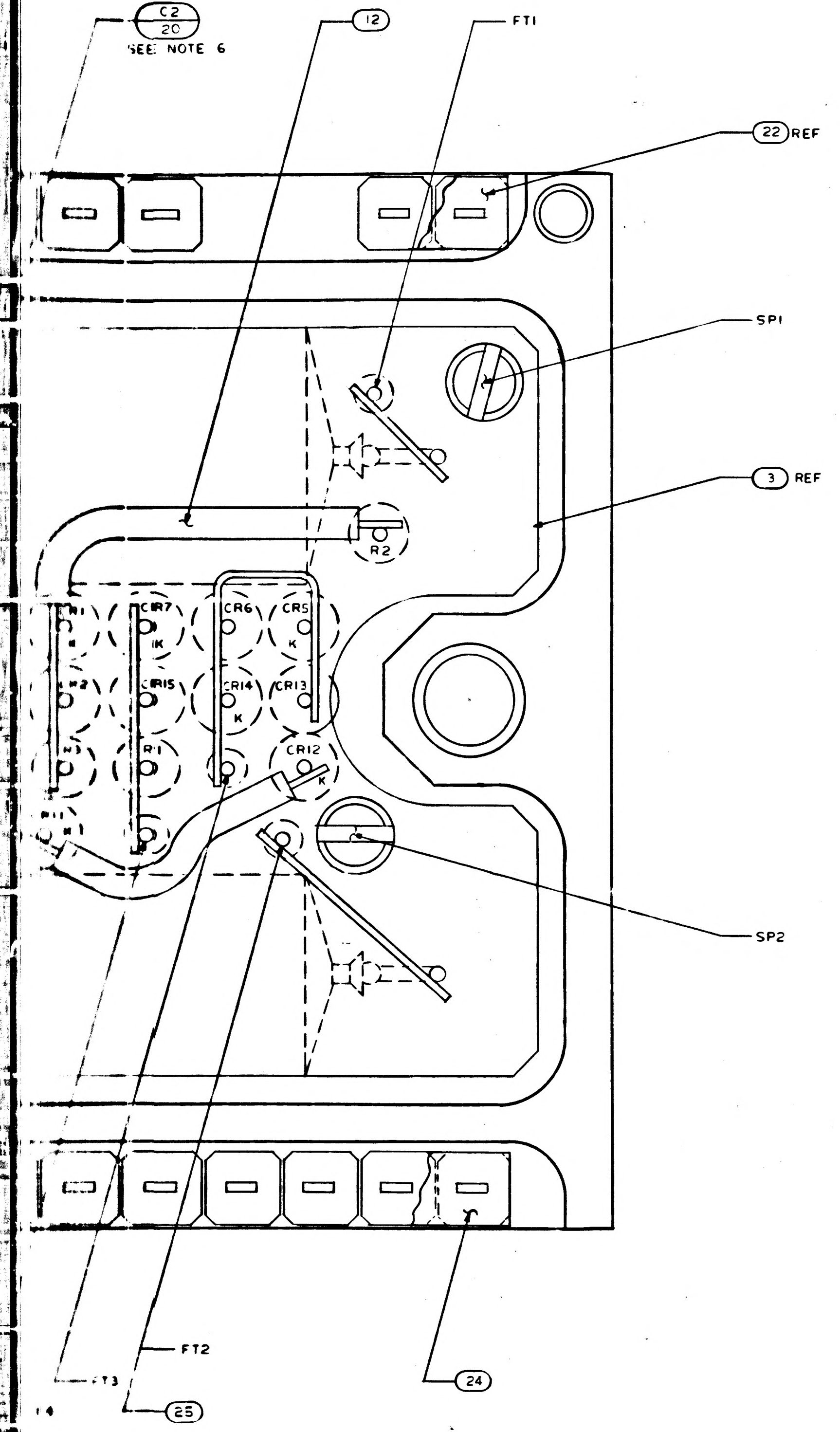
CR1 16
CR13 16
CR4 16
R2 14
CR3 16
CR19 16
CR18 16
CR9 16
C1 18 SEE NOTE 5
CR20 16
CR8 16
CR10 16
R5 14
REF 2
SP1
FT1
FT8
SP3
2
8
12
SEE NOTE 17
K
FT3
FT4
FT5
FT6
FT7
FT2
FT9
SP2
10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13 12 11
CR12 15
T1 21
SEE NOTES 5&18
CR11 15
R3 14
R1 14
R4 14
R6 14
CR16 15
C4 17
T2 21
SEE NOTES 5&18
CR17 15
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULANT TOP AND 2 SIDES SEE NOTE 4

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND 1002005
3. ASSEMBLE FIND NO. 4 TO FIND NO. 5 PER ND 1002136
4. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
5. BOND FIND NO. 18 AND FIND NO. 21 TO FIND NO. 2 PER ND 1002004 TYPE I
6. BOND FIND NO. 19 AND FIND NO. 20 TO FIND NO. 3 PER ND 1002004 TYPE I
7. ~~BOND FIND NO. 22, FIND NO. 23 AND FIND NO. 24 TO FIND NO. 4 PER ND 1002237~~
8. INDICATED AREA TO BE FREE OF ENCAPSULATION
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
11. AR DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
14. SP DENOTES SPACER
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. TYPICAL SLEEVING FOR FIND NO. 14, FIND NO. 15 AND FIND NO. 16
18. TRIM UNUSED LEADS OF FIND NO. 21 .010/.030 FROM CASE
19. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
20. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007522
21. ~~CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND 1002187 TYPE II.~~
22. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
23. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING D 0922 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

1007522	J	SH 1

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 16331	[illegible]	[illegible]
C	REVISED PER TDRR 16843	4 MAR 65	JJJ
D	REVISED PER TDRR 17193	16 MAR 65	A.N.
E	REVISED PER TDRR 19410	1 JUN 65	JHB
F	REVISED PER TDRR 19485	10 JUN 65	JRD
G	REVISED PER TDRR 20143	9 JUN 65	ah
H	REVISED PER TDRR 2295	11 OCT 65	8a
J	REVISED PER TDRR 23886	6 NOV 65	JJJ
K	REVISED PER TDRR 26397	25 FEB 66	AP


C2
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SEE NOTE 6
12
FT1
22 REF
SP1
3 REF
R2
CR7
CR6
CR5
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CR15
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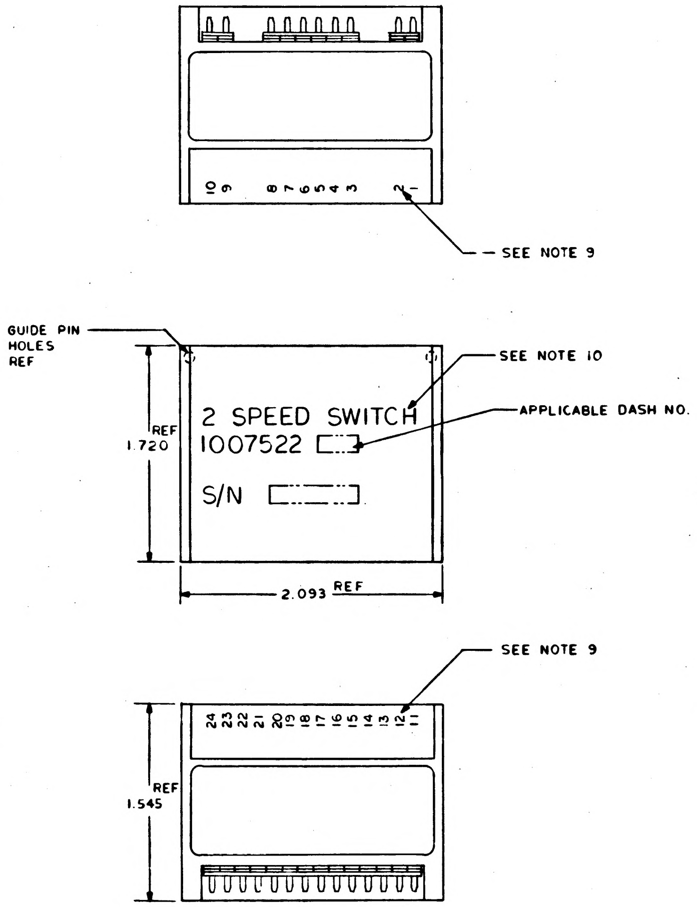
SP2
FT2
FT3
14
25
24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SEE NOTE 9
GUIDE PIN HOLES REF
SEE NOTE 10
APPLICABLE DASH NO.
2 SPEED SWITCH
1007522
S/N
REF 1.720
2.093 REF
SEE NOTE 9
24 23 22 21 20 19 18 17 16 15 14 13 12 11
REF 1.545

MARKING VIEW
SCALE 2/1

Ⓑ REPLACES REV A
WITH CHANGE

QTY		PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
021	011			
☒	☒	1009505	SCHEMATIC	REF
AR	—	SEE NOTE 24	MOISTUREPROOFING	26
AR	AR	1010848-2	WIRE, ELECTRICAL - NICKEL	25
1	1	1008540-14	GASKET CONNECTOR MINIATURE	24
1	1	1008540-6	GASKET CONNECTOR MINIATURE	23
2	2	1008540-2	GASKET CONNECTOR MINIATURE	22
2	2	1010329-1	TRANSFORMER	21
1	1	1010264-121	CAPACITOR	20
1	1	1010264-120	CAPACITOR	19
1	1	1010264-119	CAPACITOR	18
1	1	1010264-22	CAPACITOR	17
16	16	1010392-1	DIODE	16
4	4	1010372-21	DIODE	15
6	6	1006750-63	RESISTOR	14
	~~AR~~	~~1006776-22~~	~~INSULATION SLEEVING~~	13
AR	AR	1006776-21	INSULATION SLEEVING	12
AR	AR	1006776-20	INSULATION SLEEVING	11
	~~AR~~	~~1006757-8~~	~~WIRE, ELECTRICAL~~	10
AR	AR	1006757-1	WIRE, ELECTRICAL	9
2	2	1010485-98	SCREW, FILLISTER HEAD	8
6	6	1008161-3	SCREW, CAP SLOTTED HD SPECIAL	7
3	3	1015135-014	SPACER	6
24	24	1006782-5	CONTACT WRAPOST-MALE MIN	5
24	24	1006775	INSULATOR WRAPOST-MALE MIN	4
1	1	1008655	WIRING BOARD, BOTTOM	3
1	1	1008657	WIRING BOARD, TOP	2
1	1	1007594	FRAME	1

LIST OF MATERIALS

1007522 K

NEXT ASSY	USED ON
1007578	
1007579	

APPLICATION

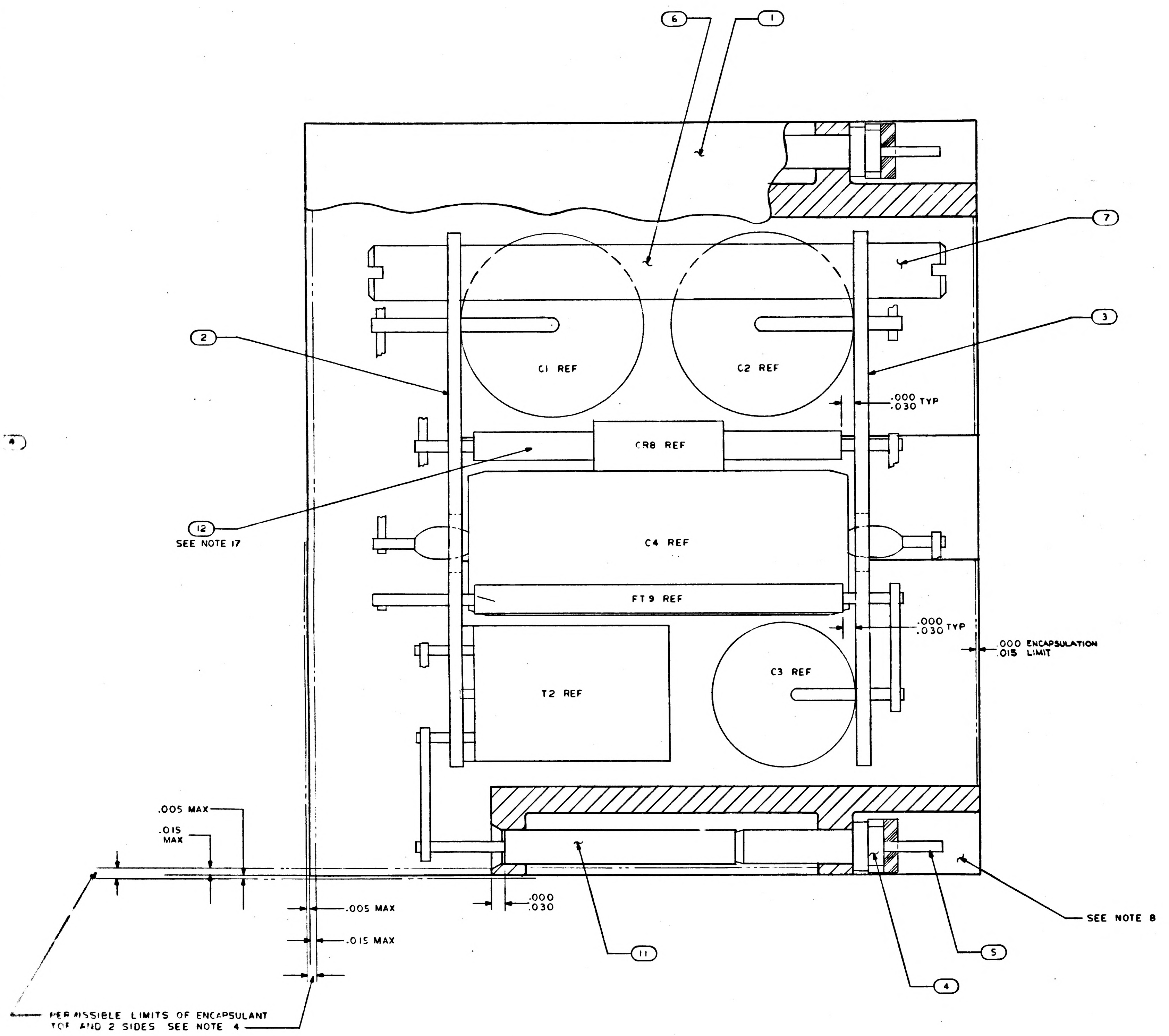
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

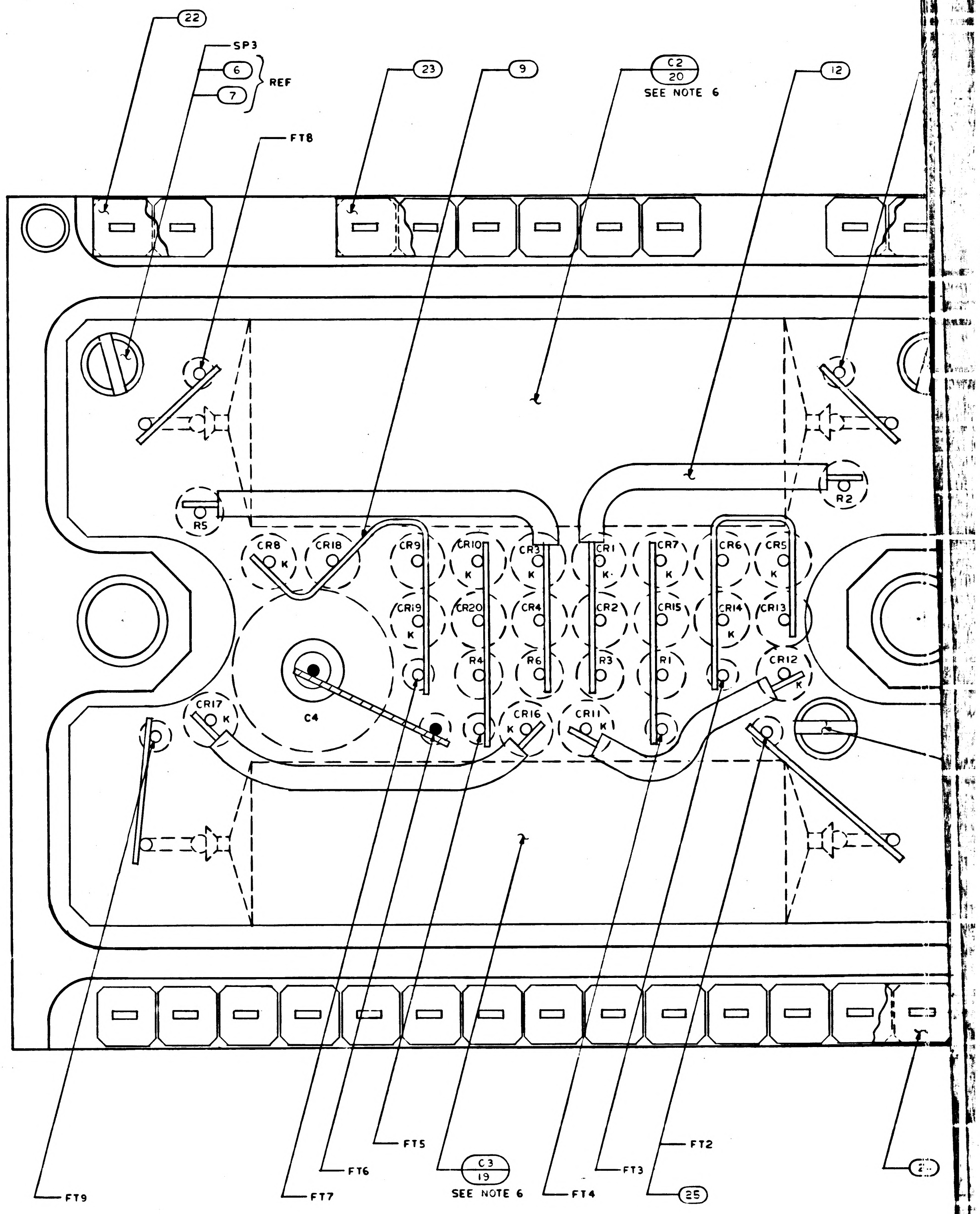
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN Bavarrigo DATE 28 Jan 65
CHECKED 8 Feb 65
APPROVAL 8 Feb 65
APPROVAL E. Test
NASA APPROVAL 2-9-65
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

2 SPEED SWITCH
ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO 1007522
SCALE 10/1
WT
SHEET 1 OF 1


6
1
7
2
3
C1 REF
C2 REF
.000
.030 TYP
CR8 REF
12
SEE NOTE 17
C4 REF
FT9 REF
.000
.030 TYP
.000 ENCAPSULATION
.015 LIMIT
T2 REF
C3 REF
.005 MAX
.015
MAX
.000
.030
.005 MAX
.015 MAX
11
4
5
SEE NOTE 8
PERMISSIBLE LIMITS OF ENCAPSULANT
TOP AND 2 SIDES SEE NOTE 4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SP3
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7
REF
FT8
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C2
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SEE NOTE 6
12
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R2
CR8
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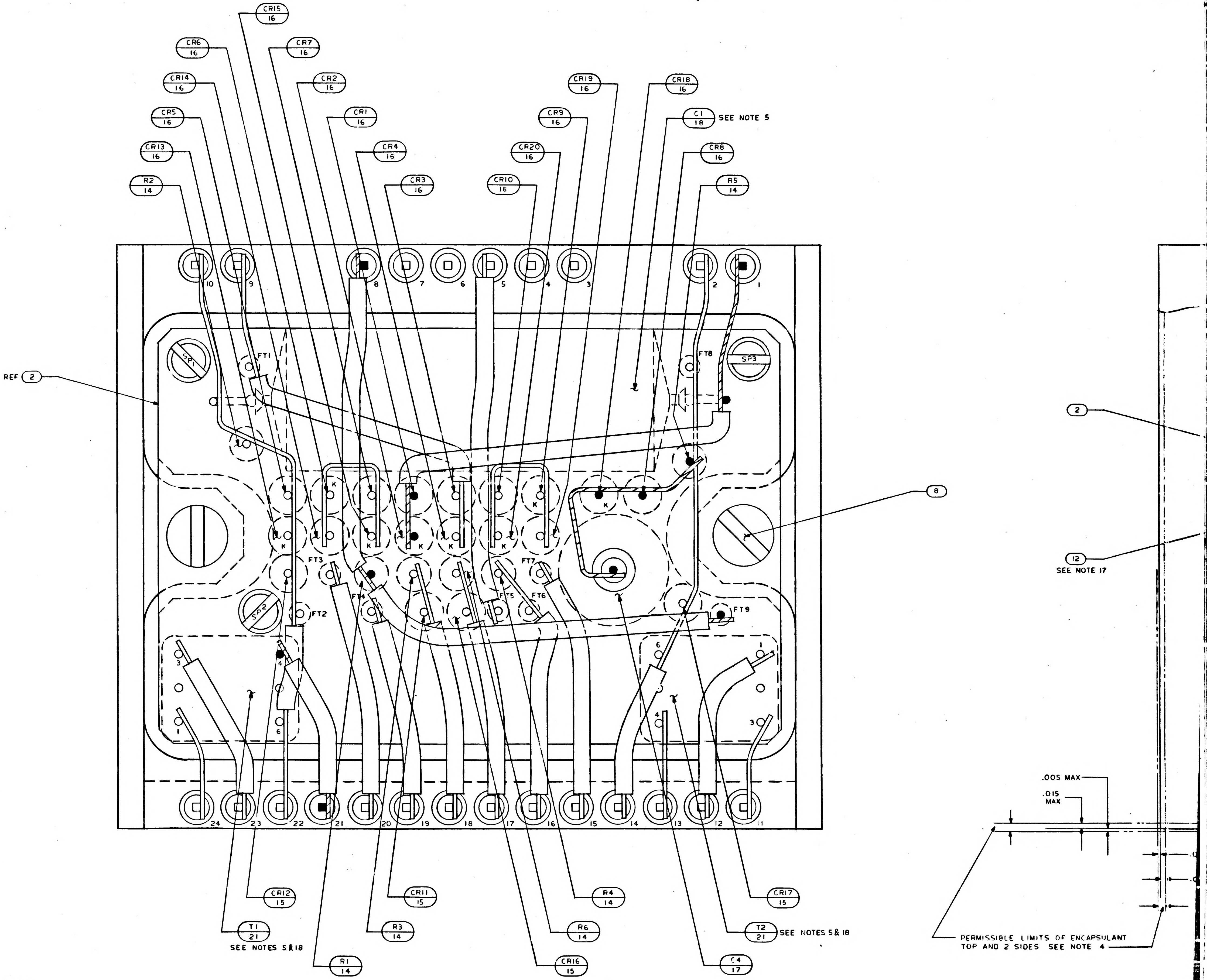
CR9
CR10
CR3
CR1
CR7
CR6
CR5
CR19
CR20
CR4
CR2
CR15
CR14
CR13
R4
R6
R3
R1
CR12
CR17
C4
CR16
CR11
K
FT9
FT7
FT6
FT5
C3
19
SEE NOTE 6
FT4
FT3
FT2
25

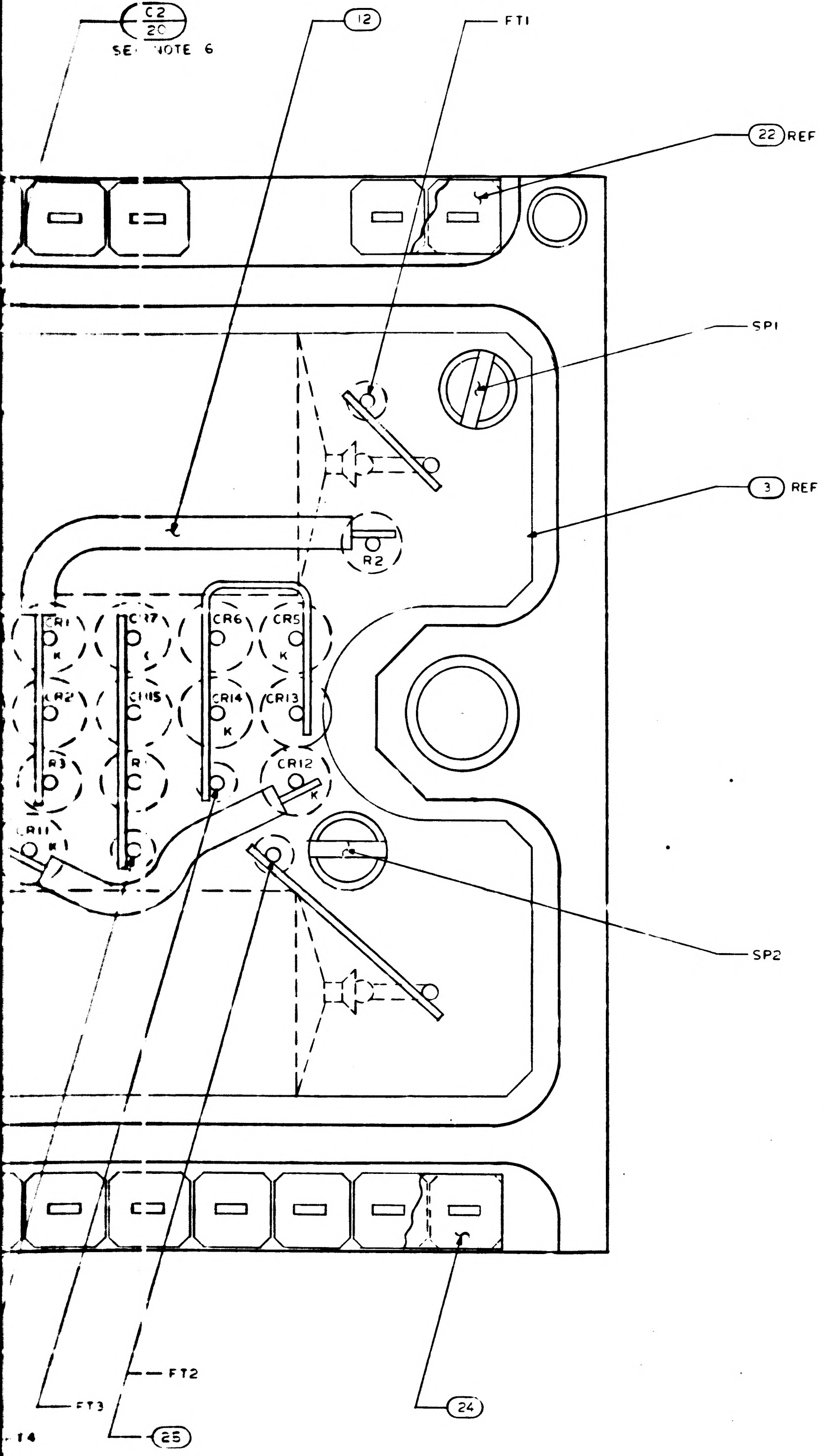

CR15 16
CR6 16
CR7 16
CR14 16
CR2 16
CR5 16
CR1 16
CR13 16
CR4 16
R2 14
CR3 16
CR19 16
CR18 16
CR9 16
C1 18 SEE NOTE 5
CR20 16
CR8 16
CR10 16
R5 14
REF 2
SP1
SP3
SP2
FT1
FT2
FT3
FT4
FT5
FT6
FT7
FT8
FT9
K
8
2
12 SEE NOTE 17
10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13 12 11
CR12 15
CR11 15
R4 14
CR17 15
T1 21 SEE NOTES 5 & 18
R3 14
R6 14
T2 21 SEE NOTES 5 & 18
R1 14
CR16 15
C4 17
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULANT TOP AND 2 SIDES SEE NOTE 4

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND 1002005
3. ASSEMBLE FIND NO. 4 TO FIND NO. 5 PER ND 1002136
4. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
5. BOND FIND NO. 18 AND FIND NO. 21 TO FIND NO. 2 PER ND 1002004 TYPE I
6. BOND FIND NO. 19 AND FIND NO. 20 TO FIND NO. 3 PER ND 1002004 TYPE I
7. ~~BOND FIND NO. 22, FIND NO. 23 AND FIND NO. 24 TO FIND NO. 4 PER ND 1002237~~
8. INDICATED AREA TO BE FREE OF ENCAPSULATION
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
11. AR DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
4 SP DENOTES SPACER
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. TYPICAL SLEEVING FOR FIND NO. 14, FIND NO. 15 AND FIND NO. 16
18. TRIM UNUSED LEADS OF FIND NO. 21 .010/.030 FROM CASE
19. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
20. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007522
21. ~~CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND 1002187 TYPE II.~~
22. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
23. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 0 0922 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
24. MOISTUREPROOF PER ND 1002292 AS REQUIRED BY FIND NO. ㉖ USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.

1007522	K	SH 1

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 16331	1/65	
C	REVISED PER TDRR 16843	4 MAR 65	
D	REVISED PER TDRR 17193	16 MAR 65	A.N.
E	REVISED PER TDRR 19410	1 JUN 65	JHD
F	REVISED PER TDRR 19485	JUN 65	JRC
G	REVISED PER TDRR 20143	9 JUN 65	Ah
H	REVISED PER TDRR 22957	11 OCT 65	
J	REVISED PER TDRR 23888	16 NOV 65	
K	REVISED PER TDRR 26397	25 FEB 66	
L	REVISED PER TDRR 29763	29 JUN 66	B. RWH


C2
20
SEE NOTE 6
12
FT1
22 REF
SP1
3 REF
R2
CR1
C17
CR6
CR5
R2
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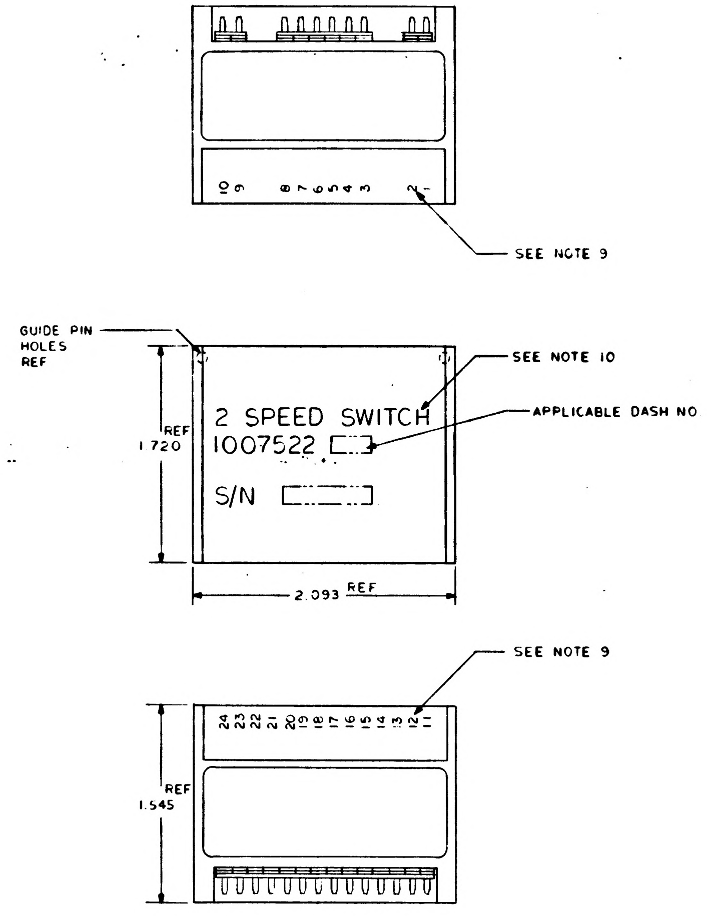
24
FT2
FT3
F4
25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SEE NOTE 9
GUIDE PIN HOLES REF
SEE NOTE 10
APPLICABLE DASH NO
2 SPEED SWITCH
1007522
S/N
REF 1.720
2.093 REF
SEE NOTE 9
24 23 22 21 20 19 18 17 16 15 14 13 12 11
REF 1.545

MARKING VIEW
SCALE 2/1

Ⓑ REPLACES REV A
WITH CHANGE

QTY 021	QTY 011	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		1009505	SCHEMATIC	REF
AR	—	SEE NOTE 24	MOISTUREPROOFING	26
AR	AR	1010848-2	WIRE, ELECTRICAL - NICKEL	25
1	1	1008540-14	GASKET CONNECTOR MINIATURE	24
1	1	1008540-6	GASKET CONNECTOR MINIATURE	23
2	2	1008540-2	GASKET CONNECTOR MINIATURE	22
2	2	1010329-1	TRANSFORMER	21
1	1	1010264-121	CAPACITOR	20
1	1	1010264-120	CAPACITOR	19
1	1	1010264-119	CAPACITOR	18
1	1	1010264-22	CAPACITOR	17
16	16	1010392-1	DIODE	16
4	4	1010372-21	DIODE	15
6	6	1006750-63	RESISTOR	14
	~~AR~~	~~1006776-22~~	~~INSULATION SLEEVING~~	13
AR	AR	1006776-21	INSULATION SLEEVING	12
AR	AR	1006776-20	INSULATION SLEEVING	11
	~~AR~~	~~1006757-8~~	~~WIRE, ELECTRICAL~~	10
AR	AR	1006757-1	WIRE, ELECTRICAL	9
2	2	1010485-98	SCREW, FILLISTER HEAD	8
6	6	1008161-3	SCREW, CAP SLOTTED HD SPECIAL	7
3	3	1015135-014	SPACER	6
24	24	1006782-5	CONTACT WRAPOST - MALE MIN	5
24	24	1006775	INSULATOR WRAPOST - MALE MIN	4
1	1	1008655	WIRING BOARD, BOTTOM	3
1	1	1008657	WIRING BOARD, TOP	2
1	1	1007594	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007578	
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ± .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL ——
HEAT TREATMENT ——
FINAL FINISH ——

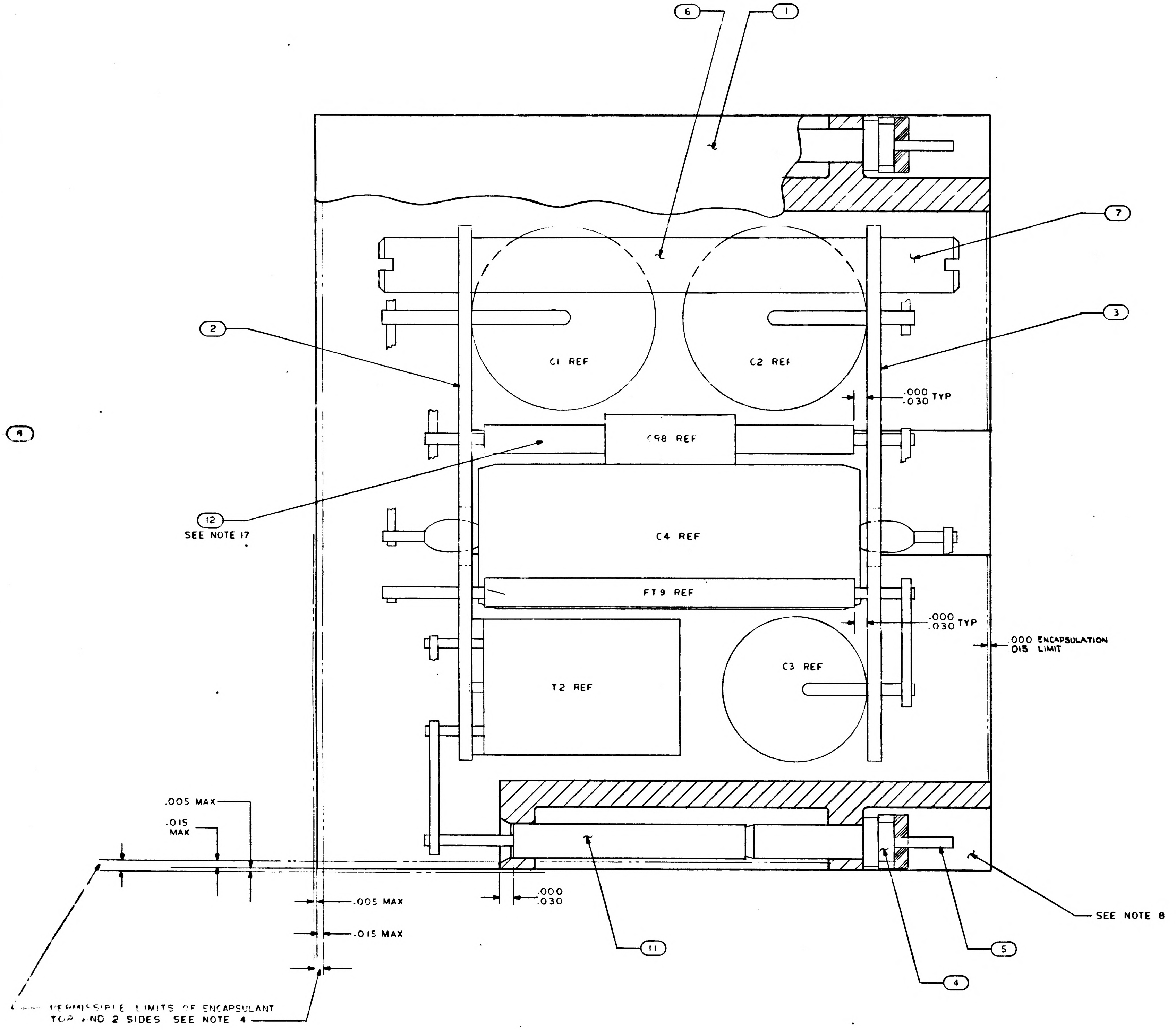
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT
DRAWN Bazarrigo DATE 28 Jan 65
CHECKED 6 Feb 65
APPROVAL 8 FEB 65
APPROVAL 2/10/65
NASA APPROVAL 2-9-65
MIT APPROVAL

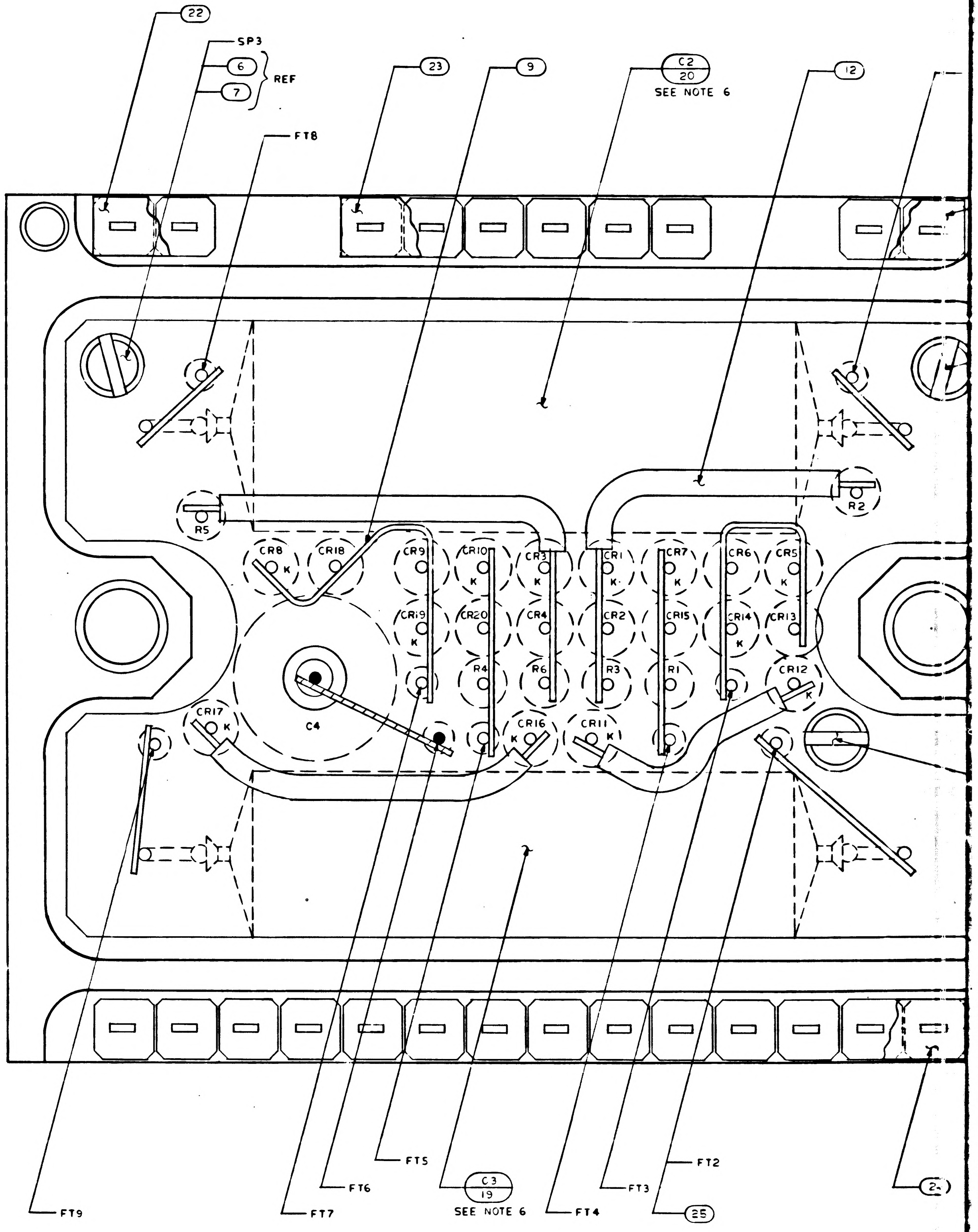
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

2 SPEED SWITCH
ASSEMBLY

CODE IDENT NO 80230
SIZE J
NASA DRAWING NO 1007522
SCALE 10/1
WT
SHEET 1 OF 1

1007522 L


6
1
7
2
3
C1 REF
C2 REF
.000
.030 TYP
CR8 REF
12
SEE NOTE 17
C4 REF
FT9 REF
.000
.030 TYP
.000 ENCAPSULATION
.015 LIMIT
T2 REF
C3 REF
.005 MAX
.015
MAX
.005 MAX
.015 MAX
.000
.030
11
4
5
SEE NOTE 8
PERMISSIBLE LIMITS OF ENCAPSULANT
TOP AND 2 SIDES SEE NOTE 4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SP3
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7
REF
FT8
23
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C2
20
SEE NOTE 6
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R2
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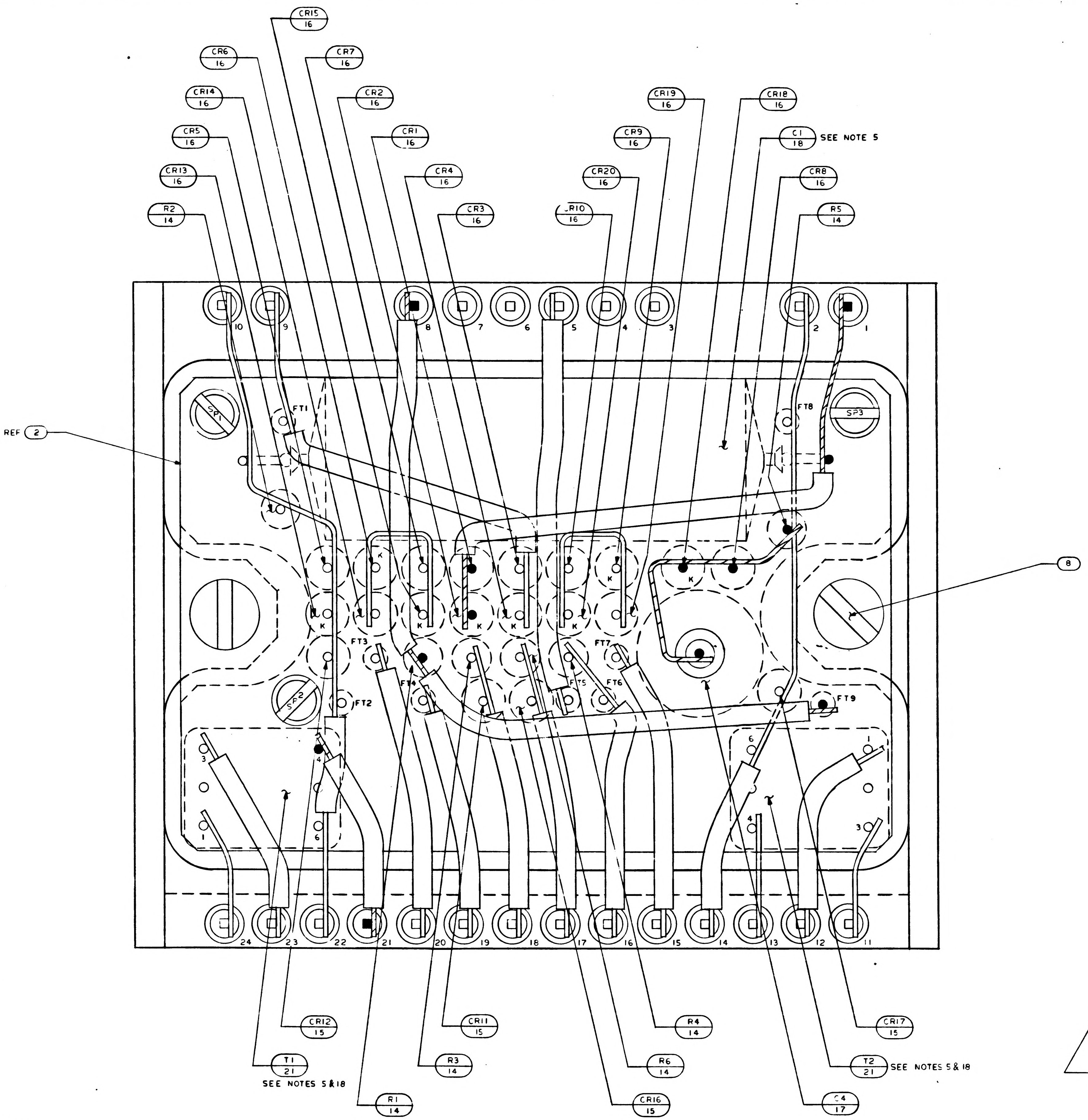
CR10
K
CR3
K
CR1
K
CR7
K
CR6
CR5
K
CR19
K
CR20
CR4
CR2
CR15
CR14
K
CR13
R4
R6
R3
R1
CR12
K
CR17
K
C4
CR16
K
CR11
K
FT9
FT7
FT6
FT5
C3
19
SEE NOTE 6
FT4
FT3
FT2
25
2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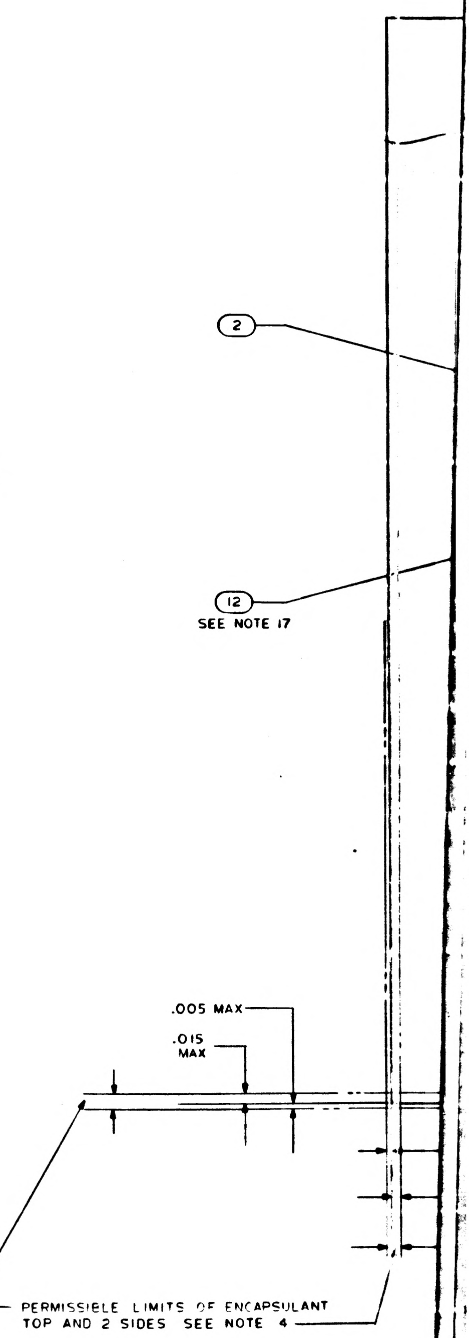
CR7 16
CR14 16
CR2 16
CR5 16
CR1 16
CR13 16
CR4 16
R2 14
CR3 16
CR19 16
CR18 16
CR9 16
C1 18 SEE NOTE 5
CR20 16
CR8 16
R10 16
R5 14
REF 2
FT1
SP1
FT8
SP3
8
K
FT3
FT4
FT5
FT6
FT7
FT2
SP2
FT9
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
CR12 15
CR11 15
R4 14
CR17 15
T1 21
SEE NOTES 5 & 18
R3 14
R6 14
T2 21 SEE NOTES 5& 18
R1 14
CR16 15
C4 17

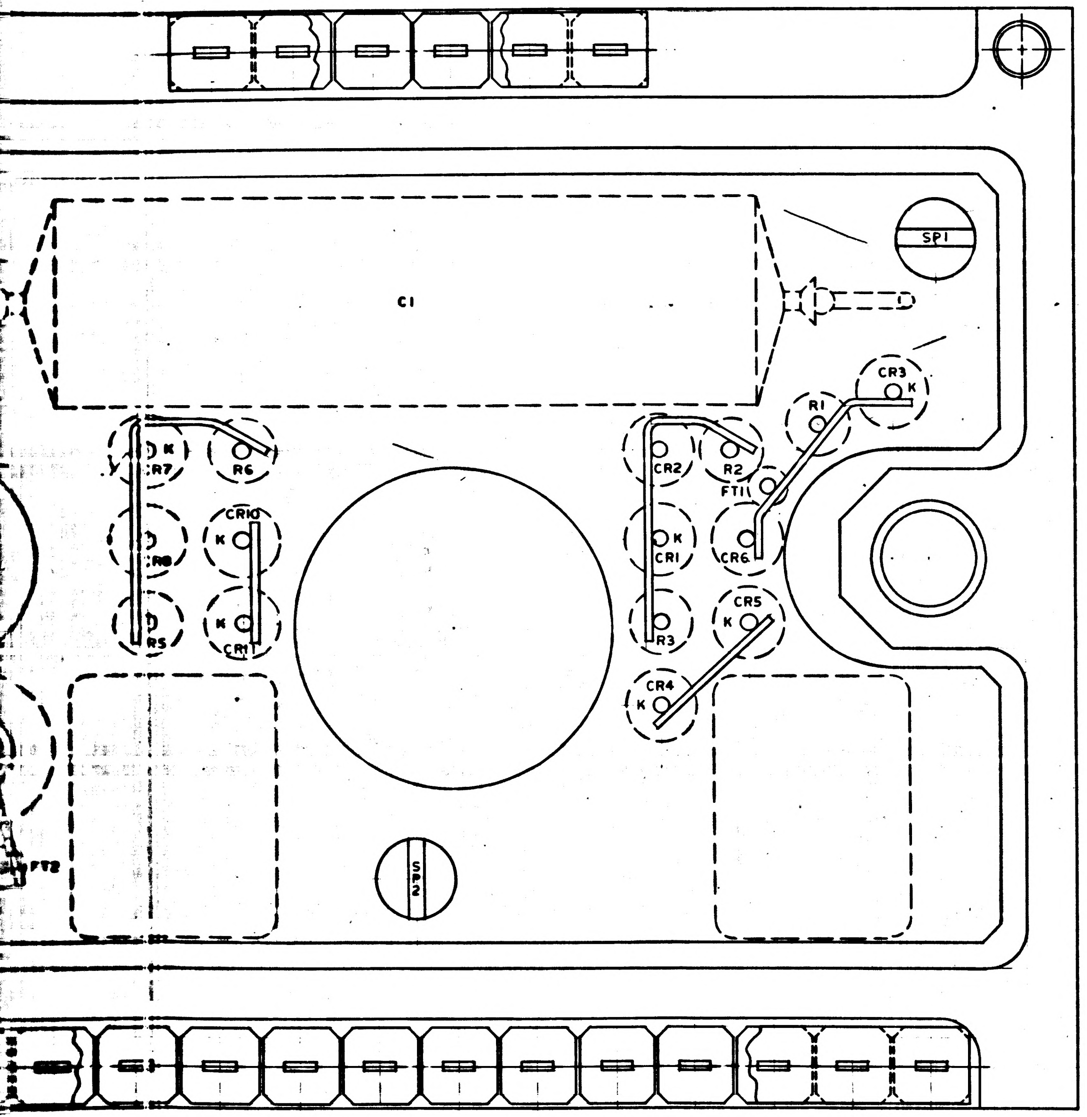

2
12
SEE NOTE 17
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULANT
TOP AND 2 SIDES SEE NOTE 4

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND 1002005
3. ASSEMBLE FIND NO. 4 TO FIND NO. 5 PER ND 1002136
4. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
5. BOND FIND NO. 18 AND FIND NO. 21 TO FIND NO. 2 PER ND 1002004 TYPE I
6. BOND FIND NO. 19 AND FIND NO. 20 TO FIND NO. 3 PER ND 1002004 TYPE I
7. ~~BOND FIND NO. 22, FIND NO. 23 AND FIND NO. 24 TO FIND NO. 4 PER ND 1002237~~
8. INDICATED AREA TO BE FREE OF ENCAPSULATION
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
11. AP DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
14. SP DENOTES SPACER
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. TYPICAL SLEEVING FOR FIND NO. 14, FIND NO. 15 AND FIND NO. 16
18. TRIM UNUSED LEADS OF FIND NO 21 .010/.030 FROM CASE
19. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
20. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007522
21. ~~CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ± .03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND 1002187 TYPE II.~~
22. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
23. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 0 0992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
24. MOISTUREPROOF PER ND 1002292 AS REQUIRED BY FIND NO. (26) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.

1007522 - 1

	REVISIONS		
SYM	DESCRIPTION	DATE	APPROVAL



SP1
C1
CR3
K
R1
CR2
R2
FT1
CR7
R6
CR10
K
R8
CR1
CR6
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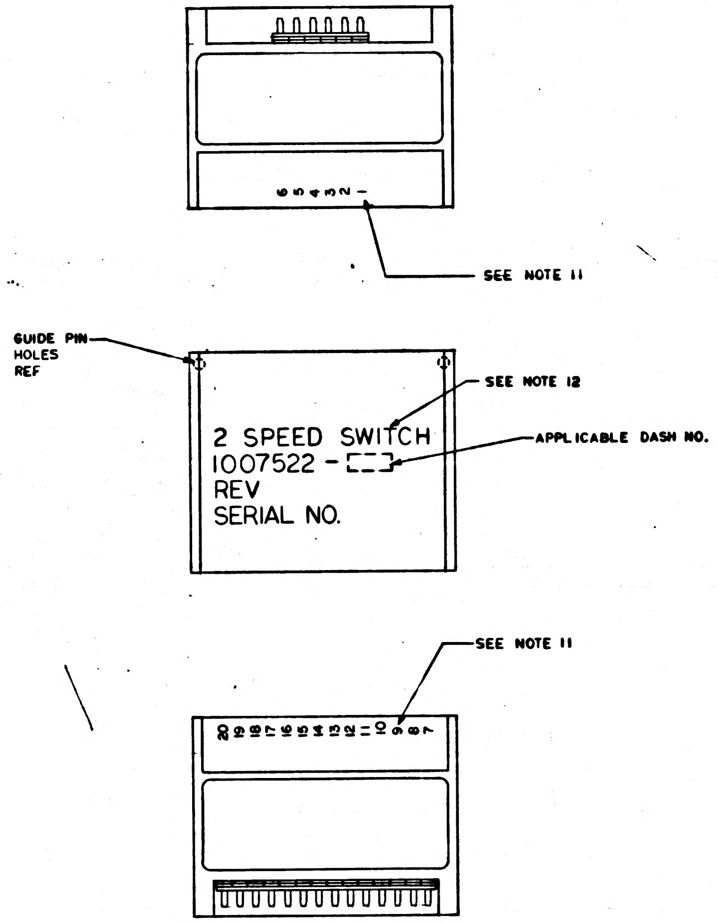
K
CR11
R3
CR5
K
CR4
K
SP2
FT2



SEE NOTE 11
GUIDE PIN HOLES REF
SEE NOTE 12
2 SPEED SWITCH
1007522 -
REV
SERIAL NO.
APPLICABLE DASH NO.
SEE NOTE 11

MARKING VIEW
SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009505	SCHEMATIC	REF
AR	1006776-21	INSULATION SLEEVING	21
1	1008540-6	GASKET, CONNECTOR MINIATURE	20
1	1008540-14	GASKET, CONNECTOR MINIATURE	19
2	1010329-1	TRANSFORMER	18
8	1010392-1	DIODE	17
4	1010372-21	DIODE	16
1	1010264-26	CAPACITOR	15
1	1010264-17	CAPACITOR	14
6	1006750-63	RESISTOR	13
AR	1006776-22	INSULATION SLEEVING	12
AR	1006776-20	INSULATION SLEEVING	11
AR	1006757-8	WIRE, ELECTRICAL .020 DIA	10
AR	1006757-1	WIRE, ELECTRICAL .010 X .020	9
2	1010485-98	SCREW, FILLISTER HEAD	8
6	1008161-3	SCREW, CAP SLOTTED HD SPECIAL	7
3	1015135-014	SPACER	6
20	1006782-5	CONTACT, WRAPOST-MALE, MIN	5
20	1006775	INSULATOR, WRAPOST-MALE, MIN	4
1	1008534	WIRING BOARD, BOTTOM	3
1	1008532	WIRING BOARD, TOP	2
1	1007594	FRAME	1

011 LIST OF MATERIALS

NEXT ASSY	USED ON
1007579	
1007578	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS — ± DECIMALS XXX ±.005 XX ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN
CHECKED
APPROVAL 7 OCT 64
APPROVAL 10-8-64
NASA APPROVAL 10-14-64
MIT APPROVAL

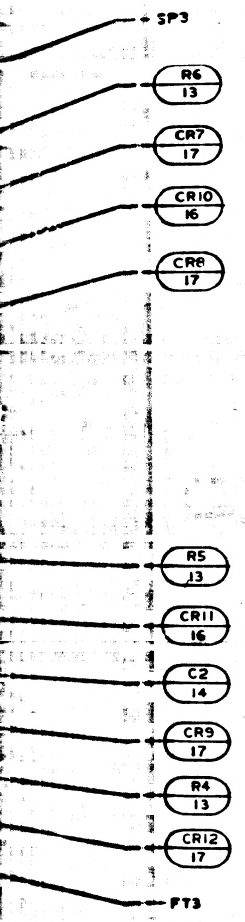
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

2 SPEED SWITCH ASSEMBLY

CODE IDENT NO. | SIZE J | NASA DRAWING NO. 1007522
SCALE 10/1 | WT — | SHEET 1 OF 1

1007522

3#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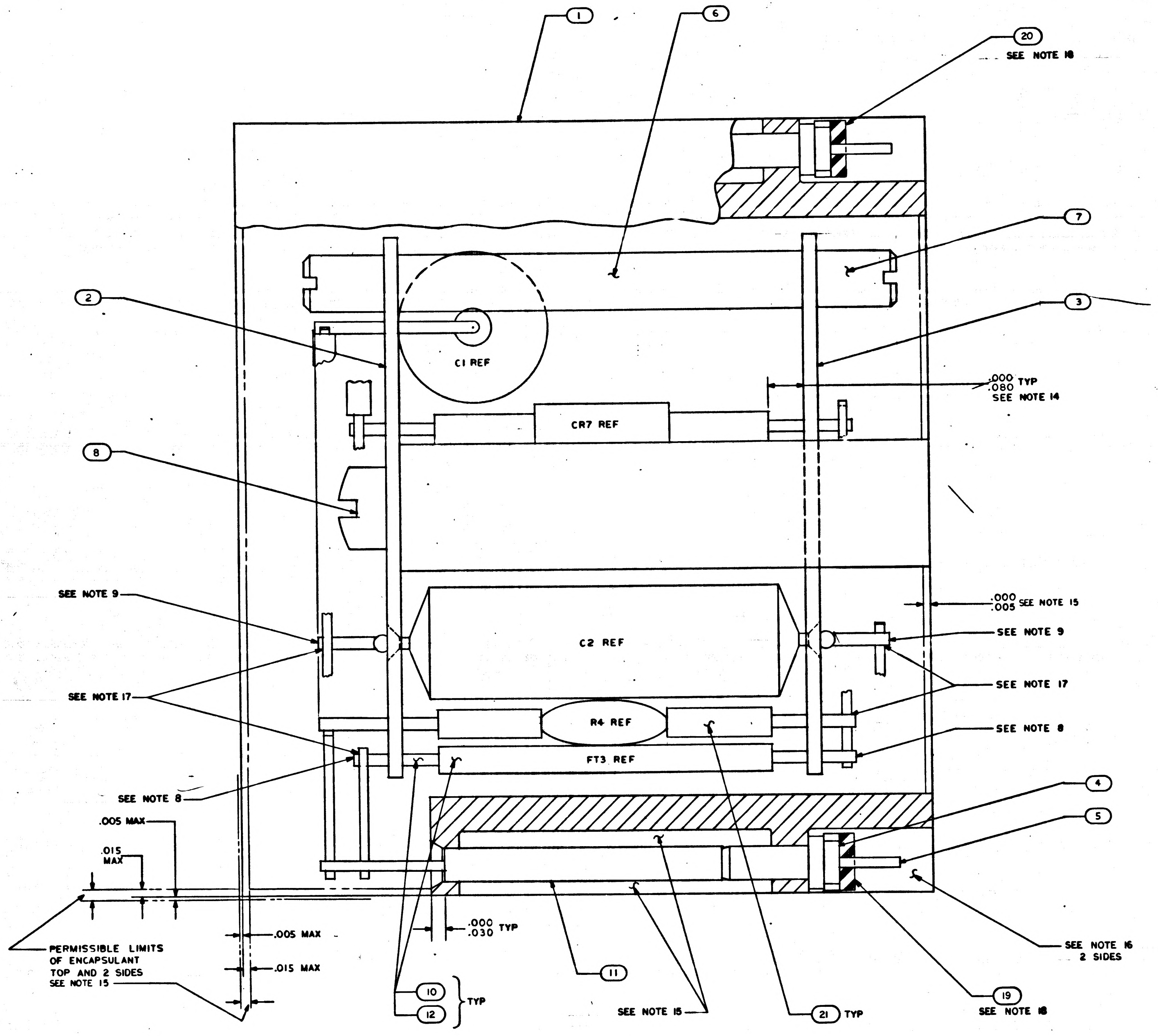
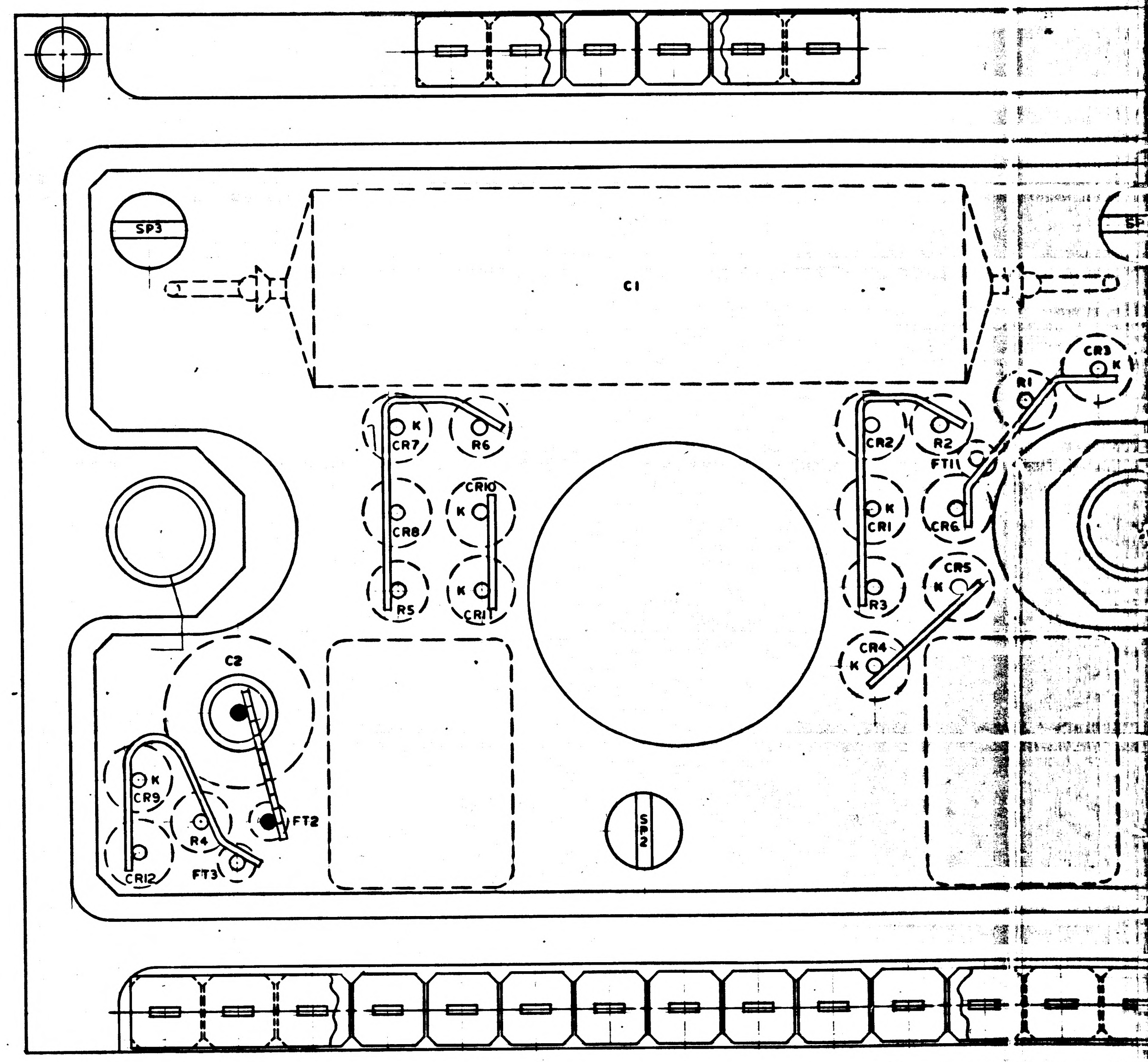
CR7 17
CR10 16
CR8 17
R5 13
CR11 16
C2 14
CR9 17
R4 13
CR12 17
FT3


1
6
20
SEE NOTE 18
7
2
3
C1 REF
.000 .080 TYP SEE NOTE 14
CR7 REF
8
SEE NOTE 9
.000 .005 SEE NOTE 15
C2 REF
SEE NOTE 9
SEE NOTE 17
SEE NOTE 17
R4 REF
SEE NOTE 8
FT3 REF
SEE NOTE 8
4
5
.005 MAX
.015 MAX
.000 .030 TYP
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULANT TOP AND 2 SIDES SEE NOTE 15
10
12
TYP
11
SEE NOTE 15
21 TYP
19
SEE NOTE 18
SEE NOTE 16 2 SIDES


SP3
C1
CR3
R1
K
K
CR7
R6
CR2
R2
FT1
CR10
K
CR8
K
CR1
CR6
CR5
K
R5
CR1
R3
CR4
K
C2
K
CR9
FT2
R4
CR12
FT3
SP2

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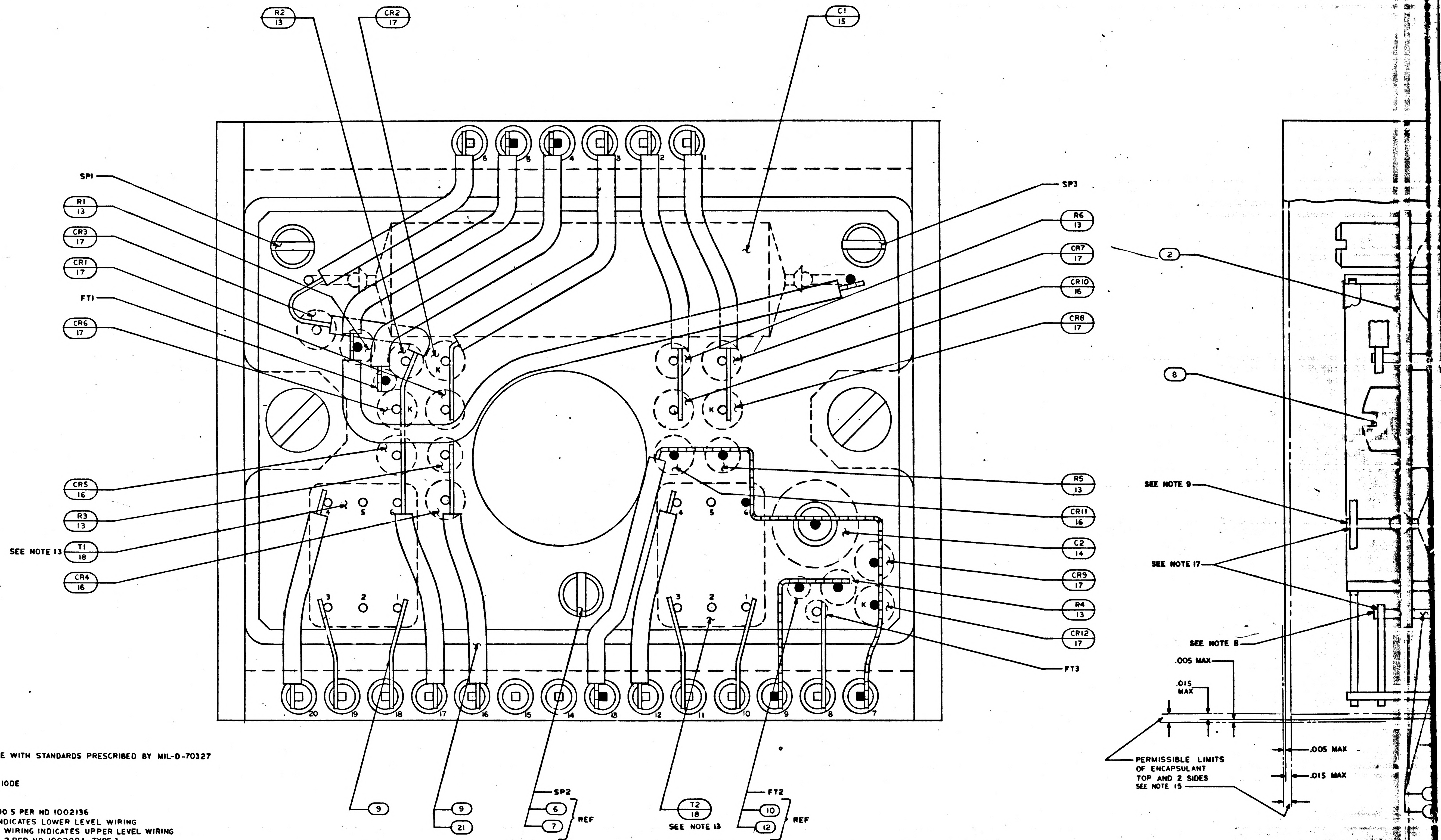

R2
13
CR2
17
C1
15
SP1
R1
13
CR3
17
CR1
17
FT1
CR6
17
SP3
R6
13
CR7
17
CR10
16
CR8
17
2
8
6
5
4
3
2
1
K
CR5
16
R3
13
SEE NOTE 13
T1
18
CR4
16
R5
13
CR11
16
C2
14
CR9
17
R4
13
CR12
17
FT3
SEE NOTE 9
SEE NOTE 17
SEE NOTE 8
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULANT TOP AND 2 SIDES SEE NOTE 15
.005 MAX
.015 MAX
20
19
18
17
16
15
14
13
12
11
10
9
8
7
9
9
21
SP2
6
7
REF
T2
18
SEE NOTE 13
FT2
10
12
REF

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. FT DENOTES FEED THRU
4. K DENOTES CATHODE SIDE OF DIODE
5. SP DENOTES SPACER
6. WELD PER ND 1002005
7. ASSEMBLE FIND NO 4 AND FIND NO 5 PER ND 1002136
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
10. BOND T1 T2 AND C1 TO FIND NO 2 PER ND 1002004 TYPE I
11. MARK .100/.060 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
12. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
13. CUT LEAD NUMBERS 2 AND 5 .03MAX ABOVE CASE
14. TYPICAL SLEEVING FOR ALL COMPONENTS
15. ENCAPSULATE MODULE PER ND 1002002 BLACK POLYURETHANE FOAM REMOVE ALL FLASHING
16. INDICATED AREAS TO BE FREE OF ENCAPSULATION
17. WORKMANSHIP REQUIREMENTS PER ND 1002069
18. BOND FIND NO. 19 AND FIND NO. 20 TO FIND NO. 4 PER ND 1002237

APOLLO G&N Specification
PS1007522
Original Issue Date: 11 MAY 1965
Release Authority: TDRR 18919
Class A Release

PROCUREMENT SPECIFICATION

FOR

TWO SPEED SWITCH MODULE ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA

This specification consists of page 1 to 7 inclusive.

APPROVALS	NASA/MSC	MIT/IL			ACSP
	5/11-65	May 10, 1965	11 May 65	May 10, 65	M. S. Johnson

LOC. OF MSTR. ACS

PROCUREMENT SPECIFICATION
FOR
TWO SPEED SWITCH MODULE ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Two Speed Switch Module Assembly, Drawing 1007522, hereafter called the assembly.

1.2 CLASSIFICATION. The requirements for the equipment, Part Number 1007522-011 covered by this specification shall be designated as Type I in this specification and identified as PS1007522-011.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
FTM1007522	Final Test Method for Two Speed Switch Module Assembly

DRAWINGS

APOLLO G&N

1007522	Two Speed Switch Module Assembly

3. REQUIREMENTS

3.1 GENERAL SPECIFICATION. Unless otherwise specified herein, all of the requirements of Specification ND1002210 shall apply as requirements of this specification.

3.2 DESCRIPTION. The two speed switch is a signal selector used to switch control of the null seeking servos from the coarse synchro to the fine synchro error detector.

3.3 FUNCTIONAL REQUIREMENTS

3.3.1 Electrical Inputs. The assembly shall perform as specified herein under the functional setup specified by Figure 1 with electrical excitation as follows:

Amplitude	Frequency	Distortion	Impedance
0 to 28V rms	800±2 cps	2% max	<1K ohm

3.3.2 Insulation Resistance. The resistance between the electrical interconnection of all assembly pins and the assembly mounting screws shall be equal to or greater than 100 megohms.

3.3.3 Coarse Channel Gain. With the functional setup as shown in Figure 1 and an input signal applied, the output of the coarse channels shall be as follows:

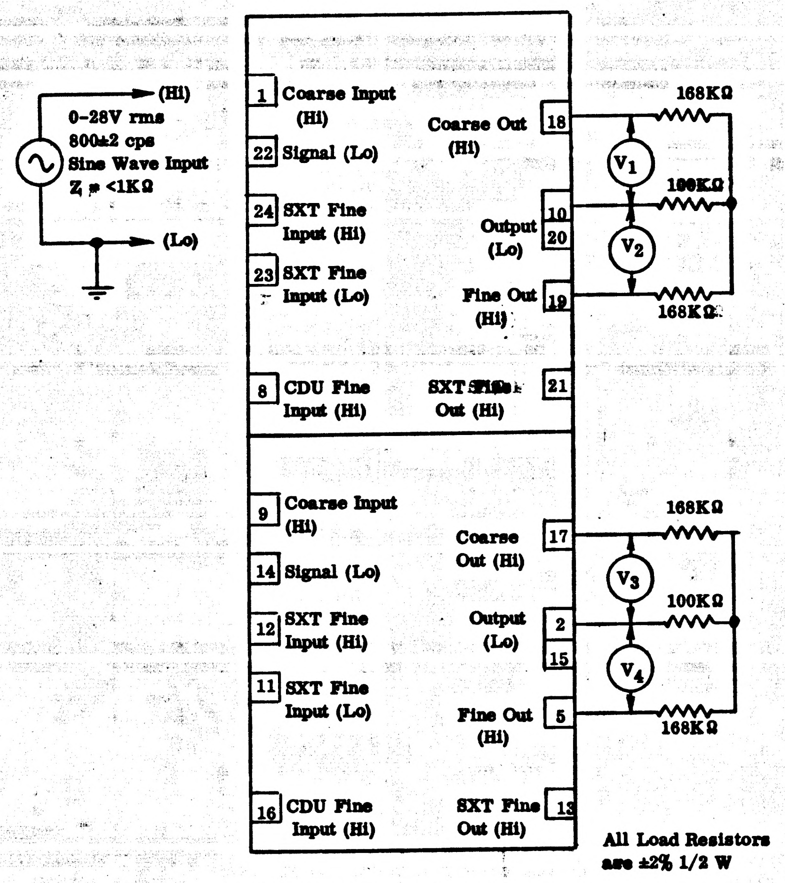
a. With an input signal as specified in Table I applied between pins 1 (Hi) and 22 (Lo), the output voltage (V_1) shall be as specified in Table I.

b. With an input signal as specified in Table I applied between pins 9 (Hi) and 14 (Lo), the output voltage (V_3) shall be as specified in Table I.

TABLE I

COARSE CHANNEL GAIN

INPUT SIGNAL (Vpp ±5%) 800±2 cps	OUTPUT VOLTAGE (Vpp) 800±2 cps
0.1	0.001 max
0.4	0.005 max
1.56	0.55±0.16
30	27±3
70	27±3


(Hi)
0-28V rms
800±2 cps
Sine Wave Input
Z ≤ <1KΩ
(Lo)
1 Coarse Input (Hi)
22 Signal (Lo)
24 SXT Fine Input (Hi)
23 SXT Fine Input (Lo)
8 CDU Fine Input (Hi)
Coarse Out (Hi) 18
Output (Lo) 10 20
Fine Out (Hi) 19
SXT Fine Out (Hi) 21
168KΩ
100KΩ
168KΩ
V1
V2
9 Coarse Input (Hi)
14 Signal (Lo)
12 SXT Fine Input (Hi)
11 SXT Fine Input (Lo)
16 CDU Fine Input (Hi)
Coarse Out (Hi) 17
Output (Lo) 2 15
Fine Out (Hi) 5
SXT Fine Out (Hi) 13
168KΩ
100KΩ
168KΩ
V3
V4
All Load Resistors are ±2% 1/2 W

TWO SPEED SWITCH MODULE ASSEMBLY

FUNCTIONAL SETUP

FIGURE 1

3.3.4 Fine Channel Gain: With the functional set up as shown in Figure 1, the outputs of the fine channels shall be as specified in Table II for the conditions of Table II.

TABLE II*

FINE CHANNEL GAIN

FINE INPUT SIGNAL Vp-p ±5%, 800∿ ±2∿			GAIN CHANGE CONNECTION Pin Short		FINE OUTPUT SIGNAL 800∿ ±2∿, Vp-p		
Input	From (Hi)	To (Lo)	From	To	Output	From (Hi)	To (Lo)
0.3	8	22			0.27±0.03	19	10
0.3	16	14			0.27±0.03	5	2
0.6	8	22			0.54±0.06	19	10
0.6	16	14			0.54±0.06	5	2
1.0	8	22			0.89±0.09	19	10
1.0	16	14			0.89±0.09	5	2
1.5	8	22			1.350±0.135	19	10
1.5	16	14			1.350±0.135	5	2
2.5	8	22			2.250±0.225	19	10
2.5	16	14			2.250±0.225	5	2
13.0	8	22			3.6±1.2	19	10
13.0	8	22	20	10	2.4±0.8	19	10
13.0	8	22	20	19	1.2±0.4	19	10
13.0	16	14			3.6±1.2	5	2
13.0	16	14	15	2	2.4±0.8	5	2
13.0	16	14	15	5	1.2±0.4	5	2

*During the fine channel gain checks Pin 1 is to be connected to Pin 22 and Pin 9 is to be connected to Pin 14.

3.3.5 SXT Fine Input Transformer Gain and Polarity. With the functional setup as shown in Figure 1, and a specified input signal applied, the no-load output voltage and phase shift shall be as follows:

a. With a 10V rms 800 cps signal applied between pins 24 (Hi) and 23 (Lo), the output between pins 21 (Hi) and 22 (Lo) shall be 10.0±0.5V rms, The phase shift of the output with respect to the input shall be 0° ±5°.

b. With a 10V rms 800 cps signal applied between pins 12 (Hi) and 11 (Lo), the output between 13 (Hi) and 14 (Lo) shall be 10.0±0.5V rms. The phase shift of the output with respect to the input shall be 0° ±5°.

3.3.6 Tuning Capacitor Phase Shift

a. With a 200 mv rms, 800 cps signal applied between pin 1 (hi) through a 549 ohm ±1 percent resistor and pin 22 (lo), the phase shift of the voltage at pin 1 with respect to the 200 mv rms signal shall be -45° ±10°.

b. With a 200 mv rms, 800 cps signal applied between pin 9 (hi) through a 634 ohm ±1 percent resistor and pin 14 (lo), the phase shift of the voltage at pin 9 with respect to the 200 mv rms signal shall be -45° ±10°

c. With a 200 mv rms, 800 cps signal applied between pin 8 (hi) through a 1.43K ohm ±1 percent resistor and pin 22 (lo), the phase shift of the voltage at pin 8 with respect to the 200 mv rms signal shall be -45° ±10°.

d. With a 200 mv rms, 800 cps signal applied between pin 16 (hi) through a 3.57K ohm ±1 percent resistor and pin 14 (lo), the phase shift of the voltage at pin 16 with respect to the 200 mv rms signal shall be -45° ±10°.

3.3.7 Input Isolation. The resistance between pins 23 and 24 and the electrical interconnection of all other assembly pins shall be ≥ 100 megohms. The resistance between pins 11 and 12 and the electrical interconnection of all other assembly pins shall be ≥ 100 megohms.

3.4 PERFORMANCE AND PRODUCT CHARACTERISTICS

3.4.1 Service Life

3.4.1.1 Operating Life. The assembly shall meet performance specifications for at least 2000 hours of operation, excluding the supplier's test time of the completed unit.

3.4.1.2 Shelf Life. The assembly shall have a shelf life of at least 5 years, without operation, at ambient room temperature after final acceptance at the supplier's facility.

3.4.2 Reliability. Design objectives require maximum reliability of the assembly during its period of useful life. Every effort shall be made to design and produce units capable of meeting a maximum failure rate of 1.53 failures per million hours.

APOLLO G&N Specification
FTM1007522
Original Issue Date: 11 MAY 1965
Release Authority: TDRR 18919
Class A Release

FINAL TEST METHOD

FOR

TWO SPEED SWITCH MODULE ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA

This specification consists of page 1 to 6 inclusive.

APPROVALS	W J Rhine 5-11-65 NASA/MSC	S. R. [illegible] May 10, 1965	W [illegible] May 65 MIT/IL	[illegible] May 1965	R. [illegible] T. L. Johnson ACSP

LOC. OF MSTR. ACS

FINAL TEST METHOD

FOR

TWO SPEED SWITCH

MODULE ASSEMBLY

1. GENERAL REQUIREMENTS. Unless otherwise specified, the supplier is responsible for the performance of all inspections to the satisfaction of the National Aeronautics and Space Administration (NASA) representative. Except as otherwise specified, the supplier may utilize his facilities or any commercial laboratory acceptable to NASA. Inspection records of the examinations and tests shall be kept complete and available to NASA as specified in the contract or order.

1.1 SCOPE. This specification lists the inspections for the Two Speed Switch Module Assembly hereafter called the assembly, which must be conducted prior to acceptance. The procedures herein shall be followed in detail in order to ascertain whether the item merits acceptance or warrants rejection.

1.2 CLASSIFICATION. The test requirements for the equipment, Part Number 1007522-011 covered by this specification shall be designated as Type I in this specification and identified as FTM1007522-011.

1.3 APPLICABLE DOCUMENTS. This specification shall be used in conjunction with Drawing 1007522. When the requirements of Drawing 1007522 and this specification are in conflict, the contractor shall notify MIT/IL APOLLO Management and the following order of precedence shall apply:

a. The contract
b. This specification
c. Documents listed in this section

1.3.1 Drawings. Drawings for the assembly are listed on Drawing 1007522.

1.3.2 Supplementary Documents. The following documents supplement the instructions herein.

DRAWINGS

APOLLO G&N

1007522	Two Speed Switch Module Assembly

1.4 SPECIAL NOTES

1.4.1 Test Conditions. The assembly shall be tested under the following ambient conditions.

a.	Temperature	25° ±10°C
b.	Relative Humidity	90% max
c.	Barometric Pressure	28 to 32 inches of Hg

1.4.2 Test Power. An input signal with the following electrical characteristics is required to test the assembly:

a. Amplitude: 0 to 28V rms, adjustable
b. Frequency: 800±2 cps sine wave
c. Distortion: 2% max
d. Impedance: <1K Ω

1.4.3 Recommended Test Setup. The test setup as shown in Figure 1 is recommended for testing the assembly.

1.4.4 Test Limits. Where space is provided in the test procedure to indicate the value or specific reading obtained, the specific reading shall be recorded if a limit or limits is given for a test. Further, the initials of the individual performing the inspection shall be inserted above the value observed and recorded. If limits are not stated, it is required that the individual performing the test initial in the space provided indicating that the requirements were met satisfactorily.

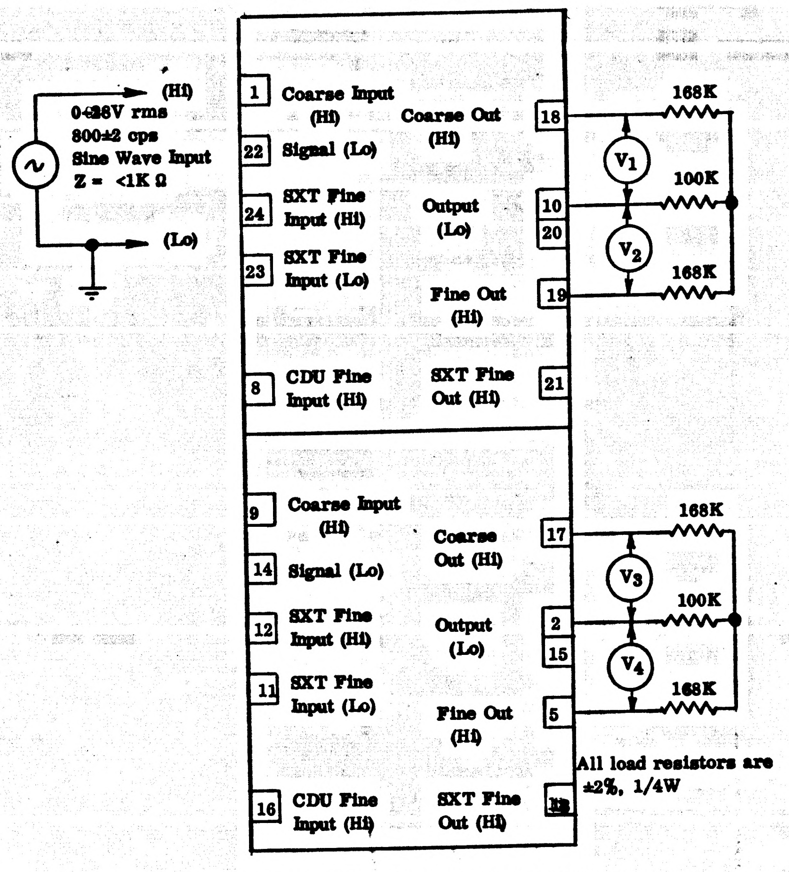
1.4.5 Test and Inspection Sequence. Unless otherwise specified, the sequence of testing and inspection procedures is suggested and may be performed in any order which will permit the most economical use of manpower and equipment, except that the workmanship-vibration be performed first.

1.4.5.1 Flowgram. The suggested sequence of operations is as shown by the Flowgram of Figure 2.

2. TWO SPEED SWITCH MODULE ASSEMBLY, INSPECTION

2.1 EXAMINATION AND TESTS

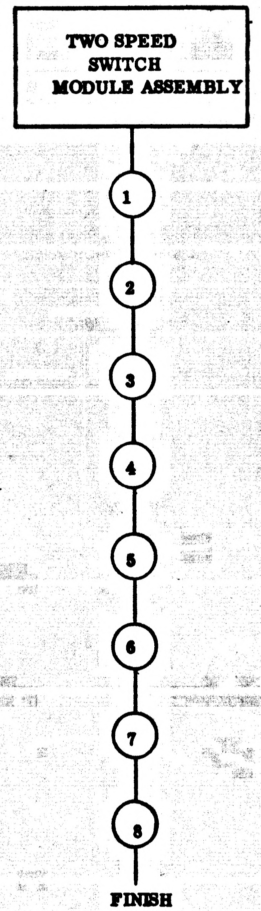
2.1.1 Nonconforming Units. The failure of the end product to pass any examination or test of this section will automatically classify the unit as nonconforming. When nonconforming units are corrected by the supplier, the unit shall be reinspected. The reinspection of a nonconforming unit may be limited to the test or examination which defined the nonconformance; or, when so directed by the cognizant inspector, a complete reexamination or retest of the unit may be required. Nonconforming units which have not been corrected will be considered for acceptance only upon formal application by the supplier to the cognizant NASA representative.


(Hi)
0-28V rms
800±2 cps
Sine Wave Input
Z = <1K Ω
(Lo)
1
Coarse Input (Hi)
22
Signal (Lo)
24
SXT Fine Input (Hi)
23
SXT Fine Input (Lo)
8
CDU Fine Input (Hi)
Coarse Out (Hi)
18
Output (Lo)
10
20
Fine Out (Hi)
19
SXT Fine Out (Hi)
21
168K
V1
100K
V2
168K
9
Coarse Input (Hi)
14
Signal (Lo)
12
SXT Fine Input (Hi)
11
SXT Fine Input (Lo)
16
CDU Fine Input (Hi)
Coarse Out (Hi)
17
Output (Lo)
2
15
Fine Out (Hi)
5
SXT Fine Out (Hi)
13
168K
V3
100K
V4
168K
All load resistors are ±2%, 1/4W

TWO SPEED SWITCH MODULE ASSEMBLY

FUNCTIONAL SETUP

FIGURE 1


TWO SPEED
SWITCH
MODULE ASSEMBLY
1
2
3
4
5
6
7
8
FINISH

KEY

☐ Assembly Operation

○ Test Operation

1. Workmanship-Vibration Test (JDC 11043)
2. Visual and Mechanical Inspection (JDC 11044)
3. Insulation Resistance Test (JDC 09627)
4. DC Isolation Test (JDC 11068)
5. Coarse Channel Gain Test (JDC 11045)
6. Fine Channel Gain Test (JDC 11046)
7. SXT Fine Input Transformer Test (JDC 11047)
8. Tuning Capacitors Test (JDC 11048)

FLOWGRAM

FIGURE 2

2.1.2 Applicable JDC's. The following JDC's form a part of this procedure:

JDC 09627
JDC 11043
JDC 11044
JDC 11045
JDC 11046
JDC 11047
JDC 11048
JDC 11068

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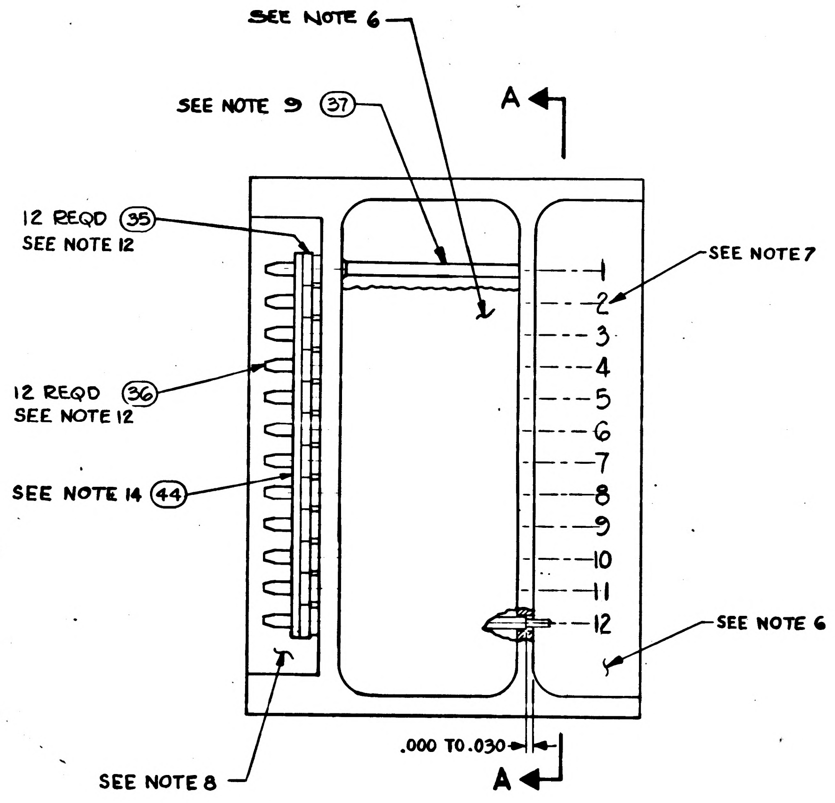
RJM:mav

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 14460			wK


SEE NOTE 6
SEE NOTE 9 (37)
A
12 REQD (35)
SEE NOTE 12
12 REQD (36)
SEE NOTE 12
SEE NOTE 14 (44)
SEE NOTE 7
1
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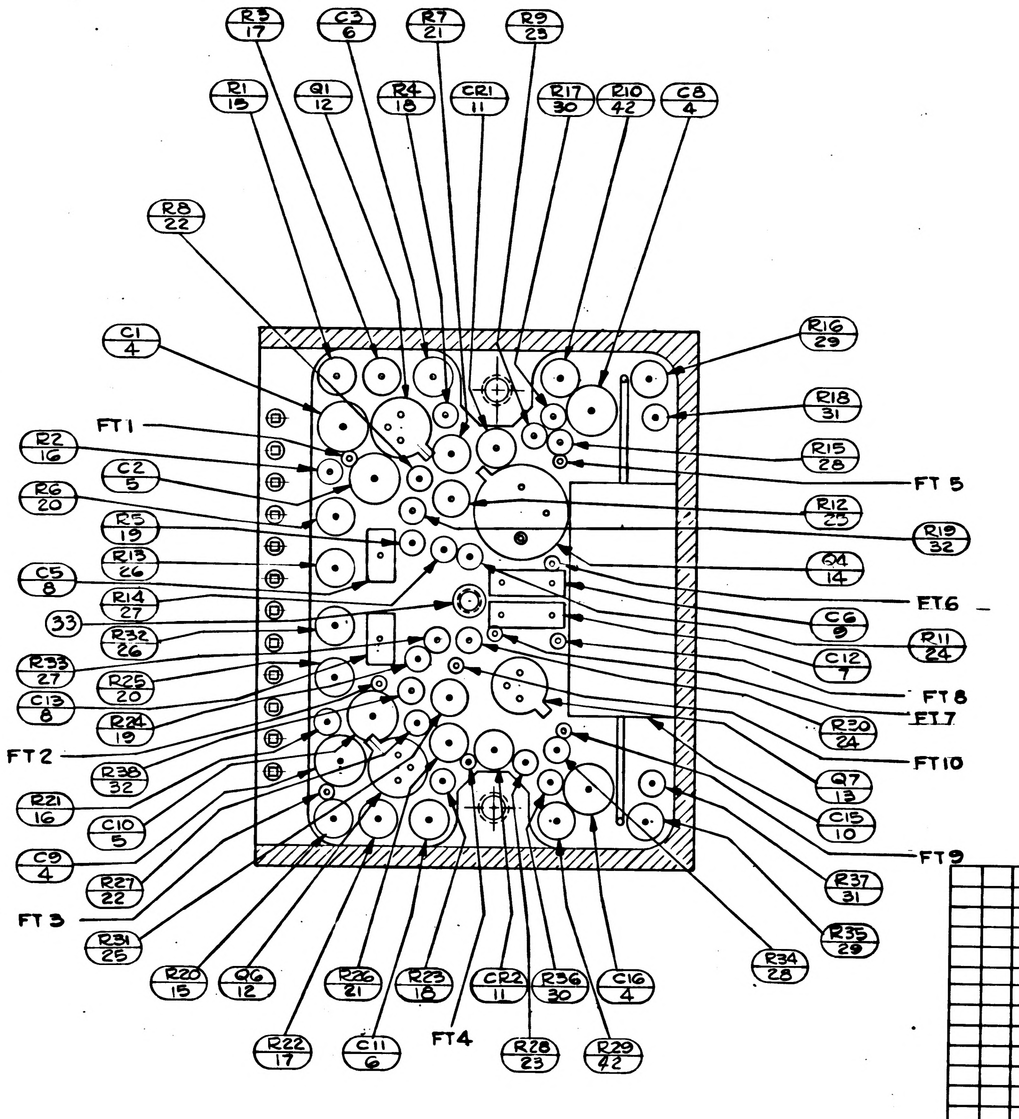
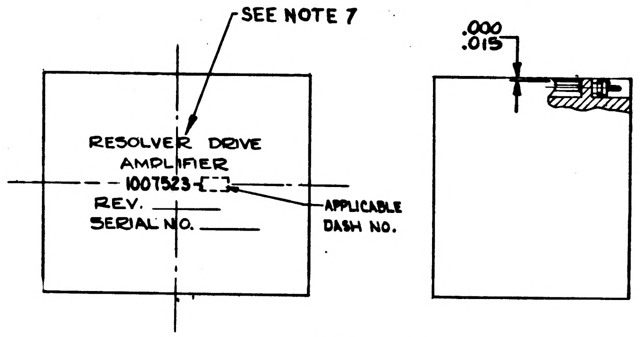
3
4
5
6
7
8
9
10
11
12
SEE NOTE 6
SEE NOTE 8
.000 TO .030
A


R3 17
C3 6
R7 21
R9 23
R1 15
Q1 12
R4 18
CR1 11
R17 30
R10 42
C8 4
R8 22
C1 4
FT1
R2 16
C2 5
R6 20
R5 19
R13 26
C5 8
R14 27
33
R32 26
R33 27
R25 20
C13 8
R24 19
FT2
R38 32
R21 16
C10 5
C9 4
R27 22
FT3
R31 25
R20 15
Q6 12
R26 21
R23 18
CR2 11
R36 30
C16 4
R22 17
C11 6
FT4
R28 23
R29 42
R34 28
R35 29
R37 31
FT9
C15 10
Q7 13
FT10
R30 24
FT7
FT8
C12 7
R11 24
C6 9
FT6
Q4 14
R19 32
R12 25
FT5
R15 28
R18 31
R16 29

SECTION A-A


SEE NOTE 7
RESOLVER DRIVE
AMPLIFIER
1007523-[ ]
REV.
SERIAL NO.
APPLICABLE DASH NO.
.000
.015

SCALE 2:1

1. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
2. INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.
3. UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.
4. TRANSISTORS TO BE CEMENTED IN PLACE PER ND1002004, TYPE I
5. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005
6. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
7. MARK PIN NUMBERS $^{.100}_{.060}$ HIGH (WHITE) ALL OTHER CHARACTERS $^{.140}_{.100}$ HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023, CENTRALIZE AS SHOWN.
8. *INDICATED AREA TO BE FREE OF ENCAPSULATION*
9. USE AS REQUIRED
10. WHITE ~~DOT~~ AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
11. ON ITEMS 2 & 3:
    BROKEN PATHS INDICATE SLEEVING
    "K" INDICATES CATHODE SIDE OF DIODE
    FT( ) INDICATES FEED THRU
    PLUS(+) INDICATES POSITIVE END OF CAPACITOR.
    "B" INDICATES BASE LEAD OF TRANSISTOR
    'C' " COLLECTOR " " "
    'E' " EMITTER " " "
    MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.
12. ASSEMBLE PER ND1002136
13. PROCURE PER PS 1015123.
14. BOND FIND NO. 44 TO FIND NO. 35 PER ND1002237.

QUANTITY REQUIRED			011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			X		REF	1015120	SCHEMATIC, ELECTRICAL
			1		44	1008540-12	GASKET, CONNECTOR-MINIATURE
			AR		43	1006776-22	INSULATION SLEEVING #24
			2		42	1010364-693	RESISTOR, FIXED
			2		41	AN500D-2-4	SCREW, FIL HD
			AR		40	1006776-21	INSULATION SLEEVING #22
			AR		39	1006787-2	WIRE, ELEC -.020 DIA.
			AR		38	1006757-1	WIRE, ELEC -.010 × .020
			AR		37	1006776-20	INSULATION SLEEVING #20
			12		36	1006782-5	CONTACT, WRAPOST MALE MINAT
			12		35	1006775	INSULATOR, WRAPOST MALE MINAT
			2		34	AN500D-4-4	SCREW, FIL HD
			1		33	1015135-015	SPACER
			2		32	1006750-42	↑
			2		31	1006750-25	
			2		30	1006750-12	
			2		29	1010368-8	
			2		28	1006750-56	
			2		27	1006750-26	
			2		26	1010364-673	
			2		25	1010368-115	
			2		24	1006750-66	
			2		23	1006750-44	
			2		22	1006750-32	
			2		21	1010364-757	
			2		20	1006750-73	
			2		19	1006750-72	
			2		18	1006750-84	
			2		17	1010364-727	
			2		16	1006750-77	
			2		15	1010364-687	RESISTOR, FIXED
			2		14	1010398-2	↑
			2		13	1010357-1	
			4		12	1010397-1	TRANSISTOR
			2		11	1010372-24	SEMICONDUCTOR DEVICE-DIODE
			2		10	1010375-56	↑
			2		9	1010359-18	
			2		8	1010409-33	
			2		7	1010359-21	
			2		6	1006755-45	
			2		5	1006755-31	
			4		4	1006755-79	CAPACITOR
			1		3	1015719	WAFER-UPPER
			1		2	1015718	WAFER-LOWER
			1		1	1007588	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007458		
1007578		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+- XX ± .02 +-
-- XXX ± .005 --
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 13 Aug 64 DATE
CHECKED 31 Aug 64
APPROVAL
APPROVAL 11-5-64
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER DRIVE AMPLIFIER
MODULE ASSY

CODE IDENT NO.
SIZE E
1007523
SCALE 4:1
SHEET OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

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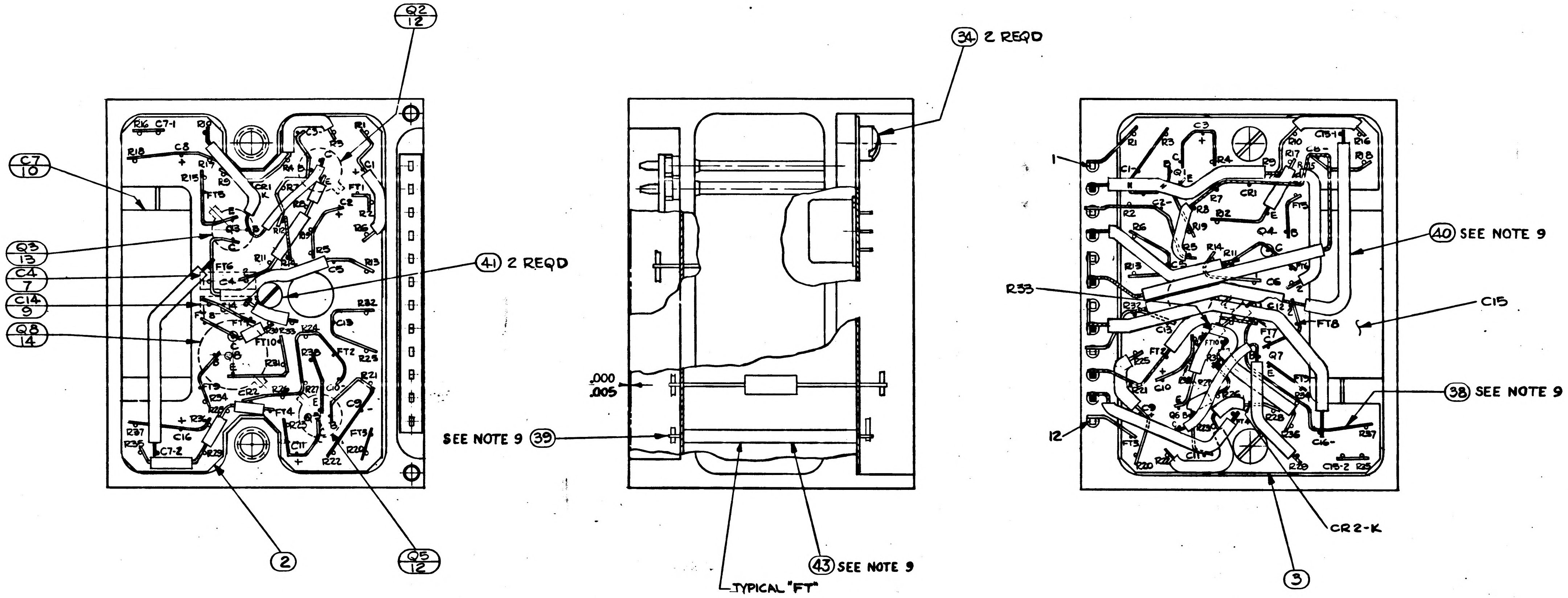
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C7 10
Q3 13
C4 7
C14 9
Q8 14
41 2 REQD
2
Q5 12
34 2 REQD
.000
.005
SEE NOTE 9 39
TYPICAL "FT"
43 SEE NOTE 9
1
40 SEE NOTE 9
C15
R53
FT8
38 SEE NOTE 9
12
CR2-K
3
R16
C7-1
R18
C8
R15
FT6
FT10
C16
C7-2
C11
FT3
C3
C1
CR1
R27
R2
R3
R1
C2
R7
R19
R14
R11
C12
Q7
C6
C18-2
R28
R29

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Opal 12 AUG 64 DATE
CHECKED 21 AUG 64
APPROVAL 8-27-64
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL 6 Oct 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER DRIVE AMPLIFIER MODULE ASSY

CODE IDENT NO.
SIZE E
1007523
SCALE 4:1
SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
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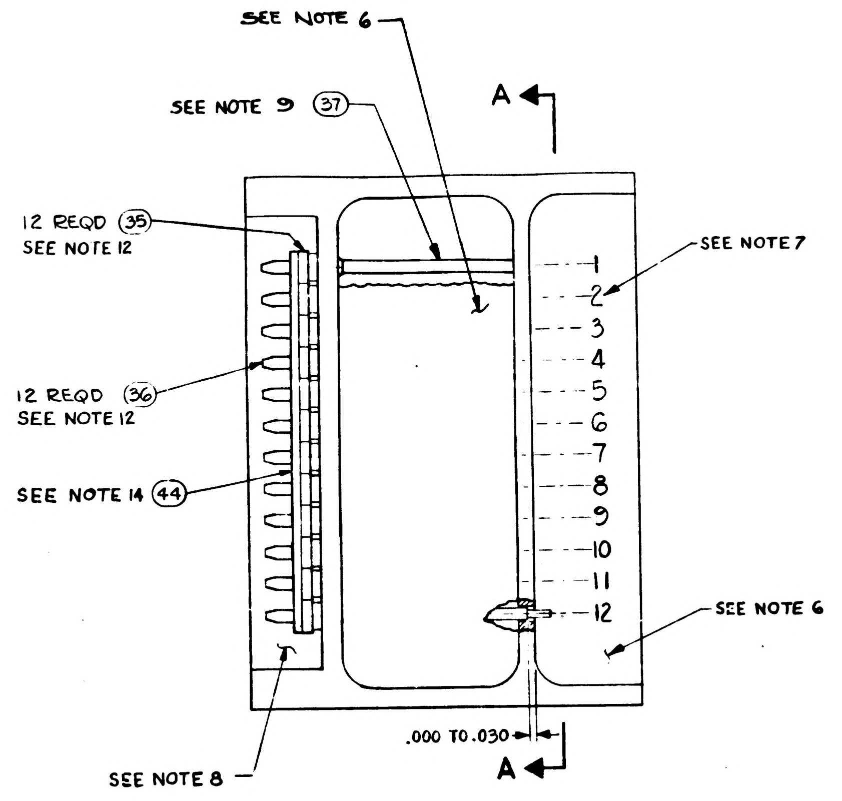
B		REVISED PER TDRR 19543		18 JUN 65	



SEE NOTE 6
SEE NOTE 9 (37)
A
12 REQD (35)
SEE NOTE 12
12 REQD (36)
SEE NOTE 12
SEE NOTE 14 (44)
SEE NOTE 7
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SEE NOTE 6
SEE NOTE 8
.000 TO .030
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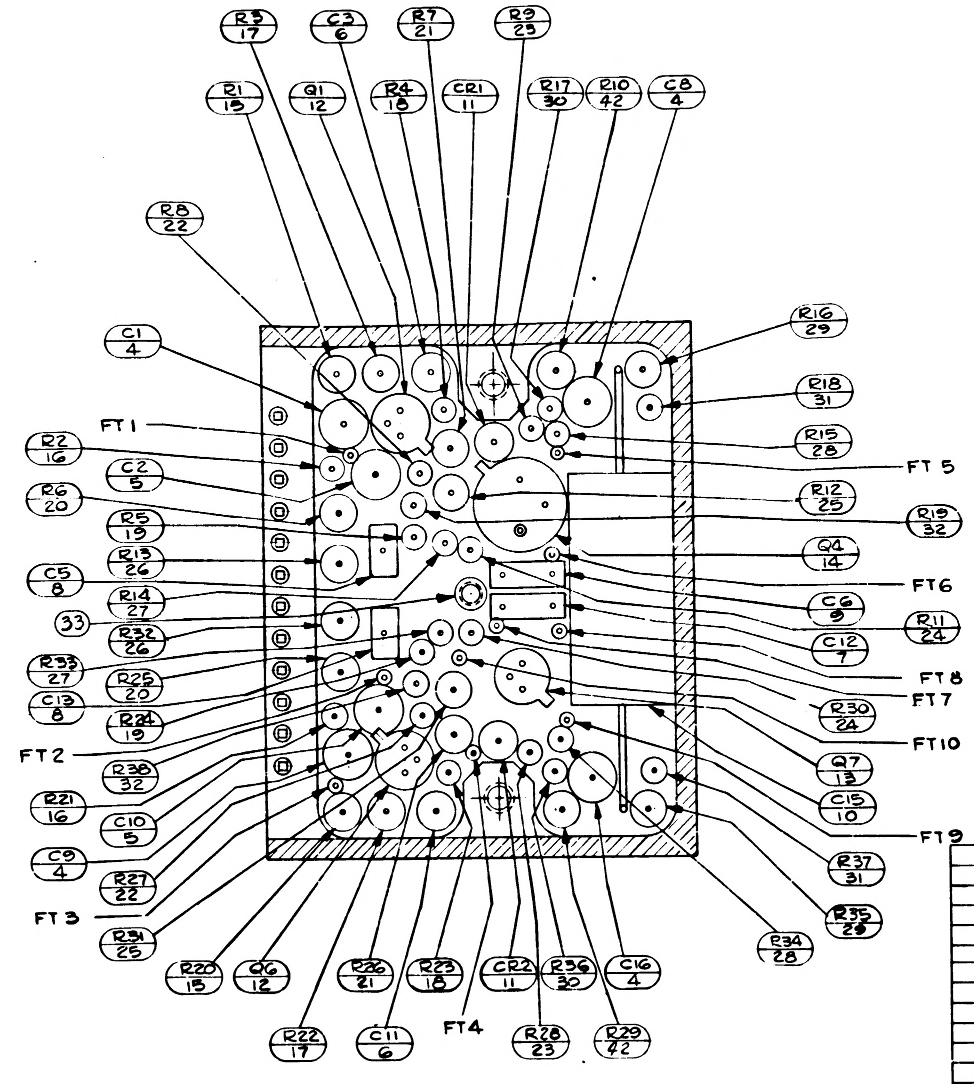

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R4 18
CR1 11
R17 30
R10 42
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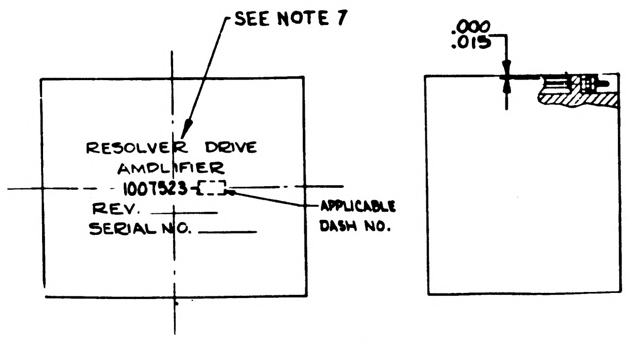
C1 4
R18 31
R15 28
FT 1
FT 5
R2 16
C2 5
R12 25
R6 20
R19 32
R5 19
Q4 14
R13 26
FT6
C5 8
R14 27
C6 9
33
R32 26
R11 24
C12 7
R33 27
R25 20
FT 8
C13 8
FT 7
R24 19
R30 24
FT 2
FT10
R38 32
Q7 13
R21 16
C15 10
C10 5
FT 9
C9 4
R37 31
R27 22
FT 3
R35 29
R31 25
R34 28
R20 15
Q6 12
R26 21
R23 18
CR2 11
R36 30
C16 4
FT4
R22 17
C11 6
R28 23
R29 42

SECTION A-A

1. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
2. INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327
3. UNLESS OTHERWISE SPECIFIED : COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.
4. TRANSISTORS TO BE CEMENTED IN PLACE PER ND1002004, TYPE I
5. ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005
6. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
7. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023, CENTRALIZE AS SHOWN.
8. INDICATED AREA TO BE FREE OF ENCAPSULATION
9. USE AS REQUIRED
10. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
11. ON ITEMS 2 & 3 :
    BROKEN PATHS INDICATE SLEEVING
    "K" INDICATES CATHODE SIDE OF DIODE
    FT( ) INDICATES FEED THRU
    PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
    "B" INDICATES BASE LEAD OF TRANSISTOR
    "C" " COLLECTOR " " "
    "E" " EMITTER " " "
    MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.
12. ASSEMBLE PER ND 1002136
13. PROCURE PER PS 1015123.
14. BOND FIND NO. 44 TO FIND NO. 35 PER ND 1002237.
15. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.



SEE NOTE 7
RESOLVER DRIVE
AMPLIFIER
1007523-[ ]
REV. ____
SERIAL NO. ____
APPLICABLE DASH NO.
.000
.015

SCALE 2:1

NOTES (CONTINUED):

16. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002110, TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT

			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			X		REF	1015120	SCHEMATIC, ELECTRICAL
			1		44	1008540-12	GASKET, CONNECTOR-MINIATURE
			AR		43	1006776-22	INSULATION SLEEVING #24
			2		42	1010364-693	RESISTOR, FIXED
			2		41	AN500D-2-4	SCREW, FIL HD
			AR		40	1006776-21	INSULATION SLEEVING #22
			AR		39	1006787-2	WIRE, ELEC -.020 DIA.
			AR		38	1006757-1	WIRE, ELEC -.010 x .020
			AR		37	1006776-20	INSULATION SLEEVING #20
			12		36	1006782-5	CONTACT, WRAPOST MALE MINIAT
			12		35	1006775	INSULATOR, WRAPOST MALE MIN
			2		34	AN500D-4-4	SCREW, FIL HD
			1		33	1015135-015	SPACER
			2		32	1006750-42	
			2		31	1006750-25	
			2		30	1006750-12	
			2		29	1010368-8	
			2		28	1006750-56	
			2		27	1006750-26	
			2		26	1010364-673	
			2		25	1010368-115	
			2		24	1006750-66	
			2		23	1006750-44	
			2		22	1006750-32	
			2		21	1010364-757	
			2		20	1006750-73	
			2		19	1006750-72	
			2		18	1006750-84	
			2		17	1010364-727	
			2		16	1006750-77	
			2		15	1010364-687	RESISTOR, FIXED
			2		14	1010398-2	
			2		13	1010357-1	
			4		12	1010397-1	TRANSISTOR
			2		11	1010372-24	SEMICONDUCTOR DEVICE-DIODE
			2		10	1010375-56	
			2		9	1010359-18	
			2		8	1010409-33	
			2		7	1010359-21	
			2		6	1006755-45	
			2		5	1006755-31	
			4		4	1008755-79	CAPACITOR
			1		3	1015719	WAFER-UPPER
			1		2	1015718	WAFER-LOWER
			1		1	1007588	FRAME

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007458 1007578		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +- DECIMALS XX ± .02 XXX ± .005 ANGLES +-
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

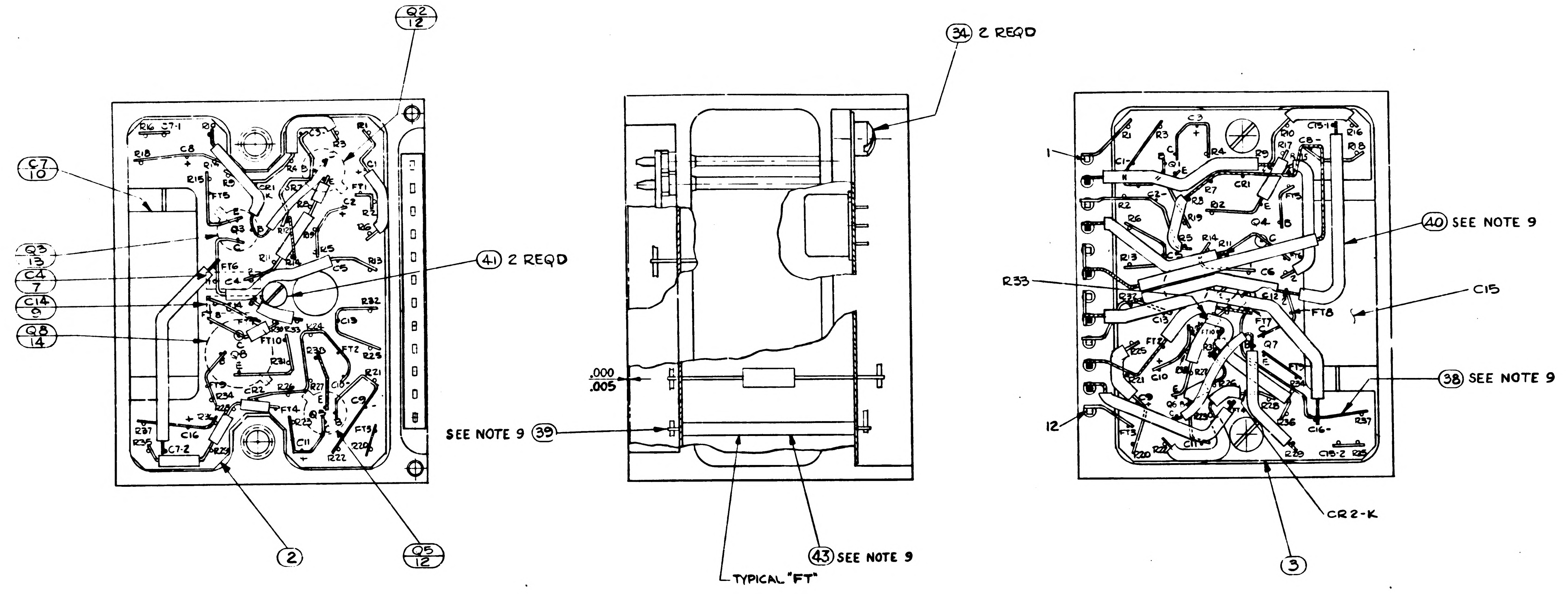
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL 10-6-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER DRIVE AMPLIFIER
MODULE ASSY

CODE IDENT NO. 99974
SIZE E
1007523
SCALE 4:1

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 14465			65
B		REVISED PER TDRR 19543		18 JUN 65	



Q2 12
C7 10
Q3 13
C4 7
C14 9
Q8 14
41 2 REQD
2
Q5 12
34 2 REQD
.000
.005
SEE NOTE 9 39
TYPICAL "FT"
43 SEE NOTE 9
1
R33
12
40 SEE NOTE 9
C15
38 SEE NOTE 9
CR2-K
3

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± XX ± .02 ±
XXX ± .005
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN
CHECKED
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 12-5-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER DRIVE AMPLIFIER
MODULE ASSY

CODE IDENT NO. 99974
SIZE E
1007523
SCALE 4:1
SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
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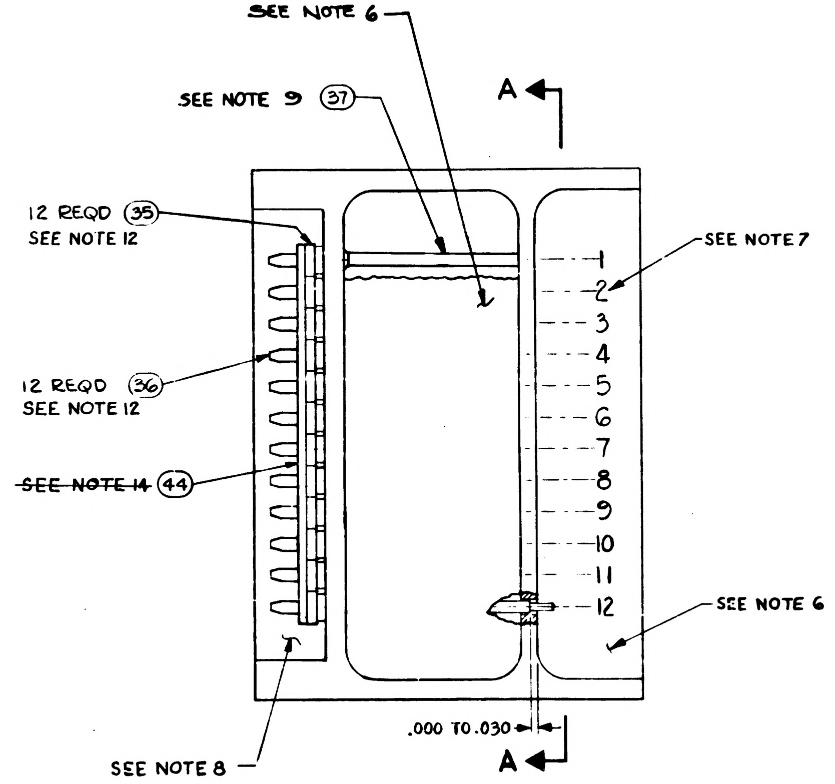
SEE NOTE 6
SEE NOTE 9 (37)
A
12 REQD (35)
SEE NOTE 12
SEE NOTE 7
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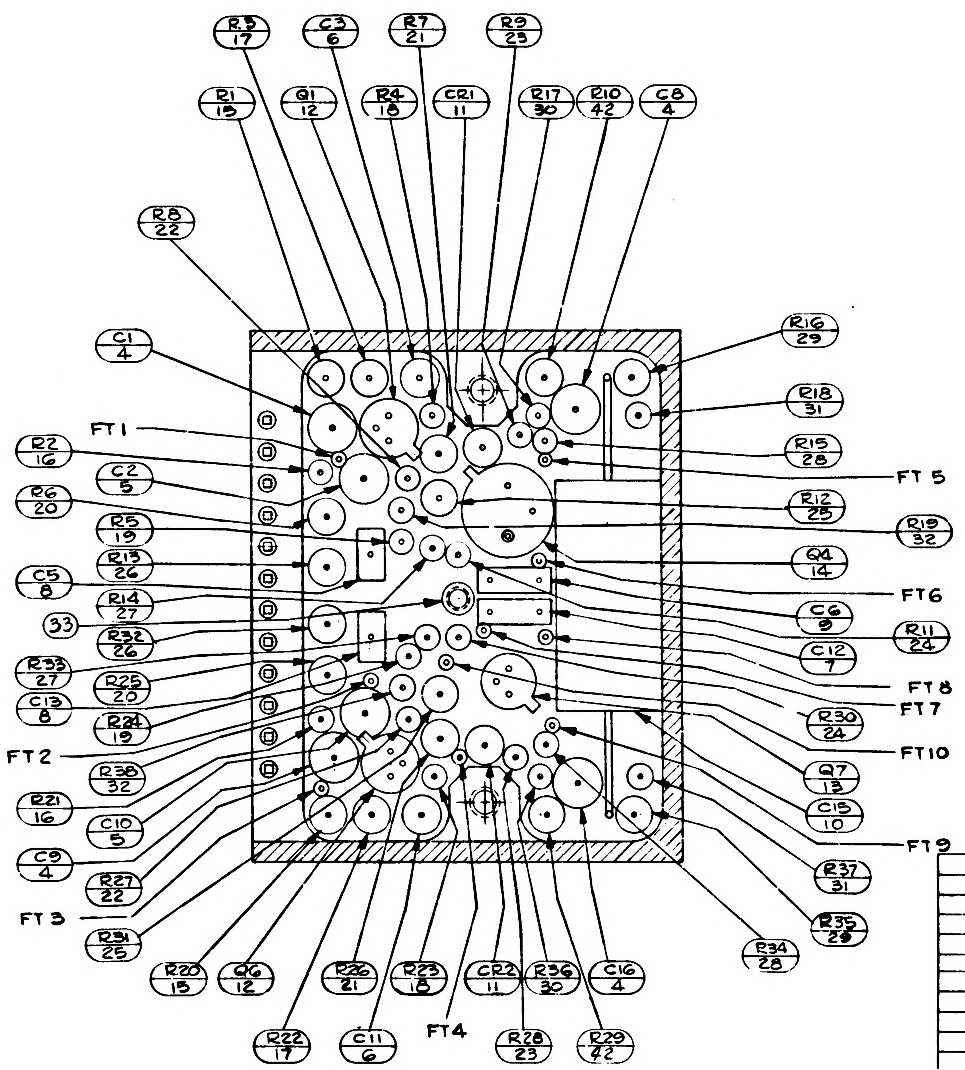
SEE NOTE 12
~~SEE NOTE 14~~ (44)
SEE NOTE 6
SEE NOTE 8
.000 TO .030
A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R7 21
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CR1 11
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R16 29
R18 31
R15 28
FT 5
FT 1
R2 16
C2 5
R6 20
R12 25
R19 32
R5 19
Q4 14
R13 26
C5 8
FT6
R14 27
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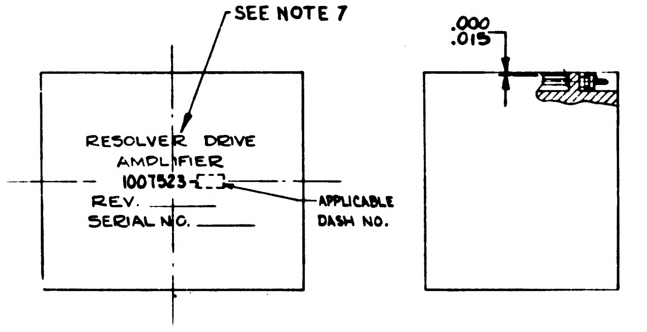
C10 5
FT 9
C9 4
R27 22
R37 31
FT 3
R31 25
R35 28
R34 28
R20 15
Q6 12
R26 21
R23 18
CR2 11
R36 30
C16 4
R22 17
C11 6
FT4
R28 23
R29 42

SECTION A-A

1. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
2. INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327
3. UNLESS OTHERWISE SPECIFIED : COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.
4. TRANSISTORS TO BE CEMENTED IN PLACE PER ND1002004, TYPE I
5. ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005
6. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
7. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND 1002023, CENTRALIZE AS SHOWN.
8. INDICATED AREA TO BE FREE OF ENCAPSULATION
9. USE AS REQUIRED
10. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
11. ON ITEMS 2 & 3 :
    BROKEN PATHS INDICATE SLEEVING
    "K" INDICATES CATHODE SIDE OF DIODE
    FT( ) INDICATES FEED THRU
    PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
    "B" INDICATES BASE LEAD OF TRANSISTOR
    "C" " COLLECTOR " "
    "E" " EMITTER " "
    MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.
12. ASSEMBLE PER ND 1002136
13. PROCURE PER PS 1015123.
14. ~~BOND FIND NO. 44 TO FIND NO. 35 PER ND 1002237.~~
15. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.


SEE NOTE 7
RESOLVER DRIVE
AMPLIFIER
1007523-
REV.
SERIAL NO.
APPLICABLE
DASH NO.
.000
.015

SCALE 2:1

NOTES (CONTINUED):

16. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002110, TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT

QUANTITY REQUIRED			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			X		REF	1015120	SCHEMATIC, ELECTRICAL
			1		44	1008540-12	GASKET, CONNECTOR-MINIATURE
			AR		43	1006776-22	INSULATION SLEEVING #24
			2		42	1010364-693	RESISTOR, FIXED
			2		41	AN500D-2-4	SCREW, FIL HD
			AR		40	1006776-21	INSULATION SLEEVING #22
			AR		39	1006787-2	WIRE, ELEC -.020 DIA.
			AR		38	1006757-1	WIRE, ELEC -.010 × .020
			AR		37	1006776-20	INSULATION SLEEVING #20
			12		36	1006782-5	CONTACT, WRAPOST MALE MINAT
			12		35	1006775	INSULATOR, WRAPOST MALE MIN
			2		34	AN500D-4-4	SCREW, FIL HD
			1		33	1015135-015	SPACER
			2		32	1006750-42	
			2		31	1006750-25	
			2		30	1006750-12	
			2		29	1010368-8	
			2		28	1006750-56	
			2		27	1006750-26	
			2		26	1010364-673	
			2		25	1010368-115	
			2		24	1006750-66	
			2		23	1006750-44	
			2		22	1006750-32	
			2		21	1010364-757	
			2		20	1006750-73	
			2		19	1006750-72	
			2		18	1006750-84	
			2		17	1010364-727	
			2		16	1006750-77	
			2		15	1010364-687	RESISTOR, FIXED
			2		14	1010398-2	
			2		13	1010357-1	
			4		12	1010397-1	TRANSISTOR
			2		11	1010372-24	SEMICONDUCTOR DEVICE-DIODE
			2		10	1010375-56	
			2		9	1010359-18	
			2		8	1010409-33	
			2		7	1010359-21	
			2		6	1006755-45	
			2		5	1006755-31	
			4		4	1008755-79	CAPACITOR
			1		3	1015719	WAFER-UPPER
			1		2	1015718	WAFER-LOWER
			1		1	1007588	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO
1007458		
1007378		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+- XX ± .02 +-
-- XXX ± .005 --
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL 10-8-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER DRIVE AMPLIFIER
MODULE ASSY

CODE IDENT NO. 99974
SIZE E
1007523
SCALE 4:1

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
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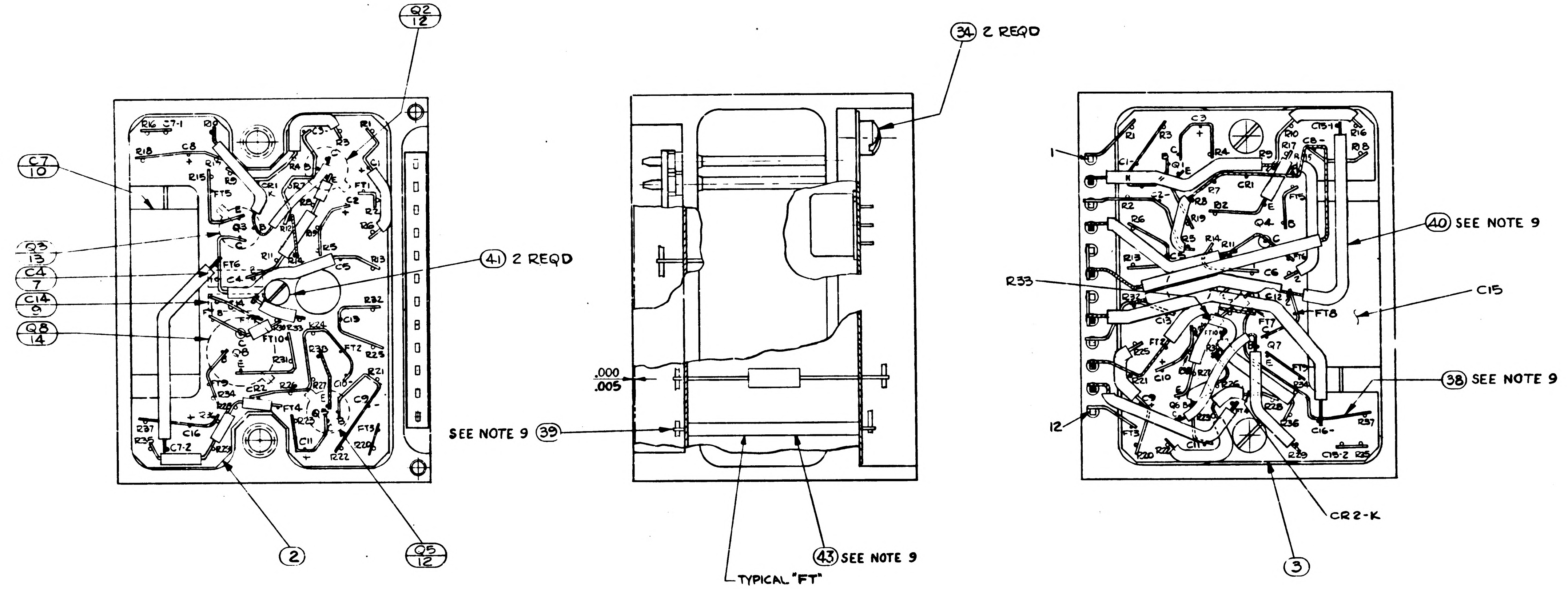
B		REVISED PER TDRR 19543		65	
C		REVISION STATUS CHANGED		65	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.005
SEE NOTE 9 39
TYPICAL "FT"
43 SEE NOTE 9
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R33
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40 SEE NOTE 9
C15
38 SEE NOTE 9
CR2-K
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R16
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C10
Q6
R28
R36
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C15-2
R20
C16
FT9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		
FRACTIONS	DECIMALS	ANGLES
±	XX ± .02	±
±	XXX ± .005	±

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

NEXT ASSY | USED ON

APPLICATION

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN
CHECKED
APPROVAL
APPROVAL 11-5-64
NASA APPROVAL 12-6-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

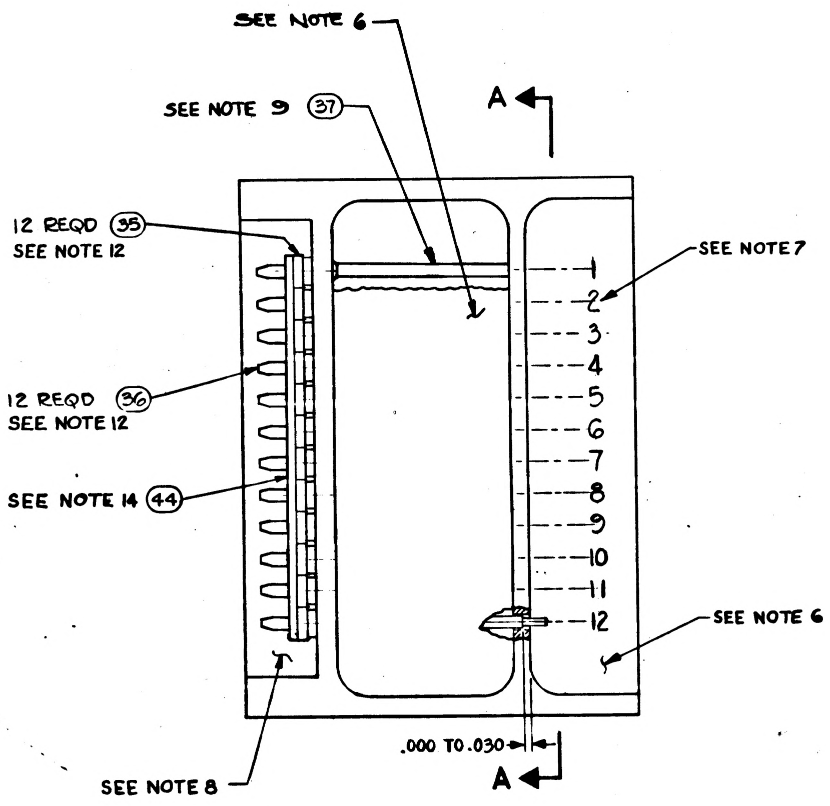
RESOLVER DRIVE AMPLIFIER
MODULE ASSY

CODE IDENT NO. 99974
SIZE E
1007523
SCALE 4:1
SHEET 2 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 13233

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.


SEE NOTE 6
SEE NOTE 9 (37)
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12 REQD (35)
SEE NOTE 12
SEE NOTE 7
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2
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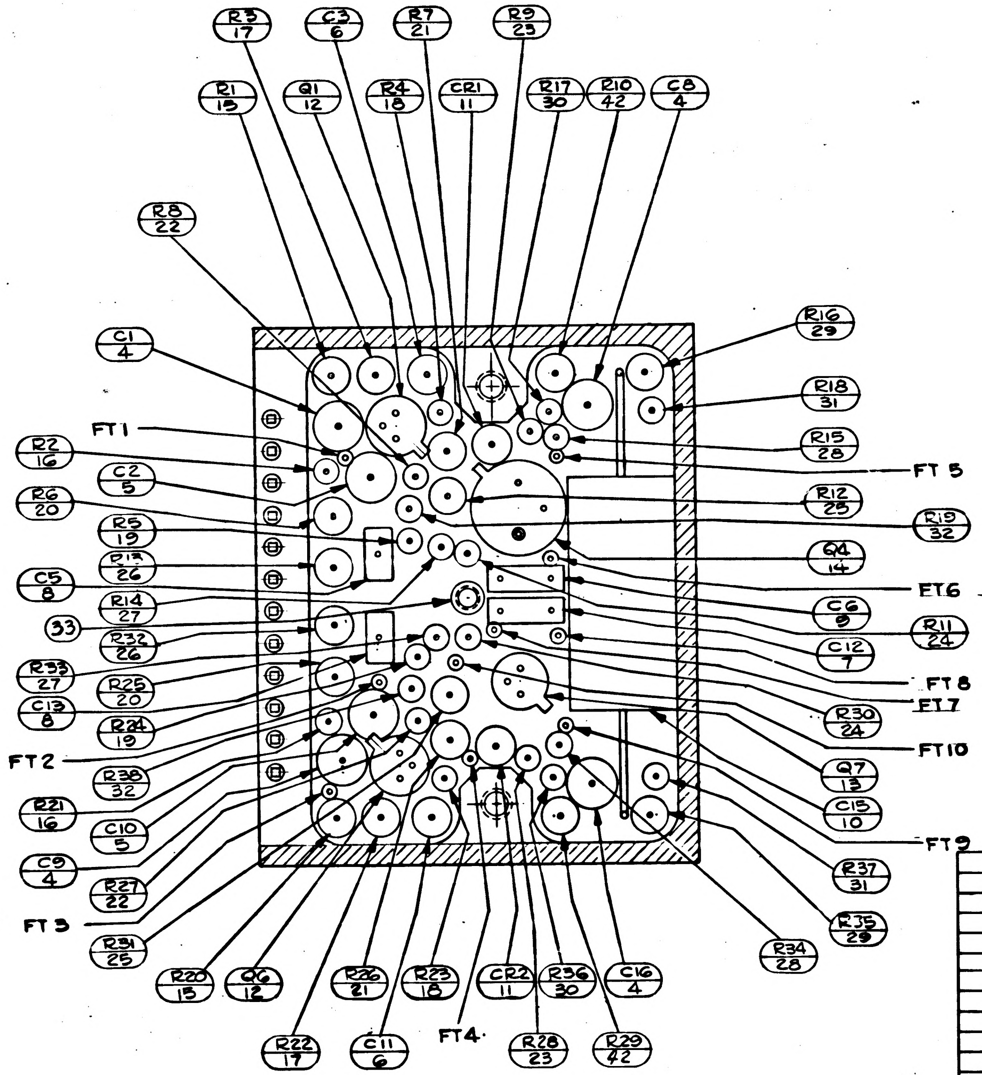
12 REQD (36)
SEE NOTE 12
SEE NOTE 14 (44)
SEE NOTE 6
SEE NOTE 8
.000 TO .030
A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R7 21
R9 23
R1 15
Q1 12
R4 18
CR1 11
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R10 42
C8 4
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R18 31
C1 4
R15 28
FT1
FT 5
R2 16
C2 5
R12 25
R6 20
R19 32
R5 19
R13 26
Q4 14
C5 8
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C10 5
FT 9
C9 4
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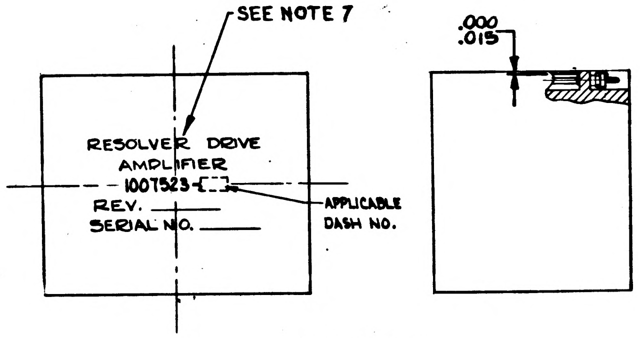
FT 3
R35 29
R31 25
R34 28
R20 15
Q6 12
R26 21
R23 18
CR2 11
R36 30
C16 4
FT4
R22 17
C11 6
R28 23
R29 42

SECTION A-A

1. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
2. INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.
3. UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.
4. TRANSISTORS TO BE CEMENTED IN PLACE PER ND1002004, TYPE I
5. ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005
6. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
7. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023, CENTRALIZE AS SHOWN.
8. *INDICATED AREA TO BE FREE OF ENCAPSULATION*
9. USE AS REQUIRED
10. WHITE ~~DOT~~ AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
11. ON ITEMS 2 & 3:
    BROKEN PATHS INDICATE SLEEVING
    "K" INDICATES CATHODE SIDE OF DIODE
    FT( ) INDICATES FEED THRU
    PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
    "B" INDICATES BASE LEAD OF TRANSISTOR
    'C' " COLLECTOR " "
    'E' " EMITTER " "
    MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.
12. ASSEMBLE PER ND 1002136
13. PROCURE PER PS 1015123.
14. BOND FIND NO. 44 TO FIND NO. 35 PER ND 1002237.


SEE NOTE 7
RESOLVER DRIVE
AMPLIFIER
1007523-[ ]
REV.
SERIAL NO.
APPLICABLE
DASH NO.
.000
.015

SCALE 2:1

QUANTITY REQUIRED								
			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	
			X		REF	1015120	SCHEMATIC, ELECTRICAL	
			1		44	1008540-12	GASKET, CONNECTOR-MINIATURE	
			AR		43	1006776-22	INSULATION SLEEVING #24	
			2		42	1010364-693	RESISTOR, FIXED	
			2		41	AN500D-2-4	SCREW, FIL HD	
			AR		40	1006776-21	INSULATION SLEEVING #22	
			AR		39	1006787-2	WIRE, ELEC -.020 DIA.	
			AR		38	1006757-1	WIRE, ELEC -.010 × .020	
			AR		37	1006776-20	INSULATION SLEEVING #20	
			12		36	1006782-5	CONTACT, WRAPOST MALE MINAT	
			12		35	1006775	INSULATOR, WRAPOST MALE MINAT	
			2		34	AN500D-4-4	SCREW, FIL HD	
			1		33	1015135-015	SPACER	
			2		32	1006750-42		
			2		31	1006750-25		
			2		30	1006750-12		
			2		29	1010368-8		
			2		28	1006750-56		
			2		27	1006750-26		
			2		26	1010364-673		
			2		25	1010368-115		
			2		24	1006750-66		
			2		23	1006750-44		
			2		22	1006750-32		
			2		21	1010364-757		
			2		20	1006750-73		
			2		19	1006750-72		
			2		18	1006750-84		
			2		17	1010364-727		
			2		16	1006750-77		
			2		15	1010364-687	RESISTOR, FIXED	
			2		14	1010398-2		
			2		13	1010357-1		
			4		12	1010397-1	TRANSISTOR	
			2		11	1010372-24	SEMICONDUCTOR DEVICE-DIODE	
			2		10	1010375-56		
			2		9	1010359-18		
			2		8	1010409-33		
			2		7	1010359-21		
			2		6	1006755-45		
			2		5	1006755-31		
			4		4	1006755-79	CAPACITOR	
			1		3	1015719	WAFER-UPPER	
			1		2	1015718	WAFER-LOWER	
			1		1	1007588	FRAME	

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007458		
1007578		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+- XX±.02 +-
— XXX±.005 —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 19 AUG 64 DATE
CHECKED 21 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

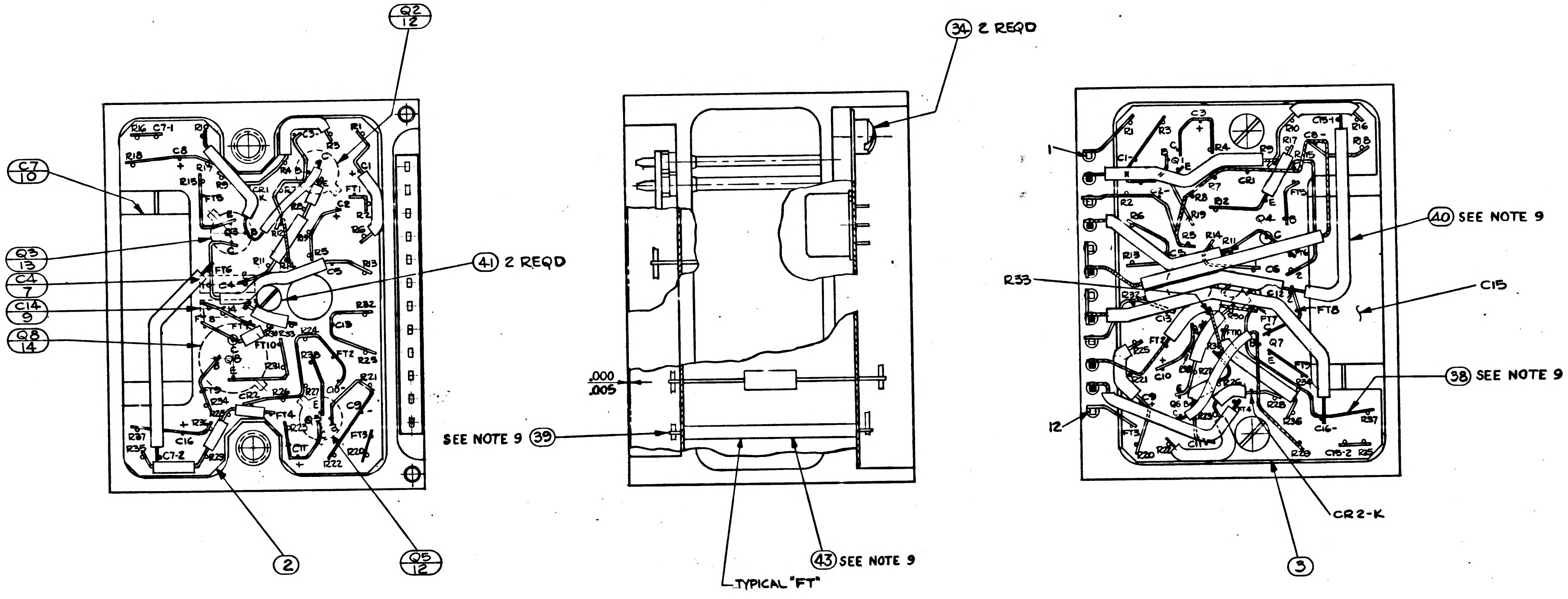
RESOLVER DRIVE AMPLIFIER
MODULE ASSY

CODE IDENT NO.
SIZE E
1007523
SCALE 4:1
SHEET OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS 13233

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.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C7/10
Q3/13
C4/7
C14/9
Q8/14
41 2 REQD
R16 C7-1 R10 R18 C8 R17 R15 R9 CR1 K FT5 E Q3 B C R4 R3 C3 R1 C1 FT1 C2 R2 R6 R7 R8 R12 R19 R5 R11 R14 R13 C5 FT6 C4 C14 R32 C13 FT8 FT7 R30 R33 FT10 R24 Q8 R31 R38 FT2 R25 R21 FT9 CR2 R26 R27 C10 C9 R34 FT4 R28 R36 R23 R37 C16 R35 C7-2 R29 C11 FT3 R22 R20
2
Q5/12
34 2 REQD
.000
.005
SEE NOTE 9 39
43 SEE NOTE 9
TYPICAL "FT"
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40 SEE NOTE 9
R33
C15
38 SEE NOTE 9
12
CR2-K
3
R1 R3 C3 R4 Q1 B C E C1 CR1 R9 R10 C15-1 R16 R17 C8 R18 R15 R7 R8 R2 C2 R12 FT5 R6 R19 Q4 E B C R5 R14 R11 R13 C5 C6 FT6 R32 C12 FT8 C13 R30 FT7 FT2 FT10 Q7 R25 R31 FT9 R21 C10 R26 R34 C9 Q6 FT4 R28 R36 R37 C16 FT3 C11 R20 R22 R29 C15-2 R35

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES + — XX ± .02 + — — XXX ± .005 — DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
			ACSP PN	
			DRAWN [illegible] DATE 13 AUG 64	RESOLVER DRIVE AMPLIFIER MODULE ASSY
			CHECKED [illegible] 21 AUG 64	
			APPROVAL [illegible]	
			APPROVAL D. R. Test 10-5-64	
		MATERIAL	NASA APPROVAL 10-8-64	CODE IDENT NO. SIZE E 1007523
NEXT ASSY	USED ON		MIT APPROVAL [illegible] Oct 64	
APPLICATION		CONTRACT NAS9-497		SCALE 4:1 SHEET 2 OF 2

1007523

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
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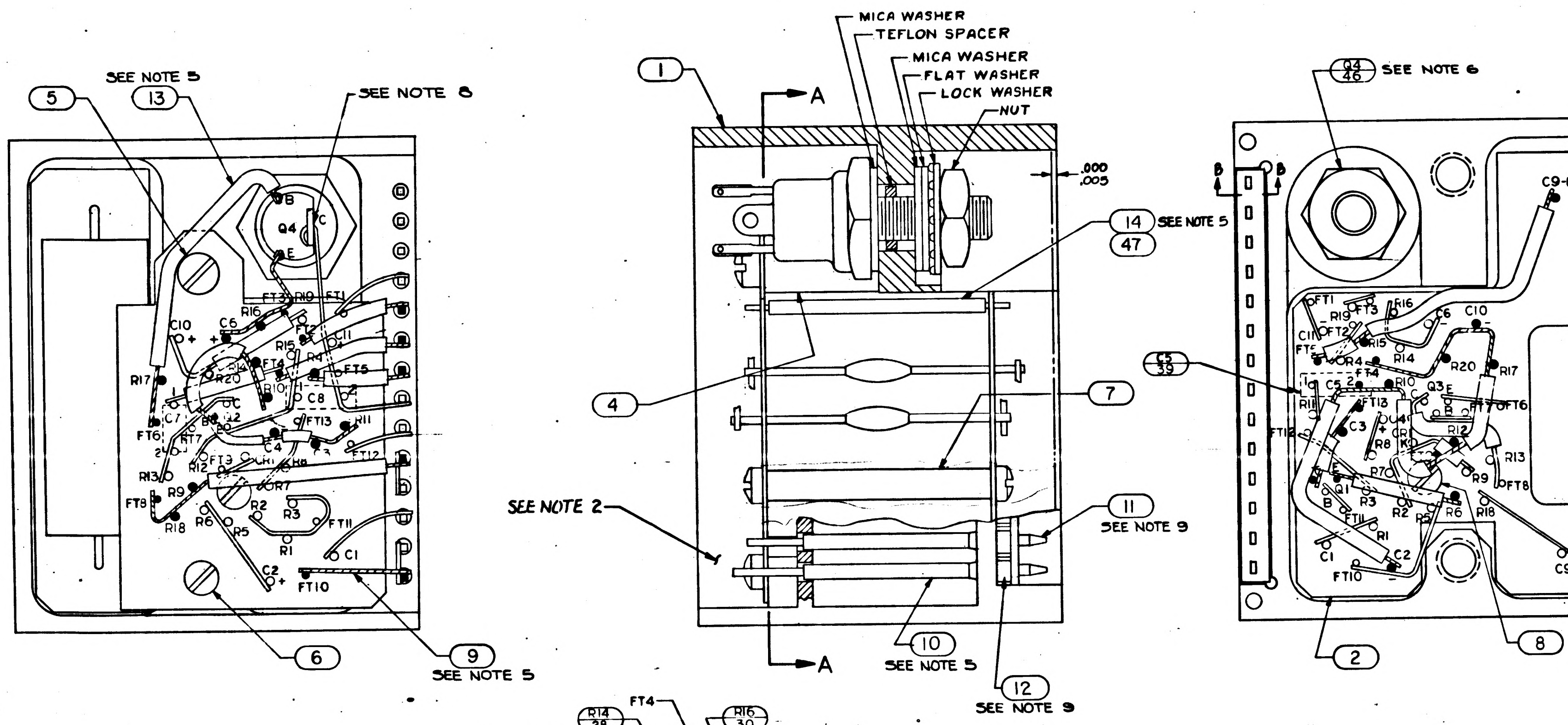
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SEE NOTE 8
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C
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C10
C6
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R12
C8
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C4
C5
FT8
R9
R2
R3
R18
R6
R5
R1
FT11
C1
C2
FT10
6
9
SEE NOTE 5
MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
1
A
.000
.005
14
47
SEE NOTE 5
4
7
SEE NOTE 2
11
SEE NOTE 9
10
SEE NOTE 5
12
SEE NOTE 9
A
Q4
46
SEE NOTE 6
B
B
C9-1
C5
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FT1
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R16
C6
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C11
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Q3
FT6
FT13
C3
R8
R12
R7
R13
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C2
FT10
C9-2
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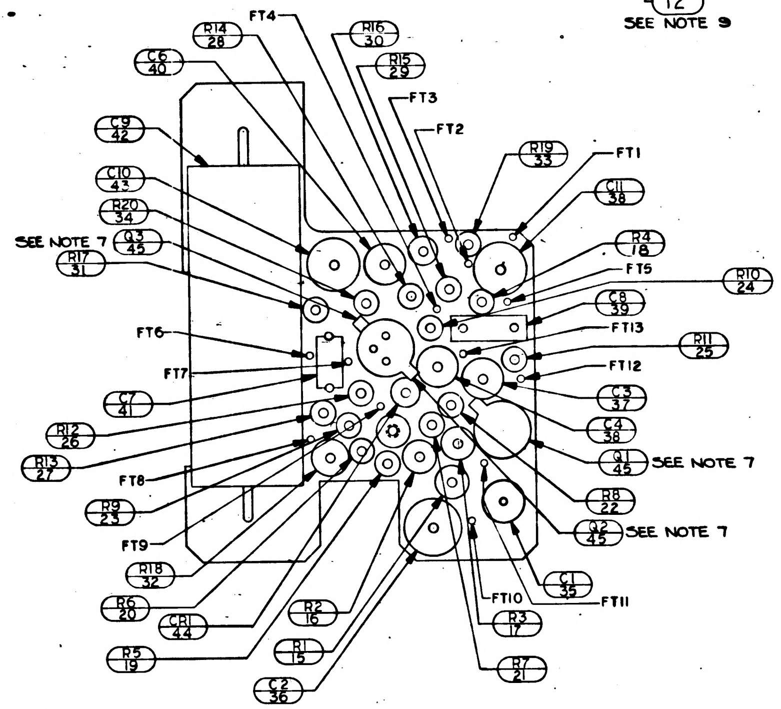
8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FT3
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C10
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R20
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R4
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SEE NOTE 7
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R17
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C8
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FT6
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FT12
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C7
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C4
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Q2
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SEE NOTE 7
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FT10
C1
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FT11
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CR1
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R2
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R7
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C2
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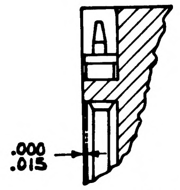
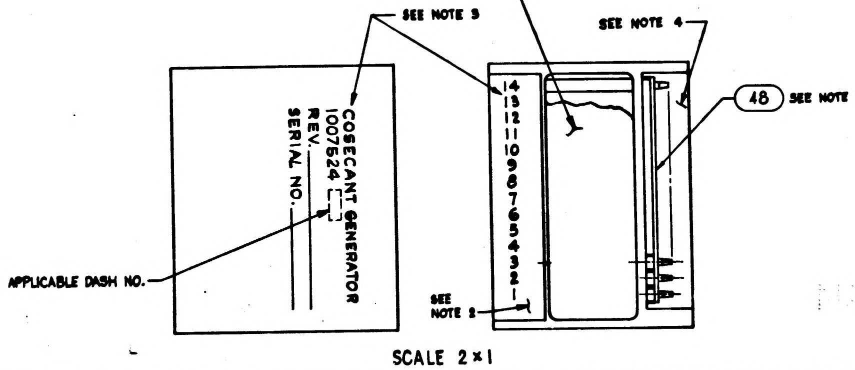
SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS



PARTIAL SECTION B-B

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
3. MARK PIN NUMBERS .060/.100 HIGH (WHITE) AND ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND1002023 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
4. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
5. AR DENOTES AS REQUIRED
6. MOUNTING TORQUE FOR ITEM 46, 12^{+2}_{-2} INCH POUNDS
7. TRANSISTORS TO BE CEMENTED IN PLACE PER ND1002004. TYPE I
8. SOLDER PER ND 1002071
9. ASSEMBLE PER ND1002136.
10. ON ITEMS 2 & 3, BROKEN PATH INDICATES INSULATION SLEEVING.
    "K" INDICATES CATHODE SIDE OF DIODE,
    FT INDICATES FEED THRU,
    MINUS (-) INDICATES NEGATIVE END OF CAPACITOR
    PLUS (+) INDICATES POSITIVE END OF CAPACITOR
    "C" INDICATES COLLECTOR LEAD OF TRANSISTOR
    "B" INDICATES BASE LEAD OF TRANSISTOR
    "E" INDICATES EMITTER LEAD OF TRANSISTOR
11. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005.
12. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING BLACK DOT AND CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING.
13. BOND ITEM 48 TO ITEM 12 PER ND 1002237
14. UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.
15. PROCURE PER PS 1007524
16. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND1002065.


SEE NOTE 3
SEE NOTE 2
SEE NOTE 4
COSECANT GENERATOR
1007524
REV.
SERIAL NO.
APPLICABLE DASH NO.
14
13
12
11
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2
1
SEE NOTE 2
48
SEE NOTE 13

SCALE 2×1

Ⓐ REPLACED WITH CHANGE BY REV B

			☒			1009509	SCHEMATIC	
			1			1008540-14	GASKET, CONNECTOR MINIATURE	48
			AR			1006776-22	INSULATION, SLEEVING	47
			1			1010269-1	TRANSISTOR	46
			3			1010397-1	TRANSISTOR	45
			1			1010372-24	DIODE	44
			1			1006755-77	CAPACITOR	43
			1			1010375-66		42
			1			1010359-11		41
			1			1006755-65		40
			2			1010359-27		39
			2			1006755-69		38
			1			1010375-124		37
			1			1006755-20		36
			1			1010375-12	CAPACITOR	35
			1			1006750-18	RESISTOR-FIXED	34
			1			1006750-7		33
			1			1010368-11		32
			1			1006750-56		31
			1			1010364-749		30
			1			1006750-64		29
			1			1006750-70		28
			1			1006750-84		27
			1			1006750-34		26
			1			1006750-19		25
			1			1010364-757		24
			1			1006750-44		23
			1			1006750-69		22
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			1			1006750-72		19
			1			1006750-77		18
			1			1010364-521		17
			1			1010364-727		16
			1			1010364-666	RESISTOR FIXED	15
			AR			1006787-2	WIRE-FEED THRU #22 AWG	14
			AR			1006776-21	INSULATION SLEEVING	13
			14			1006775	INSULATOR, WRAPOST-MALE MIN	12
			14			1006782-5	CONTACT, BLADE EDGE CONN.	11
			AR			1006776-20	INSULATION SLEEVING	10
			AR			1006757-1	WIRE, NICKEL RIBBON	9
			2			AN500D-2-4	SCREW	8
			1			1015135-015	SPACER	7
			1			AN500D-4-4	SCREW, PAN HEAD	6
			1			AN500D-4-12	SCREW, PAN HEAD	5
			1			1015131	SPACER	4
			1			1015157	WAFER BOARD, UPPER	3
			1			1015156	WAFER BOARD, LOWER	2
			1			1007596	FRAME ASSY	1
			011		EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
QUANTITY REQUIRED						LIST OF MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007579		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX±.02 XXX±.005 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

INSTRUMENTATION LAB
CAMBRIDGE, MASS.
CONTRACT NAS9-

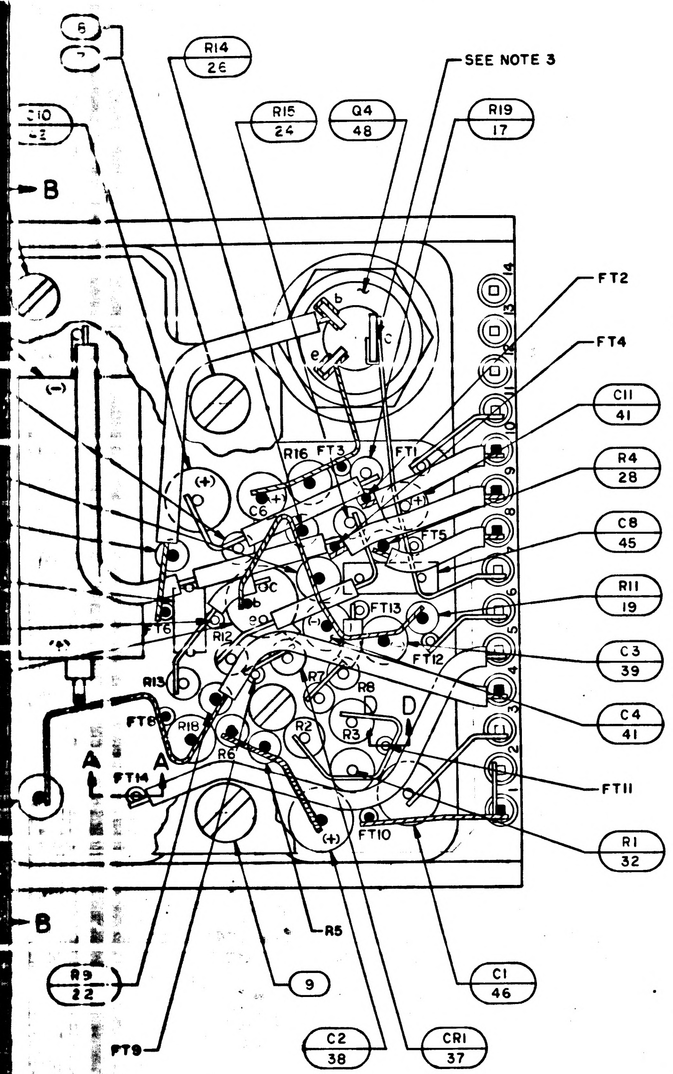
DRAWN Orzel 14 Aug 64
CHECKED R. Udemich 27 Aug 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COSECANT GENERATOR
MODULE ASSY

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007524
SCALE 4 X
WT
SHEET 1 OF 1

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 16330	5FEB65	WK



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SEE NOTE 3
C10
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FT4
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R11 19
C3 39
C4 41
FT11
R1 32
C1 46
CR1 37
C2 38
9
R5
R9 22
FT9
FT14
FT8
R13
R18
R6
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FT6
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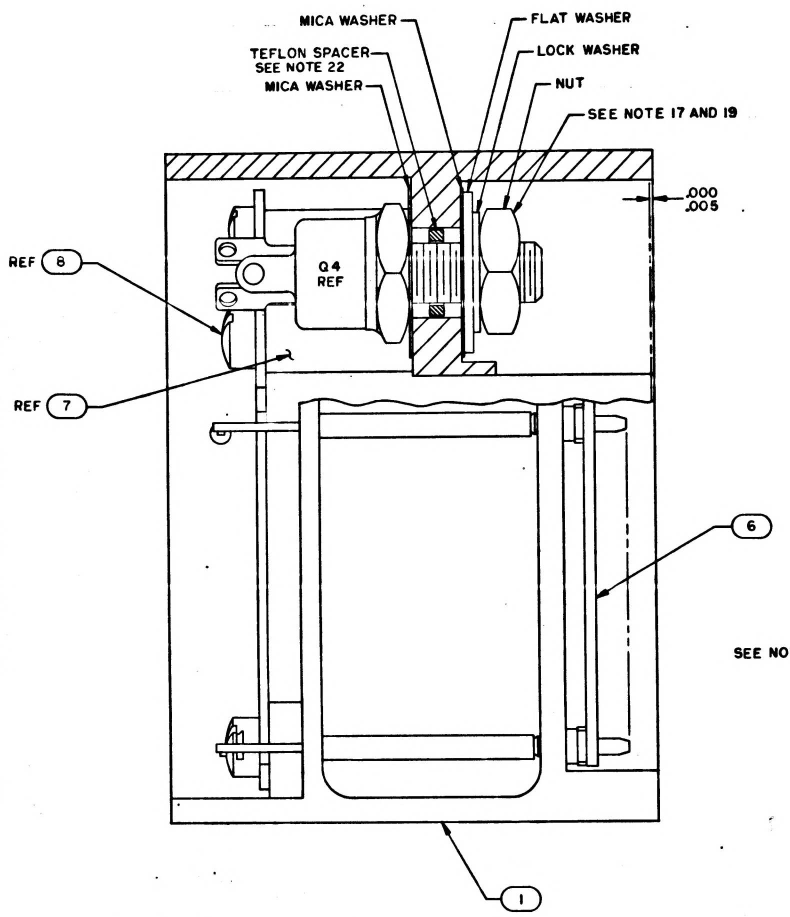
B



MICA WASHER
TEFLON SPACER SEE NOTE 22
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
SEE NOTE 17 AND 19
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.005
REF 8
REF 7
Q4 REF
6
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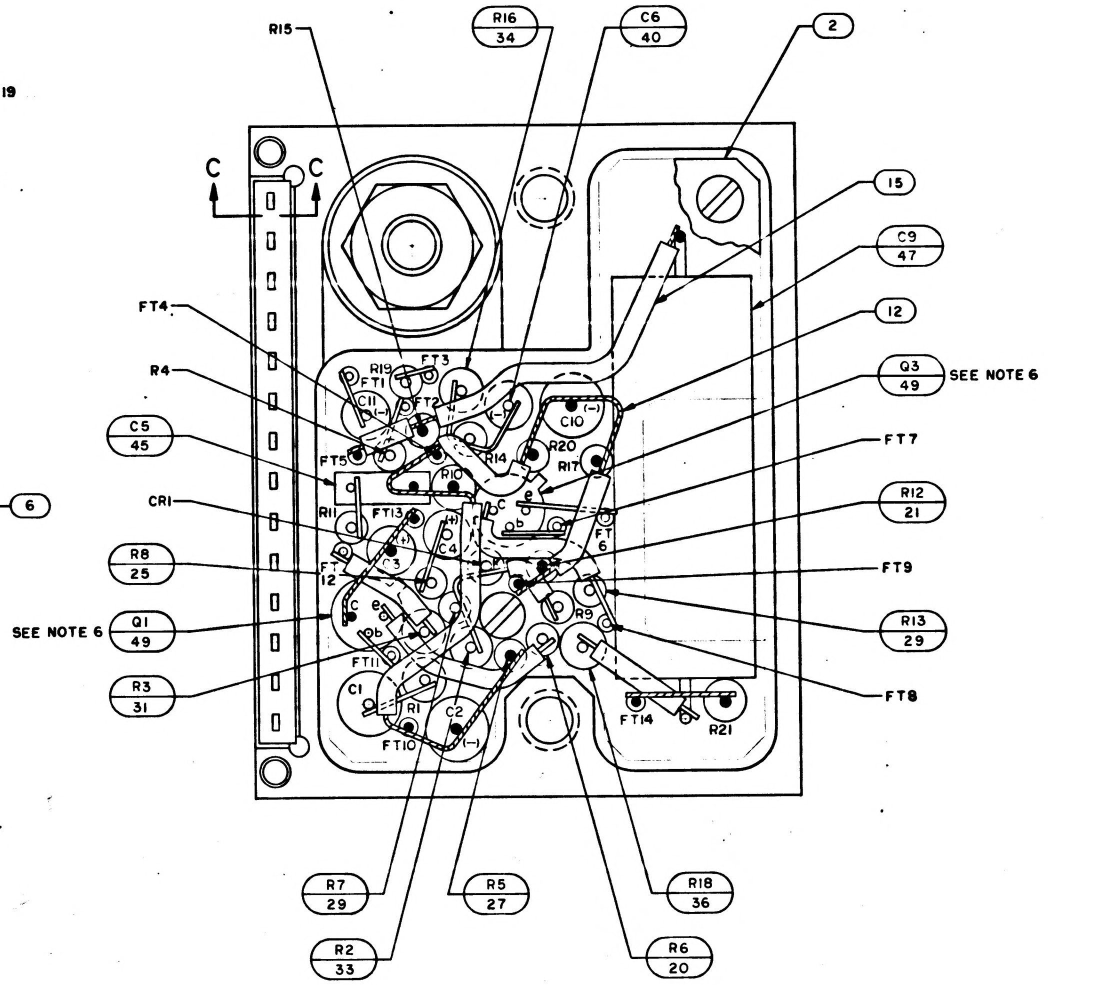

R15
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FT8
FT4
R4
C5 45
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SEE NOTE 6
Q1 49
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R19
FT1
FT3
C11
FT2
FT5
R10
R14
C10
R20
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FT13
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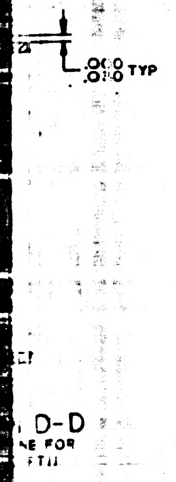

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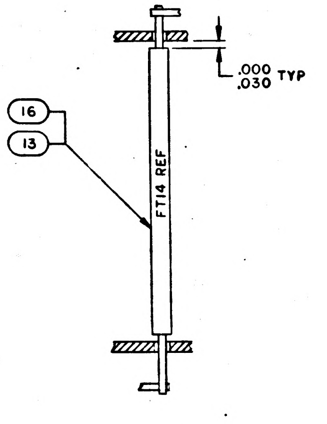
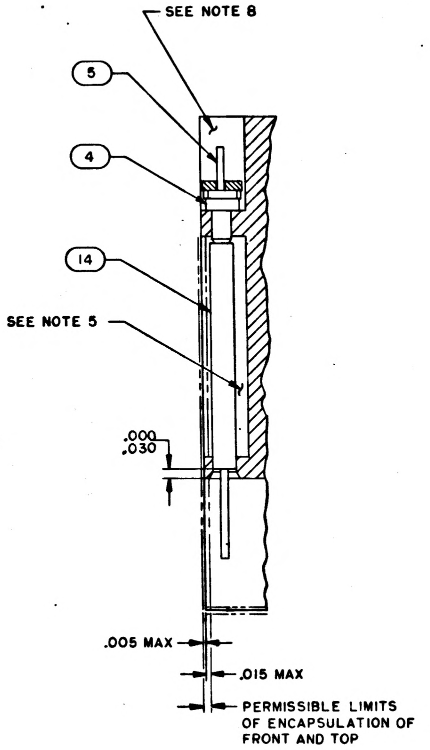


.000
.030 TYP
16
13
FT14 REF

SECTION A-A
TYP SLEEVING FOR
FT1 THRU FT6, FT8, FT9, FT10,
FT12, FT13 AND FT14



SEE NOTE 8
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SEE NOTE 5
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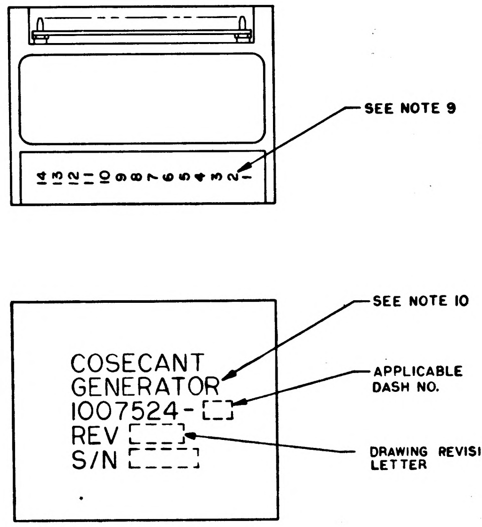
.015 MAX
PERMISSIBLE LIMITS
OF ENCAPSULATION OF
FRONT AND TOP

SECTION C-C



14 13 12 11 10 9 8 7 6 5 4 3 2 1
SEE NOTE 9
COSECANT
GENERATOR
1007524-
REV
S/N
SEE NOTE 10
APPLICABLE DASH NO.
DRAWING REVISION LETTER

MARKING VIEWS
SCALE 2/1

Ⓑ REPLACES REV A WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
⨯	1009509	SCHEMATIC	REF
3	1010397-1	TRANSISTOR	49
1	1010269-1	TRANSISTOR	48
1	1010375-66	CAPACITOR	47
1	1010375-12	CAPACITOR	46
2	1010359-27	CAPACITOR	45
1	1010359-11	CAPACITOR	44
1	1006755-134	CAPACITOR	43
1	1006755-77	CAPACITOR	42
2	1006755-69	CAPACITOR	41
1	1006755-65	CAPACITOR	40
1	1006755-45	CAPACITOR	39
1	1006755-20	CAPACITOR	38
1	1010372-24	DIODE	37
1	1010368-11	RESISTOR	36
1	1010364-757	RESISTOR	35
1	1010364-749	RESISTOR	34
1	1010364-727	RESISTOR	33
1	1010364-666	RESISTOR	32
1	1010364-521	RESISTOR	31
1	1010364-93	RESISTOR	30
2	1006750-84	RESISTOR	29
1	1006750-77	RESISTOR	28
1	1006750-72	RESISTOR	27
1	1006750-70	RESISTOR	26
1	1006750-69	RESISTOR	25
1	1006750-64	RESISTOR	24
1	1006750-56	RESISTOR	23
1	1006750-44	RESISTOR	22
1	1006750-34	RESISTOR	21
1	1006750-20	RESISTOR	20
1	1006750-19	RESISTOR	19
1	1006750-18	RESISTOR	18
1	1006750-7	RESISTOR	17
AR	1006776-22	INSULATION SLEEVING	16
AR	1006776-21	INSULATION SLEEVING	15
AR	1006776-20	INSULATION SLEEVING	14
AR	1006757-8	WIRE, ELECTRICAL	13
AR	1006757-1	WIRE, ELECTRICAL	12
4	1010485 - 42	SCREW, FILLISTER HD	11
2	1015135-015	SPACER	10
1	1010485-100	SCREW, FILLISTER HD	9
1	1010485-116	SCREW, FILLISTER HD	8
1	1015131	SPACER	7
1	1008540-14	GASKET, CONNECTOR MINAT	6
14	1006782-5	CONTACT, WRAPOST, MALE MINAT	5
14	1006775	INSULATOR, WRAPOST, MALE MINAT	4
1	1008599	WIRING BOARD, TOP	3
1	1008598	WIRING BOARD, BOTTOM	2
1	1007596	FRAME ASSY	1

011 LIST OF MATERIALS

NEXT ASSY	USED ON
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG NO CONTRACT
DRAWN R. C. Tayler DATE 27 Jan 65
CHECKED 5FEB65
APPROVAL
APPROVAL 2/8/65
NASA APPROVAL
MIT APPROVAL W Kupfer 9 Feb 65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

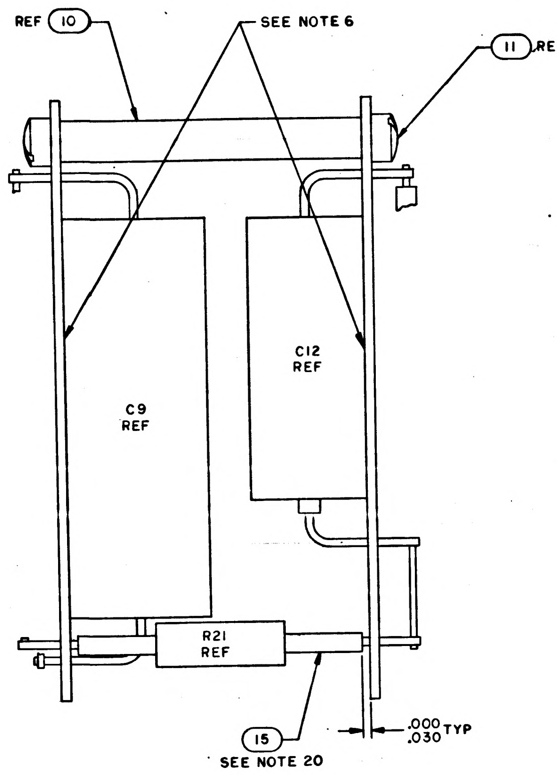
COSECANT GENERATOR
MODULE ASSY

CODE IDENT NO. ——
SIZE J
NASA DRAWING NO 1007524
SCALE 5/1 WT SHEET 1 OF 1

1007524 B

1007524

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.


REF 10
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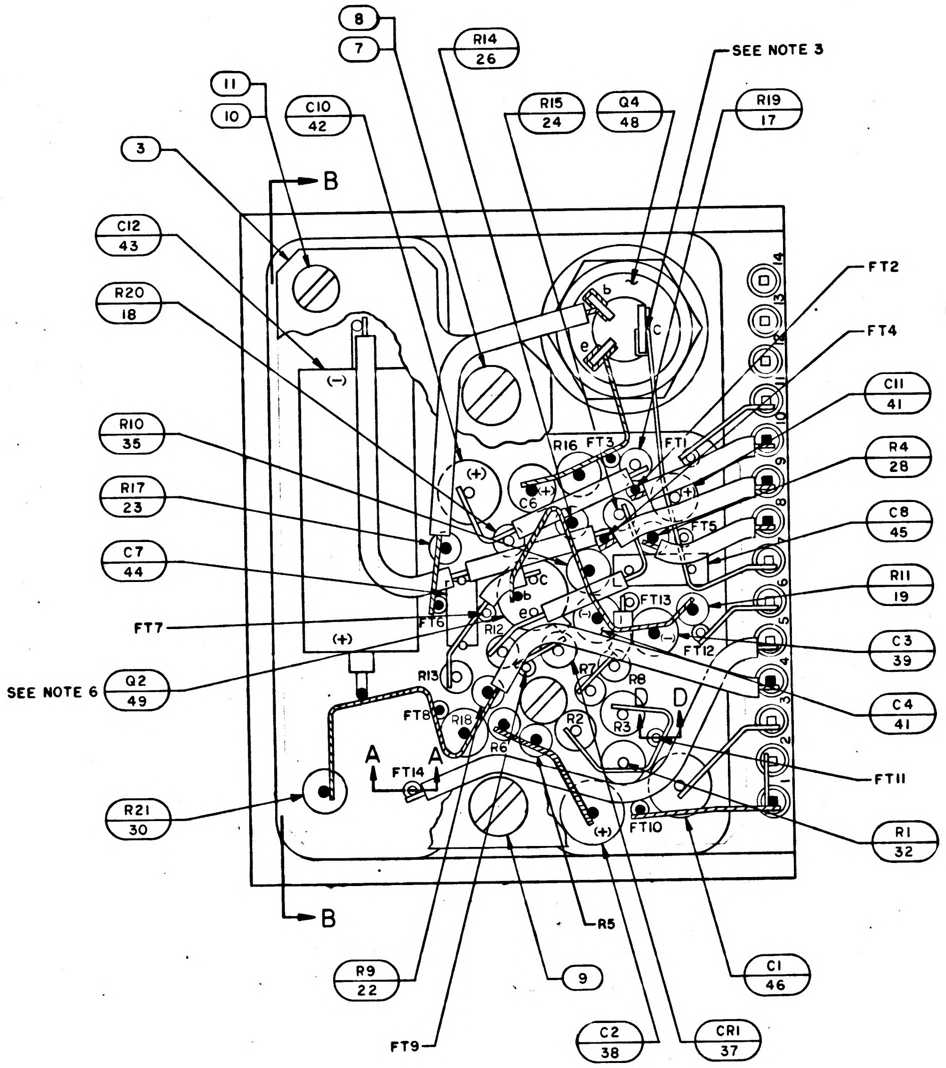
11 REF
C9 REF
C12 REF
R21 REF
15
SEE NOTE 20
.000 .030 TYP

SECTION B-B
WITH FIND NO.1 REMOVED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FT2
FT4
C11 41
R10 35
R4 28
R17 23
C8 45
C7 44
R11 19
FT7
C3 39
SEE NOTE 6
Q2 49
C4 41
FT11
A
A
FT14
R21 30
R1 32
B
R5
C1 46
R9 22
9
FT9
C2 38
CR1 37
R16
FT3
FT1
C6
FT5
FT6
R12
FT13
FT12
R13
R7
R8
FT8
R18
R6
R2
R3
D
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FT10
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(–)
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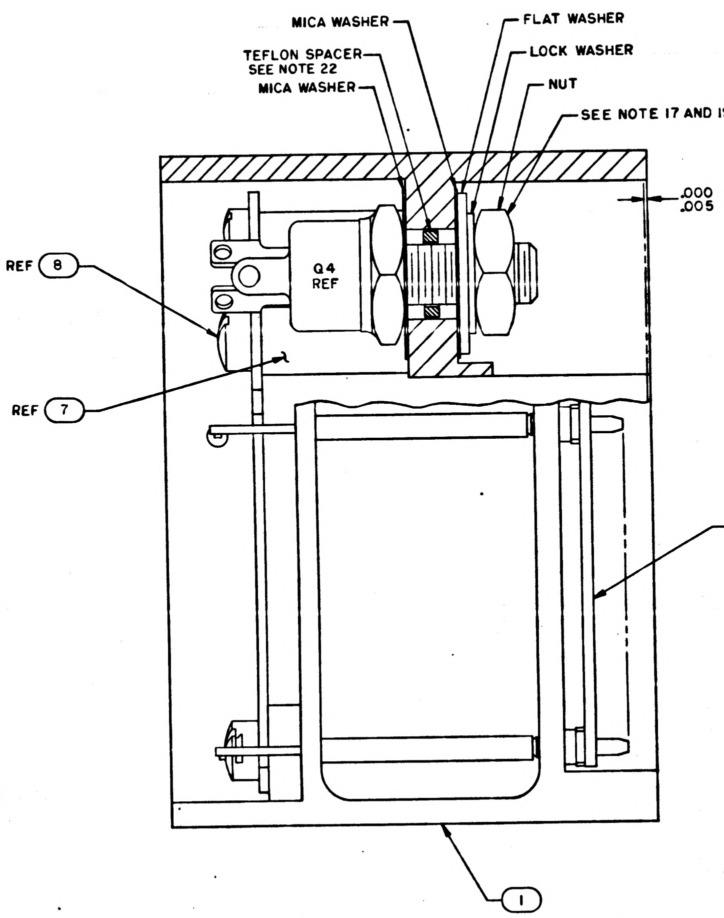
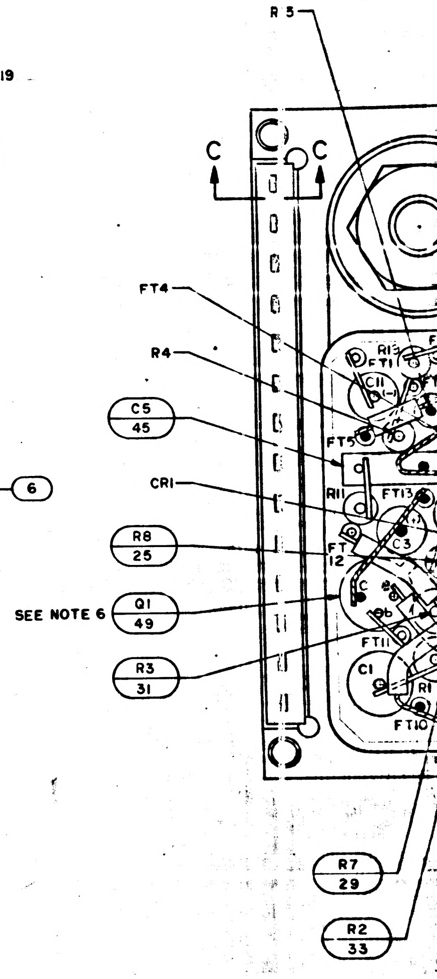
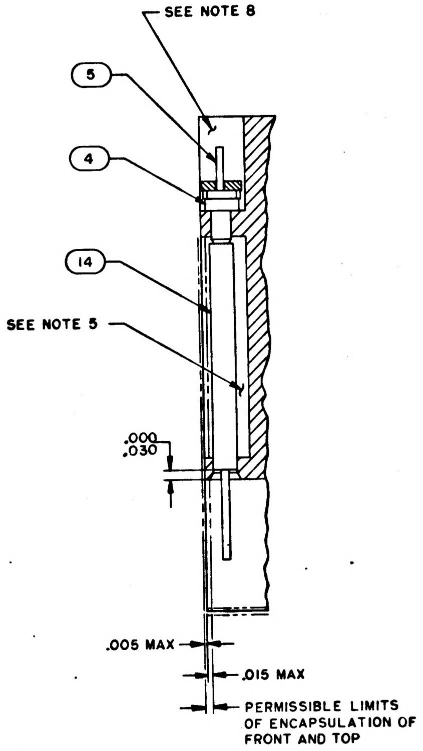

MICA WASHER
FLAT WASHER
TEFLON SPACER
SEE NOTE 22
LOCK WASHER
MICA WASHER
NUT
SEE NOTE 17 AND 19
.000 .005
REF 8
Q4 REF
REF 7
6
1

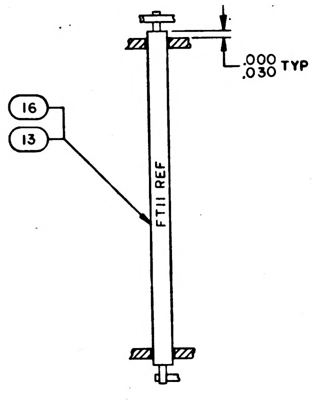

R 5
C
C
FT4
R4
C5 45
CR1
R8 25
SEE NOTE 6
Q1 49
R3 31
R7 29
R2 33
R13
FT1
C11
FT5
R11
FT13
C3
FT 12
FT11
C1
R1
FT10
c
b


SEE NOTE 8
5
4
14
SEE NOTE 5
.000 .030
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION OF FRONT AND TOP

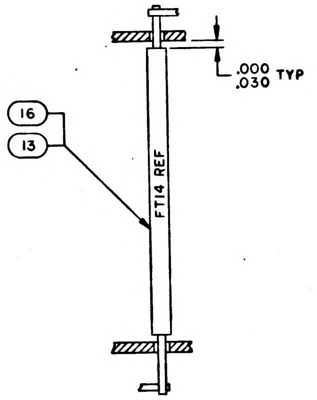
SECTION C-C

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND1002005
3. SOLDER PER ND 1002071
4. ASSEMBLE FIND NO.4 TO FIND NO.5 PER ND 1002136
5. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
6. BOND Q2 AND C12 TO FIND NO.3 AND Q1, Q3 AND C9 TO FIND NO.2 PER ND 1002004 TYPE I
7. BOND FIND NO.6 TO FIND NO.4 PER ND 1002237
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
11. AR DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
14. + DENOTES POSITIVE SIDE OF CAPACITOR
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. MOUNTING TORQUE FOR NUT OF FIND NO.48 TO BE 12-14 INCH POUNDS
18. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
19. APPLY SEALING COMPOUND MIL-S-22473 GRADE A TO NUT OF FIND NO.48
20. TYPICAL SLEEVING FOR FIND NO. 17 THRU FIND NO. 37
21. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF P.S.
22. STAKE TEFLON SPACER PER ND 1002009 METHOD


.000 .030 TYP
16
13
FT11 REF

SECTION D-D
TYP SLEEVING FOR
FT7 AND FT11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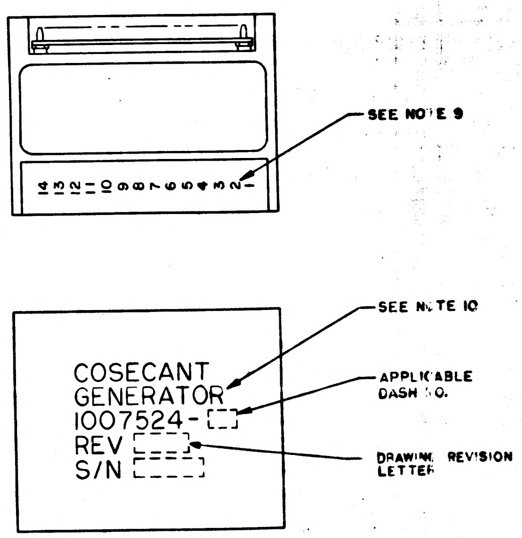
16
13
FT14 REF

SECTION A-A
TYP SLEEVING FOR
FT1 THRU FT6, FT8, FT9, FT10,
FT12, FT13 AND FT14


14 13 12 11 10 9 8 7 6 5 4 3 2 1
SEE NOTE 9
COSECANT
GENERATOR
1007524-
REV
S/N
SEE NOTE 10
APPLICABLE DASH NO.
DRAWING REVISION LETTER

MARKING VIEWS
SCALE 2/1

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
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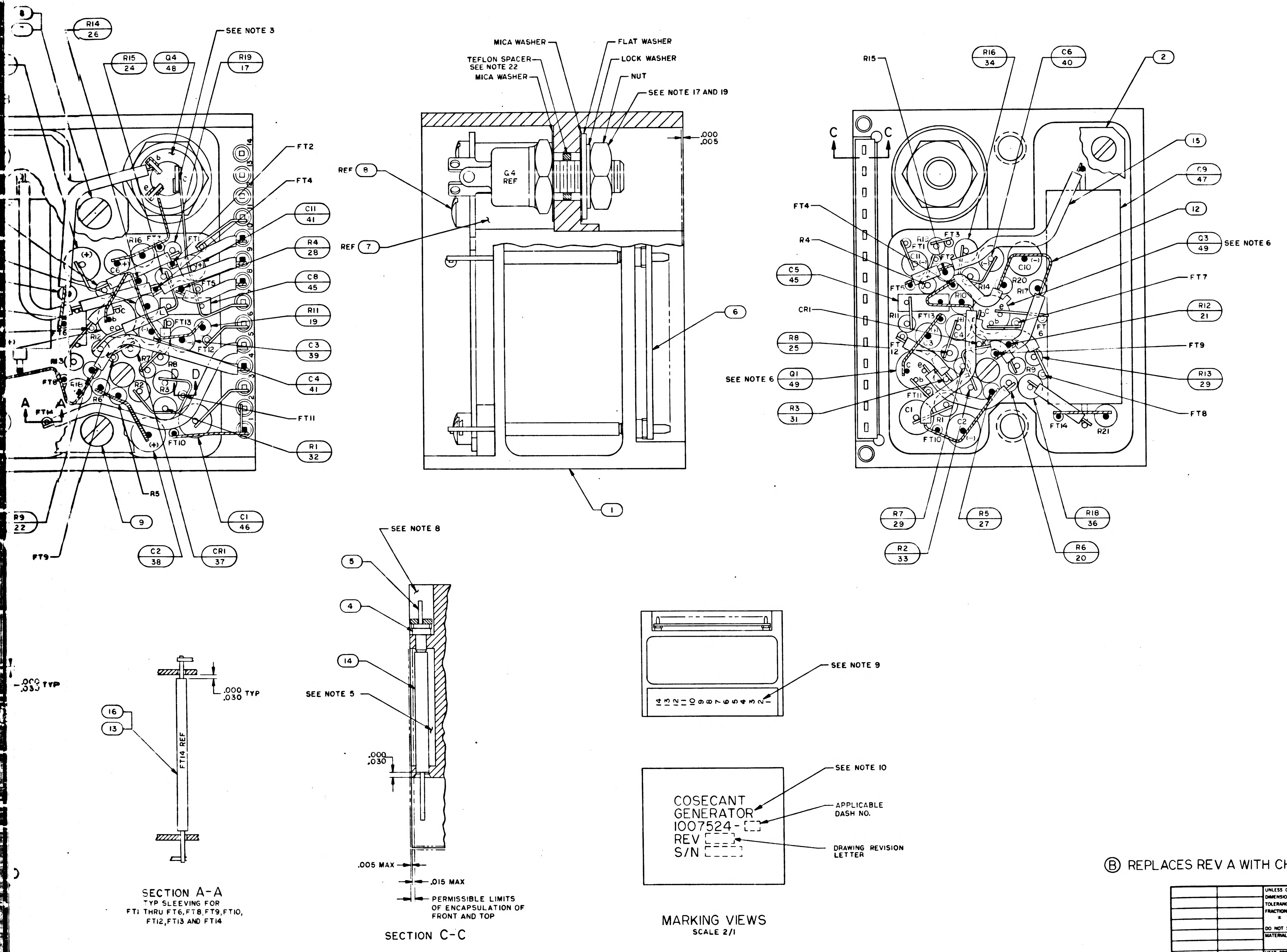
C	REVISED PER TDRR 17006	5 MAR 65	NP



SEE NOTE 3
R14 26
R15 24
Q4 48
R19 17
FT2
FT4
C11 41
R4 28
C8 45
R11 19
C3 39
C4 41
FT11
R1 32
C1 46
R5
9
C2 38
CR1 37
R9 22
FT9
A A
FT14
MICA WASHER
TEFLON SPACER SEE NOTE 22
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
SEE NOTE 17 AND 19
.000 .005
REF 8
REF 7
Q4 REF
6
1
R15
R16 34
C6 40
2
15
C9 47
12
Q3 49
SEE NOTE 6
FT7
R12 21
FT9
R13 29
FT8
FT4
R4
C5 45
CR1
R8 25
SEE NOTE 6
Q1 49
R3 31
R7 29
R5 27
R18 36
R2 33
R6 20
C C
SEE NOTE 8
5
4
14
SEE NOTE 5
.000 .030
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION OF FRONT AND TOP
SECTION C-C
16
13
FT14 REF
.000 TYP .030
.000 .033 TYP
SECTION A-A
TYP SLEEVING FOR FT1 THRU FT6,FT8,FT9,FT10, FT12,FT13 AND FT14
SEE NOTE 9
14 13 12 11 10 9 8 7 6 5 4 3 2 1
COSECANT GENERATOR
1007524-
REV
S/N
SEE NOTE 10
APPLICABLE DASH NO.
DRAWING REVISION LETTER
MARKING VIEWS
SCALE 2/1

Ⓑ REPLACES REV A WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
☒	1009509	SCHEMATIC	REF
3	1010397-1	TRANSISTOR	49
1	1010269-1	TRANSISTOR	48
1	1010375-66	CAPACITOR	47
1	1010375-12	CAPACITOR	46
2	1010359-27	CAPACITOR	45
1	1010359-11	CAPACITOR	44
1	1006755-134	CAPACITOR	43
1	1006755-77	CAPACITOR	42
2	1006755-69	CAPACITOR	41
1	1006755-65	CAPACITOR	40
1	1006755-45	CAPACITOR	39
1	1006755-20	CAPACITOR	38
1	1010372-24	DIODE	37
1	1010368-11	RESISTOR	36
1	1010364-757	RESISTOR	35
1	1010364-749	RESISTOR	34
1	1010364-727	RESISTOR	33
1	1010364-666	RESISTOR	32
1	1010364-521	RESISTOR	31
1	1010364-93	RESISTOR	30
2	1006750-84	RESISTOR	29
1	1006750-77	RESISTOR	28
1	1006750-72	RESISTOR	27
1	1006750-70	RESISTOR	26
1	1006750-69	RESISTOR	25
1	1006750-64	RESISTOR	24
1	1006750-56	RESISTOR	23
1	1006750-44	RESISTOR	22
1	1006750-34	RESISTOR	21
1	1006750-20	RESISTOR	20
1	1006750-19	RESISTOR	19
1	1006750-18	RESISTOR	18
1	1006750-7	RESISTOR	17
AR	1006776-22	INSULATION SLEEVING	16
AR	1006776-21	INSULATION SLEEVING	15
AR	1006776-20	INSULATION SLEEVING	14
AR	1006757-8	WIRE, ELECTRICAL	13
AR	1006757-1	WIRE, ELECTRICAL	12
4	1010485-42	SCREW, FILLISTER HD	11
2	1015135-015	SPACER	10
1	1010485-100	SCREW, FILLISTER HD	9
1	1010485-116	SCREW, FILLISTER HD	8
1	1015131	SPACER	7
1	1008540-14	GASKET, CONNECTOR MINAT	6
14	1006782-5	CONTACT, WRAPOST, MALE MINAT	5
14	1006775	INSULATOR, WRAPOST, MALE MINAT	4
1	1008599	WIRING BOARD, TOP	3
1	1008598	WIRING BOARD, BOTTOM	2
1	1007596	FRAME ASSY	1

011 LIST OF MATERIALS

1007524 C

1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN A. C. Taylor DATE 2 Feb 65
CHECKED 5FEB65
APPROVAL
APPROVAL 2/8/65
NASA APPROVAL
MIT APPROVAL W Kupfer 9 Feb 65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COSECANT GENERATOR
MODULE ASSY

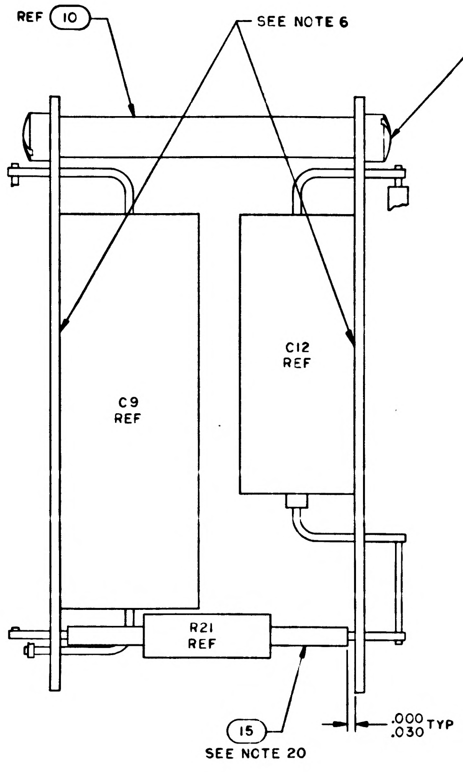
CODE IDENT NO. —— SIZE J NASA DRAWING NO. 1007524
SCALE 5/1 WT SHEET 1 OF 1

	REV	SHT
1007524	C	1

2/1007524

1007524

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.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11 REF
C9 REF
C12 REF
R21 REF
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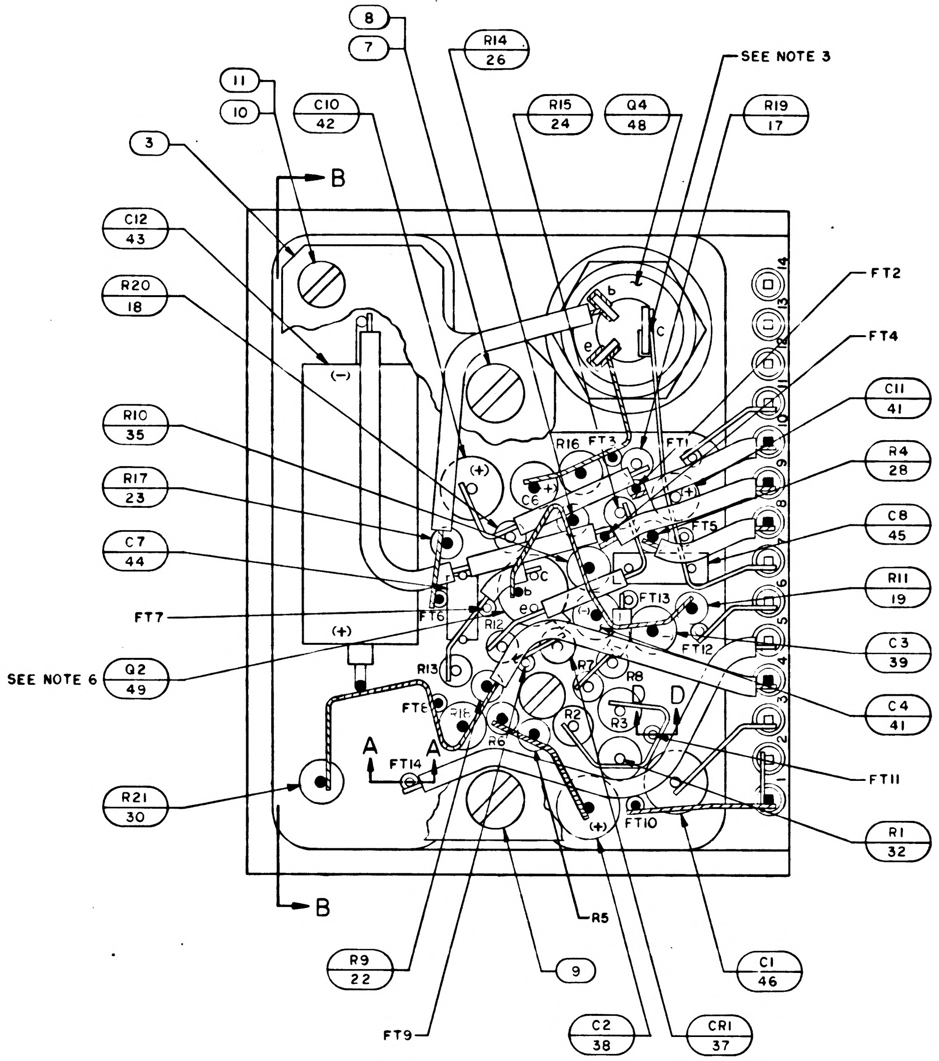
SEE NOTE 20
.000 .030 TYP

SECTION B-B
WITH FIND NO.1 REMOVED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R15 24
Q4 48
R19 17
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B
C12 43
R20 18
R10 35
R17 23
C7 44
FT7
SEE NOTE 6
Q2 49
R21 30
FT2
FT4
C11 41
R4 28
C8 45
R11 19
C3 39
C4 41
FT11
R1 32
R16
FT3
FT1
FT5
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FT12
FT6
FT14
FT10
R12
R13
R7
R8
R2
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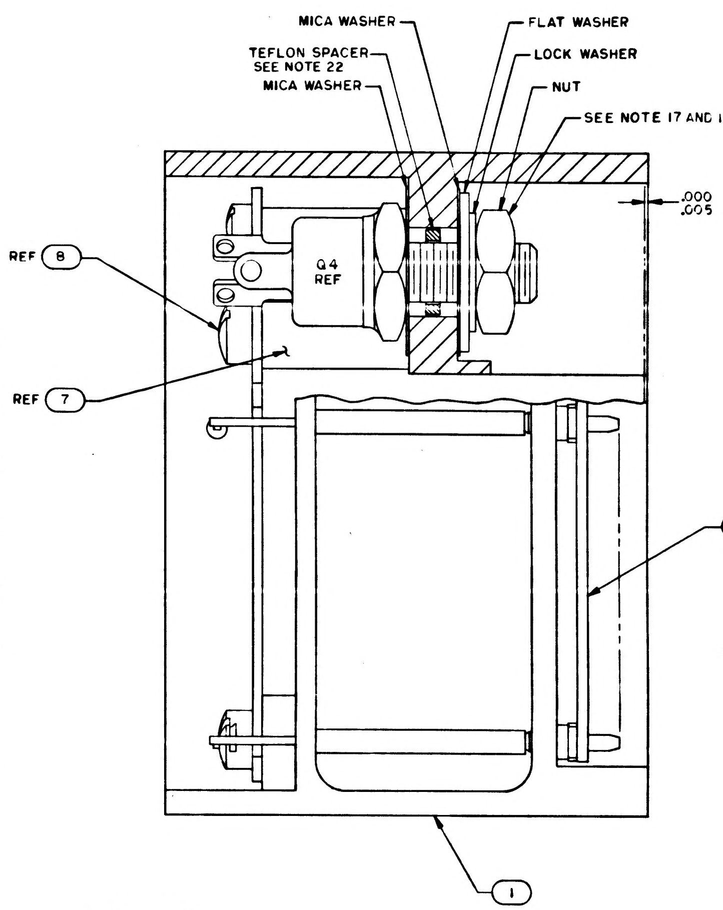
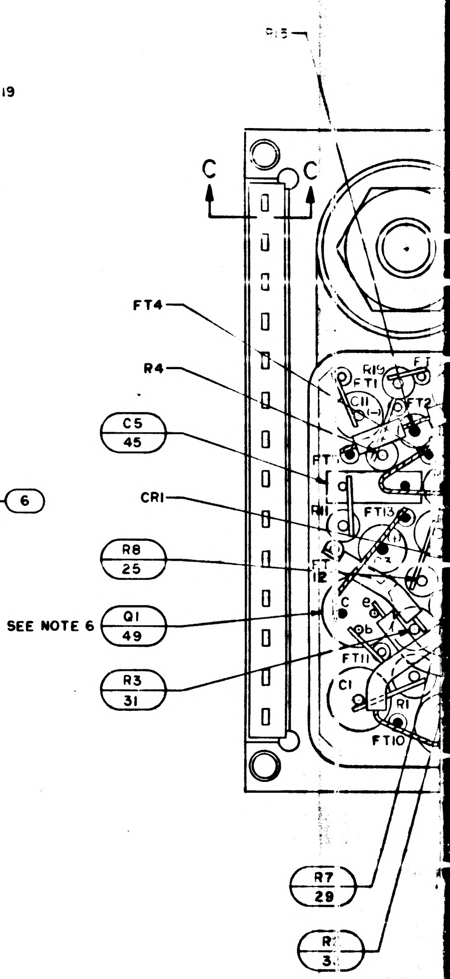
FT9
C2 38
CR1 37


MICA WASHER
TEFLON SPACER SEE NOTE 22
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
SEE NOTE 17 AND 19
.000 .005
REF 8
Q4 REF
REF 7
6
1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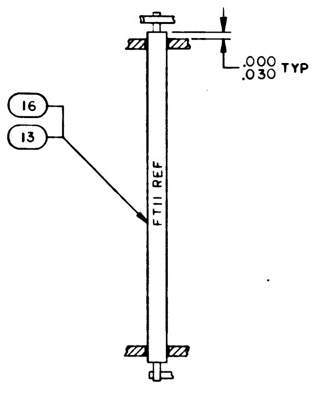
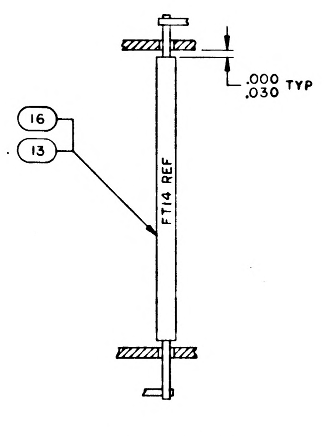
FT4
R4
C5 45
CR1
R8 25
SEE NOTE 6
Q1 49
R3 31
R7 29
FT1
FT2
FT13
FT11
FT10
C1
R1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND1002005
3. SOLDER PER ND 1002071
4. ASSEMBLE FIND NO.4 TO FIND NO.5 PER ND 1002136
5. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
6. BOND Q2 AND C12 TO FIND NO.3 AND Q1,Q3 AND C9 TO FIND NO.2 PER ND 1002004 TYPE I
7. BOND FIND NO.6 TO FIND NO.4 PER ND 1002237
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
11. AR DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
14. + DENOTES POSITIVE SIDE OF CAPACITOR
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. MOUNTING TORQUE FOR NUT OF FIND NO.48 TO BE 12-14 INCH POUNDS
18. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
19. APPLY SEALING COMPOUND MIL-S-22473 GRADE A TO NUT OF FIND NO.48
20. TYPICAL SLEEVING FOR FIND NO. 17 THRU FIND NO.37
21. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS1007524.
22. STAKE TEFLON SPACER PER ND1002009 METHOD


16
13
FT11 REF
.000 .030 TYP

SECTION D-D
TYP SLEEVING FOR
FT7 AND FT11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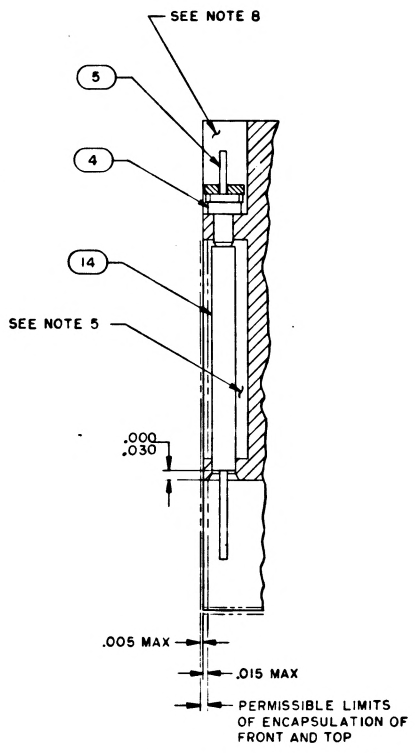
FT14 REF
.000 .030 TYP

SECTION A-A
TYP SLEEVING FOR
FT1 THRU FT6, FT8, FT9, FT10,
FT12, FT13 AND FT14


SEE NOTE 8
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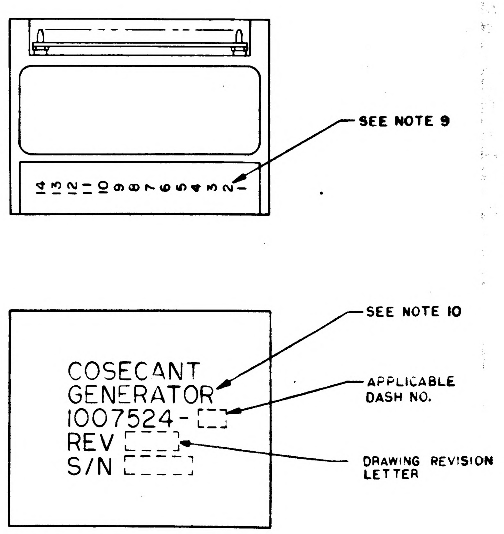
14
SEE NOTE 5
.000 .030
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION OF FRONT AND TOP

SECTION C-C


SEE NOTE 9
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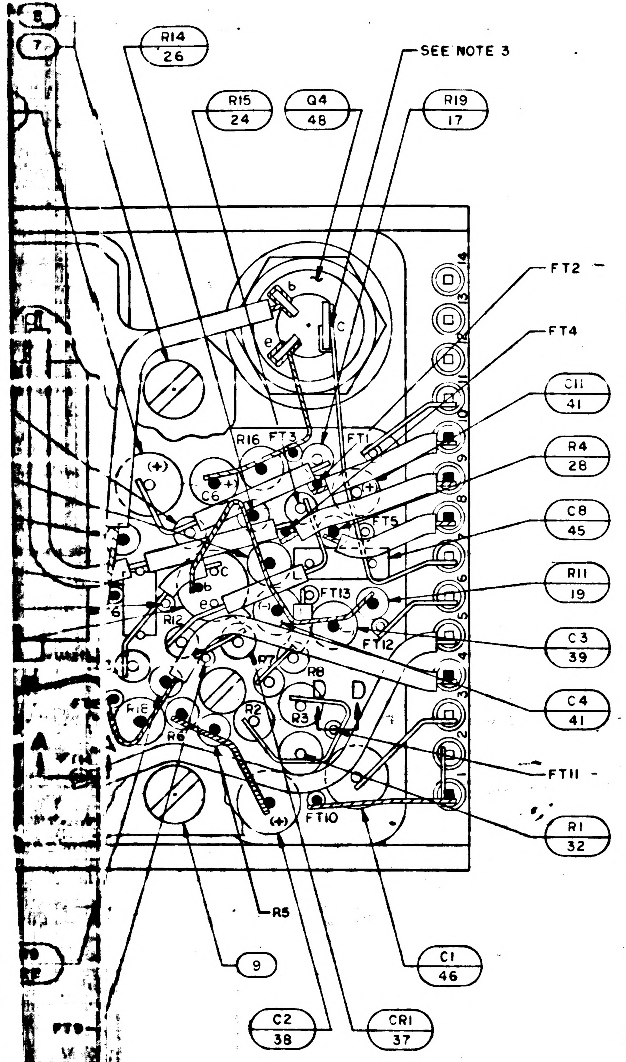
SEE NOTE 10
COSECANT
GENERATOR
1007524-
REV
S/N
APPLICABLE DASH NO.
DRAWING REVISION LETTER

MARKING VIEWS
SCALE 2/1

1007524	REV LTR C	SHT 1

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 16330	5FEB65	WK
C	REVISED PER TDRR 17006	5 MAR 65	JWP
D	REVISED PER TDRR 19411	2JUN65	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R15 24
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SEE NOTE 3
R19 17
FT2
FT4
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R4 28
C8 45
R11 19
C3 39
C4 41
FT11
R1 32
C1 46
R5
9
C2 38
CR1 37
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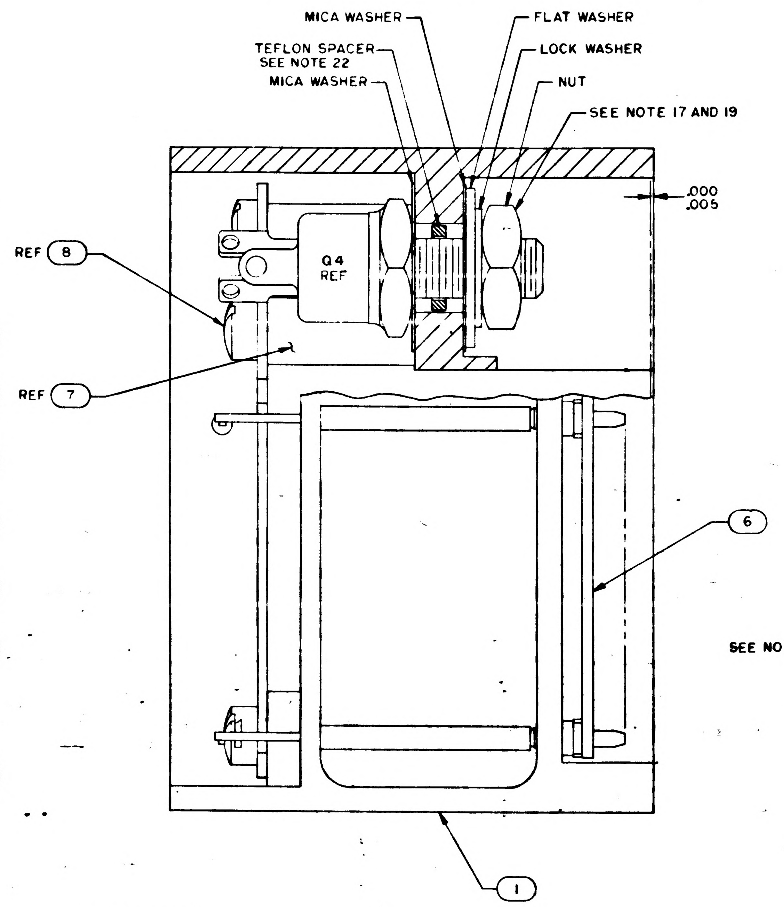
MICA WASHER
TEFLON SPACER
SEE NOTE 22
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
SEE NOTE 17 AND 19
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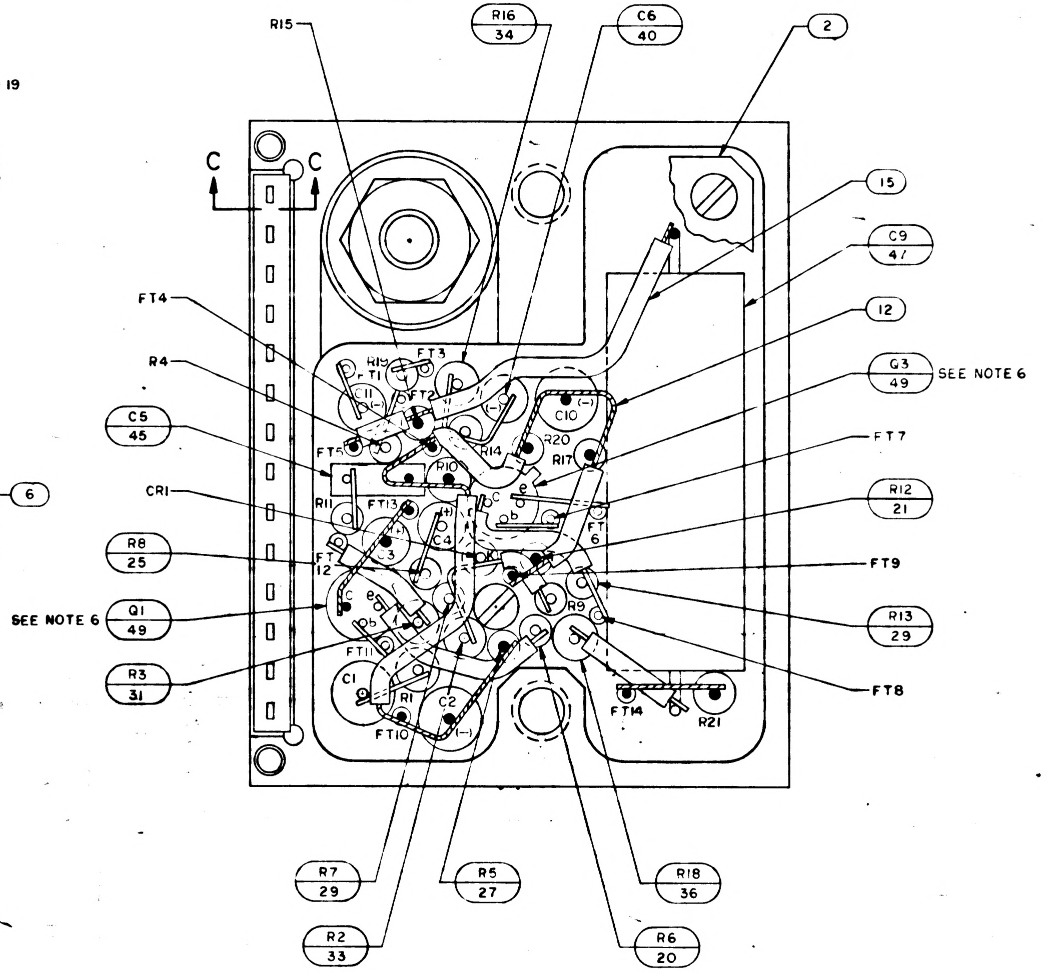
REF 8
REF 7
Q4
REF
6
1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FT4
R4
C5 45
CR1
R8 25
SEE NOTE 6
Q1 49
R3 31
R7 29
R2 33
R5 27
R18 36
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C10
R20
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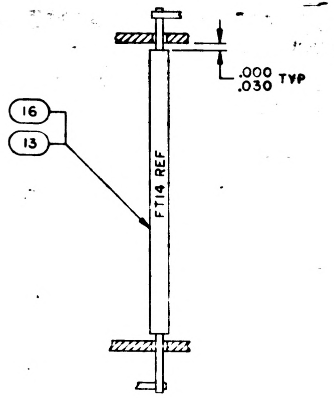
R14
R10
R9


16
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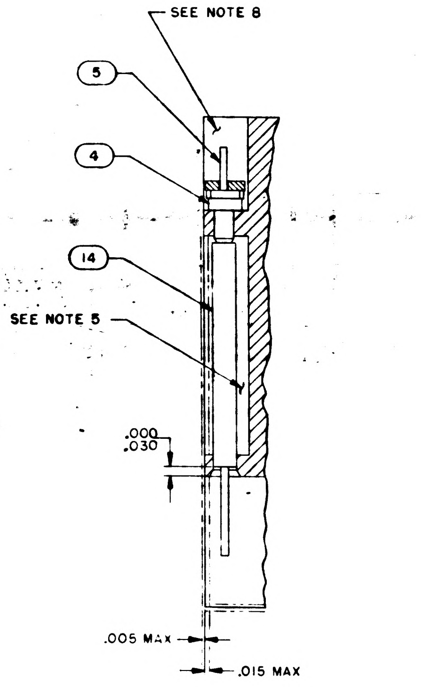
FT14 REF

SECTION A-A
TYP SLEEVING FOR
FT1 THRU FT6, FT8, FT9, FT10,
FT12, FT13 AND FT14


SEE NOTE 8
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SEE NOTE 5
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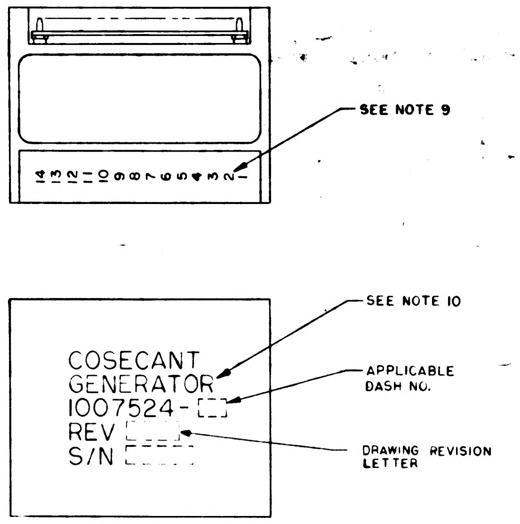
.005 MAX
.015 MAX

PERMISSIBLE LIMITS OF ENCAPSULATION OF FRONT AND TOP

SECTION C-C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SEE NOTE 9
COSECANT
GENERATOR
1007524-
REV
S/N
SEE NOTE 10
APPLICABLE DASH NO.
DRAWING REVISION LETTER

MARKING VIEWS
SCALE 2/1

Ⓑ REPLACES REV A WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
X	1009509	SCHEMATIC	REF
3	1010397-1	TRANSISTOR	49
1	1010269-1	TRANSISTOR	48
1	1010375-66	CAPACITOR	47
1	1010375-12	CAPACITOR	46
2	1010359-27	CAPACITOR	45
1	1010359-11	CAPACITOR	44
1	1006755-134	CAPACITOR	43
1	1006755-77	CAPACITOR	42
2	1006755-69	CAPACITOR	41
1	1006755-65	CAPACITOR	40
1	1006755-45	CAPACITOR	39
1	1006755-20	CAPACITOR	38
1	1010372-24	DIODE	37
1	1010368-11	RESISTOR	36
1	1010364-757	RESISTOR	35
1	1010364-749	RESISTOR	34
1	1010364-727	RESISTOR	33
1	1010364-666	RESISTOR	32
1	1010364-521	RESISTOR	31
1	1010364-93	RESISTOR	30
2	1006750-84	RESISTOR	29
1	1006750-77	RESISTOR	28
1	1006750-72	RESISTOR	27
1	1006750-70	RESISTOR	26
1	1006750-69	RESISTOR	25
1	1006750-64	RESISTOR	24
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1	1006750-44	RESISTOR	22
1	1006750-34	RESISTOR	21
1	1006750-20	RESISTOR	20
1	1006750-19	RESISTOR	19
1	1006750-18	RESISTOR	18
1	1006750-7	RESISTOR	17
AR	1006776-22	INSULATION SLEEVING	16
AR	1006776-21	INSULATION SLEEVING	15
AR	1006776-20	INSULATION SLEEVING	14
AR	1006757-8	WIRE, ELECTRICAL	13
AR	1006757-1	WIRE, ELECTRICAL	12
4	1010485-42	SCREW, FILLISTER HD	11
2	1015135-015	SPACER	10
1	1010485-100	SCREW, FILLISTER HD	9
1	1010485-116	SCREW, FILLISTER HD	8
1	1015131	SPACER	7
1	1008540-14	GASKET, CONNECTOR MINAT	6
14	1006782-5	CONTACT, WRAPOST, MALE MINAT	5
14	1006775	INSULATOR, WRAPOST, MALE MINAT	4
1	1008599	WIRING BOARD, TOP	3
1	1008598	WIRING BOARD, BOTTOM	2
1	1007596	FRAME ASSY	1

011 LIST OF MATERIALS

1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN R. Taylor DATE
CHECKED 5FEB65
APPROVAL
APPROVAL 2/8/65
NASA APPROVAL
MIT APPROVAL W. Kupfer 9Feb65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COSECANT GENERATOR
MODULE ASSY

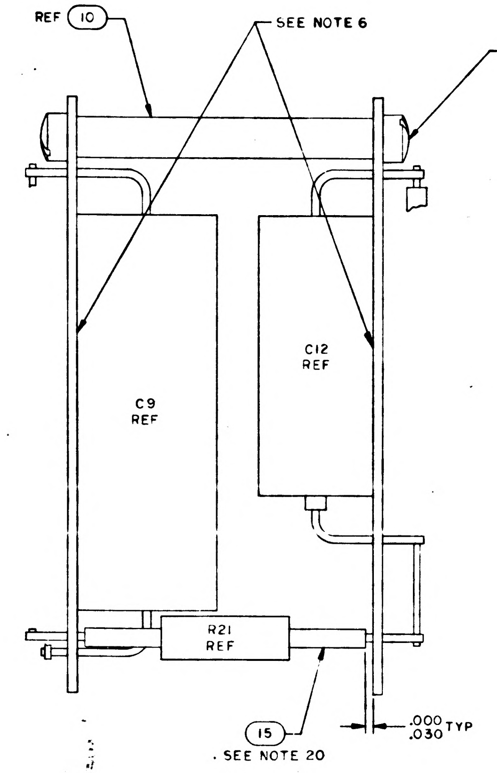
CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007524
SCALE 5/1
WT
SHEET 1 OF 1

1007524 D

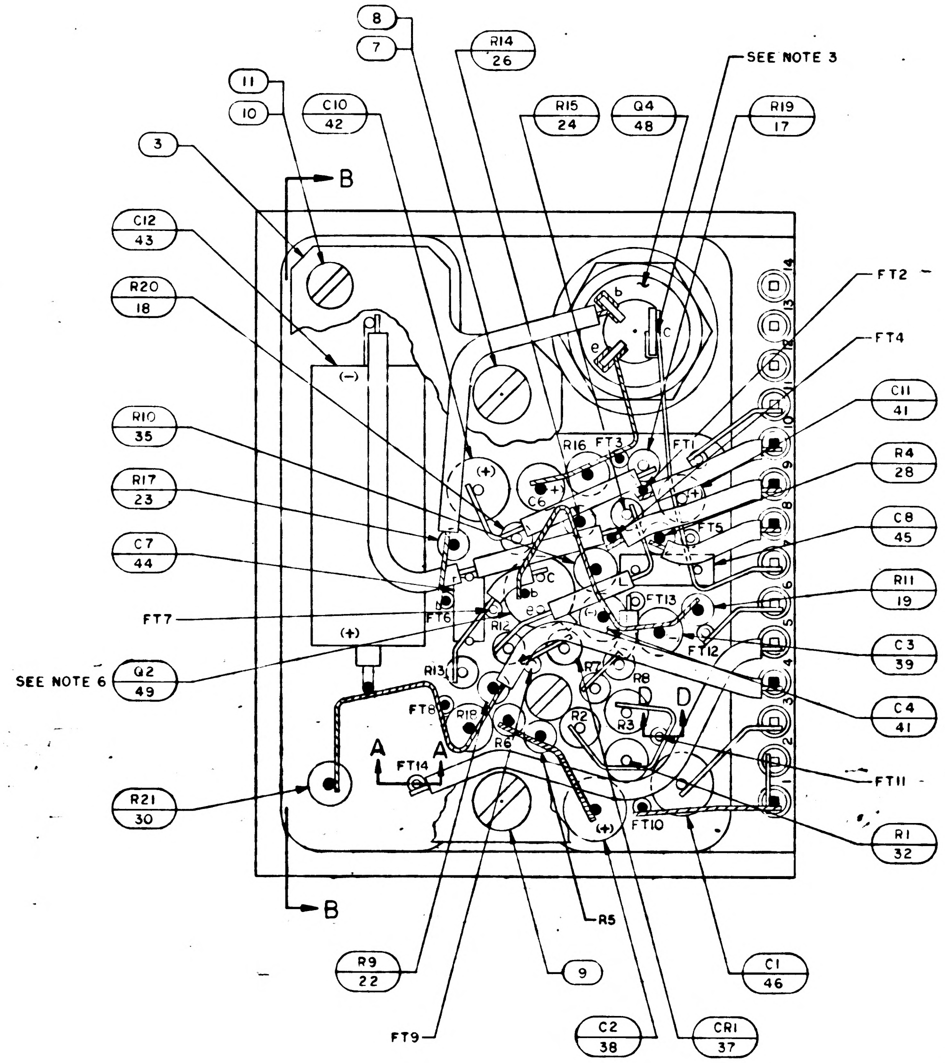
1007524 REV LTR D SHT 1

2H

27 1007524


REF ⑩
SEE NOTE 6
⑪ REF
C9 REF
C12 REF
R21 REF
⑮
SEE NOTE 20
.000
.030 TYP

SECTION B-B
WITH FIND NO.1 REMOVED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11
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Q4 48
R19 17
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B
C12 43
R20 18
R10 35
R17 23
C7 44
FT7
SEE NOTE 6
Q2 49
R21 30
FT2
FT4
C11 41
R4 28
C8 45
R11 19
C3 39
C4 41
FT11
R1 32
R16
FT3
FT1
FT5
C6
FT6
R12
FT13
FT12
R13
R7
R8
FT8
R18
R6
R2
R3
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FT10
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FT9
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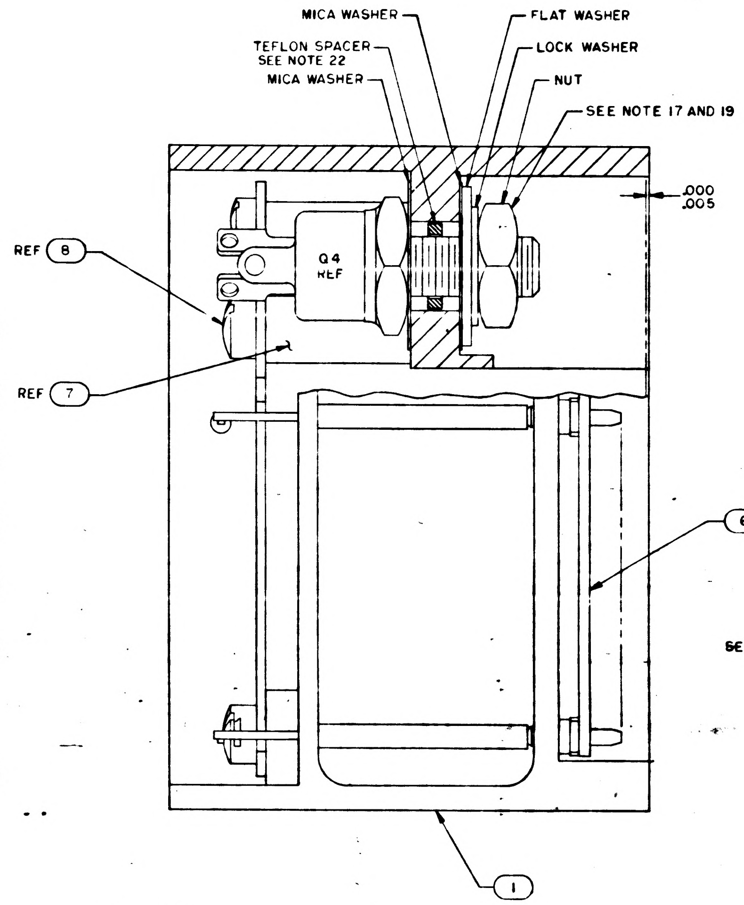
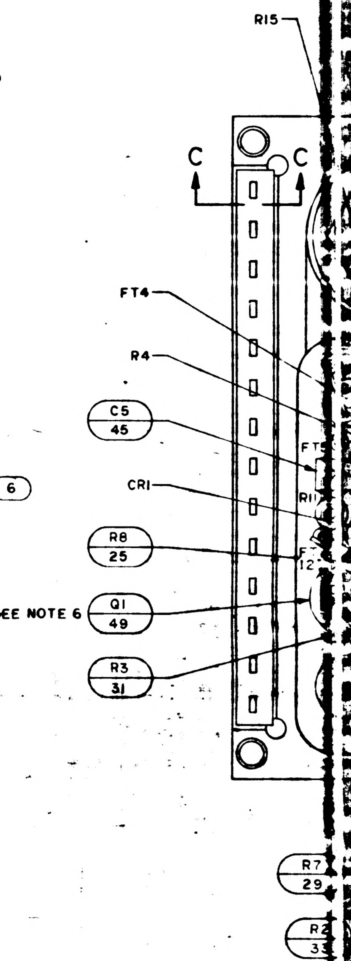
CR1 37


MICA WASHER
FLAT WASHER
TEFLON SPACER
SEE NOTE 22
LOCK WASHER
MICA WASHER
NUT
SEE NOTE 17 AND 19
.000
.005
REF ⑧
Q4 REF
REF ⑦
⑥
①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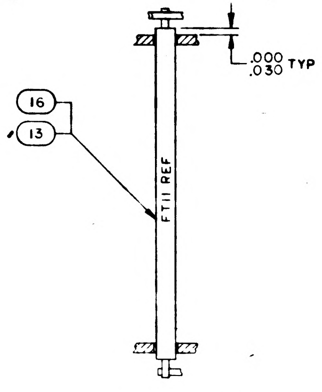
FT4
R4
C5 45
CR1
R8 25
SEE NOTE 6
Q1 49
R3 31
R7 29
R2 33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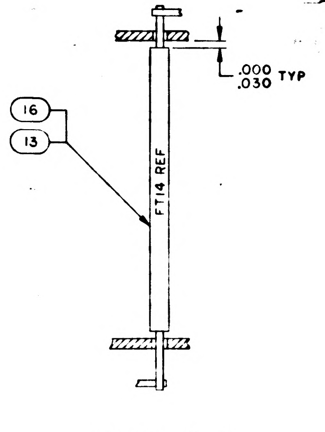
.030 TYP
16
13
FT11 REF

SECTION D-D
TYP SLEEVING FOR
FT7 AND FT11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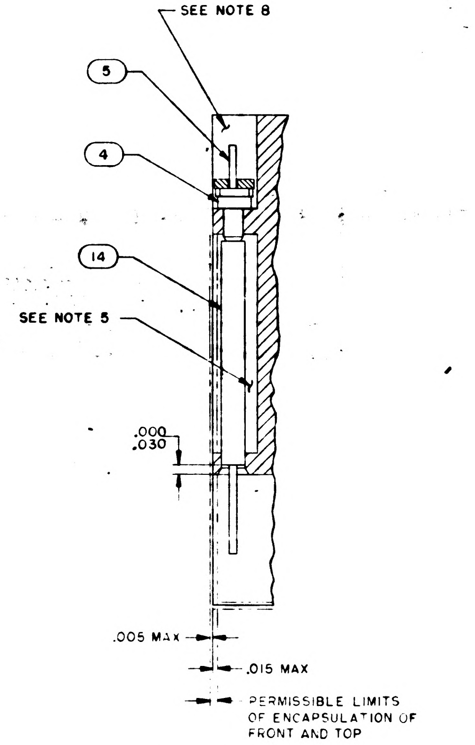
16
13
FT14 REF

SECTION A-A
TYP SLEEVING FOR
FT1 THRU FT6, FT8, FT9, FT10,
FT12, FT13 AND FT14


SEE NOTE 8
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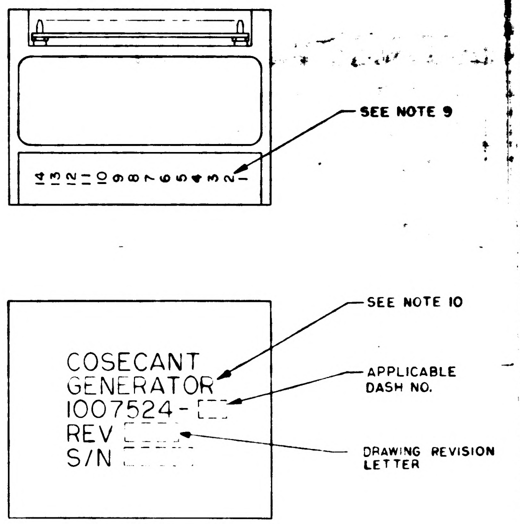
.030
.005 MAX
.015 MAX
PERMISSIBLE LIMITS
OF ENCAPSULATION OF
FRONT AND TOP

SECTION C-C

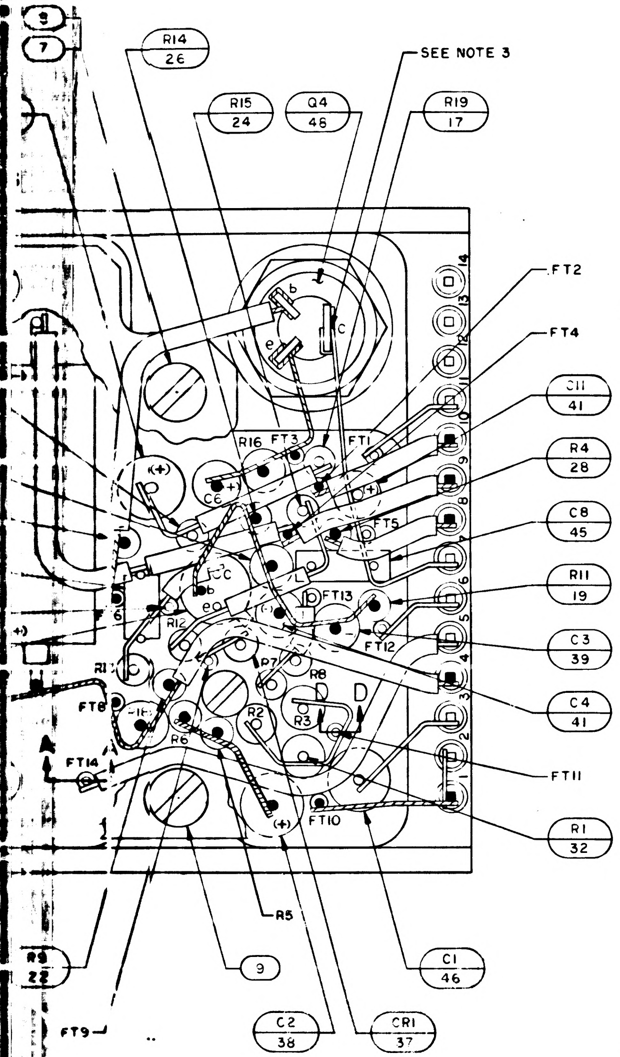

SEE NOTE 9
14 13 12 11 10 9 8 7 6 5 4 3 2 1
SEE NOTE 10
COSECANT
GENERATOR
1007524-
REV
S/N
APPLICABLE
DASH NO.
DRAWING REVISION
LETTER

MARKING VIEWS
SCALE 2/1

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND1002005
3. SOLDER PER ND 1002071
4. ASSEMBLE FIND NO.4 TO FIND NO.5 PER ND 1002136
5. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
6. BOND Q2 AND C12 TO FIND NO.3 AND Q1, Q3 AND C9
TO FIND NO.2 PER ND 1002004 TYPE I
7. BOND FIND NO.6 TO FIND NO.4 PER ND 1002237
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN.
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER
ND 1002023. CENTRALIZE AS SHOWN
11. AR DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
14. + DENOTES POSITIVE SIDE OF CAPACITOR
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. MOUNTING TORQUE FOR NUT OF FIND NO.48 TO BE 12-14 INCH POUNDS
18. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE
WITH ND 1002069
19. APPLY SEALING COMPOUND MIL-S-22473 GRADE A TO NUT OF FIND NO. 48
20. TYPICAL SLEEVING FOR FIND NO. 17 THRU FIND NO. 37
21. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL
MEET ALL OF THE REQUIREMENTS OF PS 1007524.
22. STAKE TEFLON SPACER PER ND 1002009 METHOD
23. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL.
APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH
±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES.
USE ADHESIVE PER ND1002187 TYPE II.

1007524	REV LTR	SHT
	D	1

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 16330	5FEB65	WK
C	REVISED PER TDRR 17006	5 MAR 65	JWP
D	REVISED PER TDRR 19411	2 JUN 65	[illegible]
E	REVISED PER TDRR 19486	[illegible] 65	WJK



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R14 26
R15 24
Q4 46
SEE NOTE 3
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FT2
FT4
C11 41
R4 28
C8 45
R11 19
C3 39
C4 41
FT11
R1 32
R16
FT3
FT1
C6
FT5
FT13
FT12
R12
R7
R8
R2
R3
R6
FT8
FT14
FT10
R5
9
C1 46
R9 22
FT9
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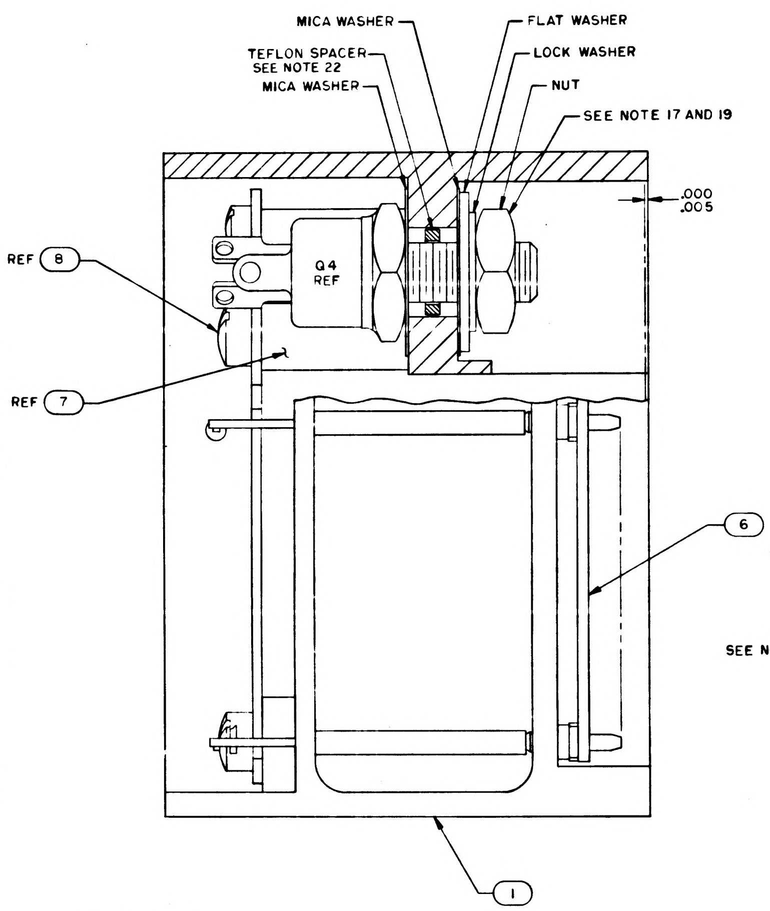

MICA WASHER
TEFLON SPACER
SEE NOTE 22
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
SEE NOTE 17 AND 19
.000
.005
REF 8
Q4
REF
REF 7
6
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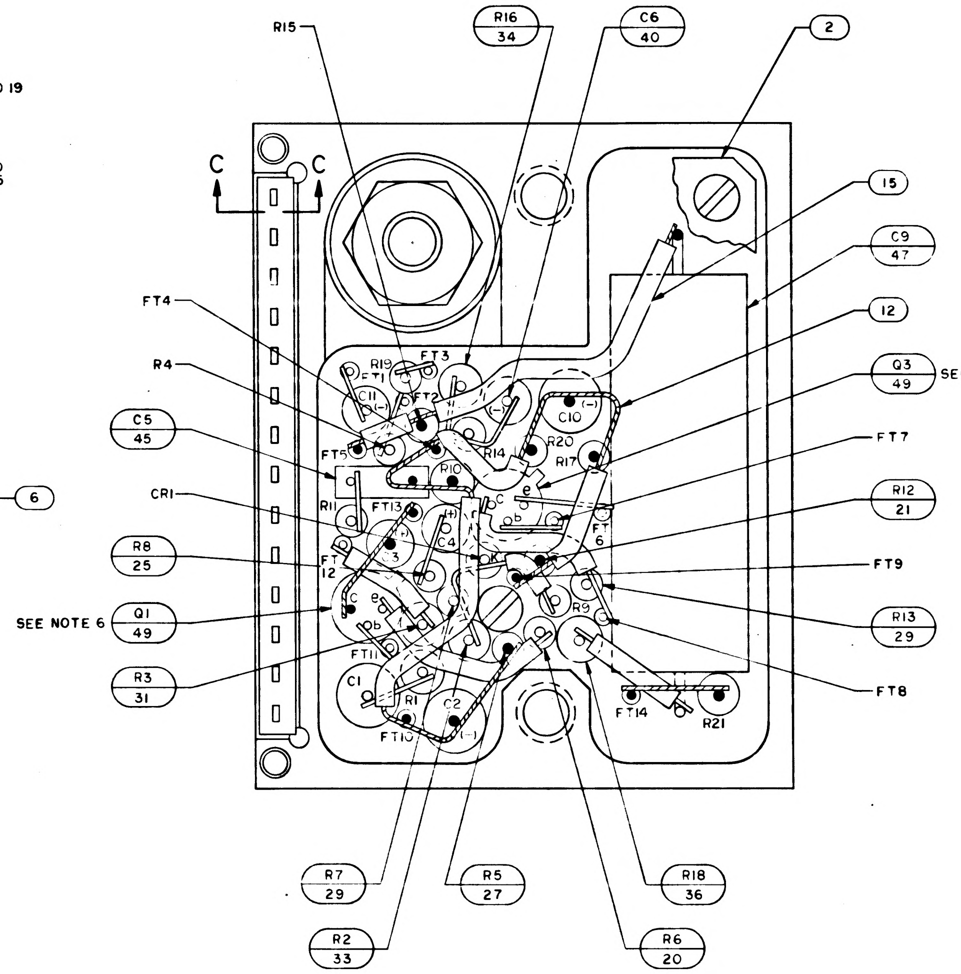

R15
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2
C
C
15
C9 47
12
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SEE NOTE 6
FT7
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R13 29
FT8
FT4
R4
C5 45
CR1
R8 25
SEE NOTE 6
Q1 49
R3 31
R19
FT1
FT3
FT2
C11
FT5
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R14
C10
R20
R17
R11
FT13
C4
C3
FT 12
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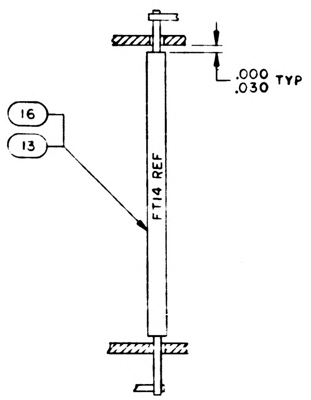
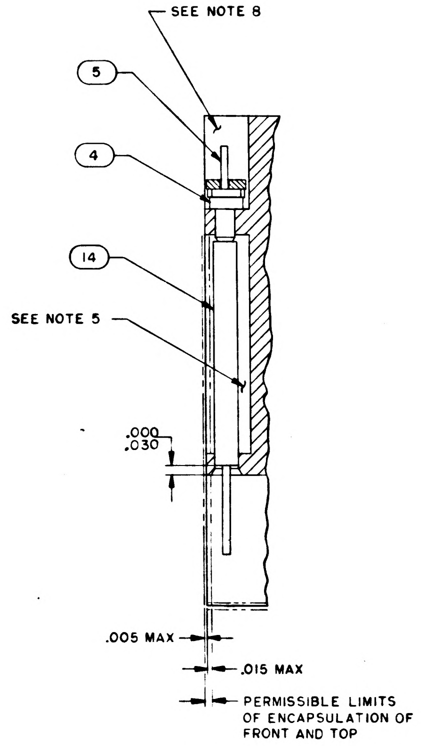
R5 27
R18 36
R6 20



16
13
FT14 REF
.000
.030 TYP

SECTION A-A
TYP SLEEVING FOR
FT1 THRU FT6, FT8 FT9, FT10,
FT12, FT13 AND FT14



SEE NOTE 8
5
4
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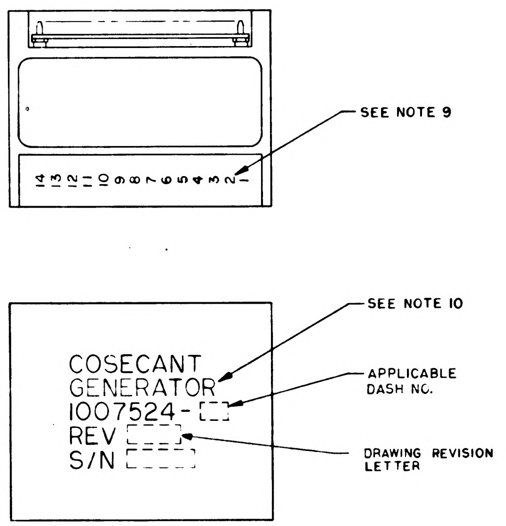
SEE NOTE 5
.000
.030
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION OF FRONT AND TOP

SECTION C-C



SEE NOTE 9
14 13 12 11 10 9 8 7 6 5 4 3 2 1
COSECANT
GENERATOR
1007524-
REV
S/N
SEE NOTE 10
APPLICABLE DASH NO.
DRAWING REVISION LETTER

MARKING VIEWS
SCALE 2/1

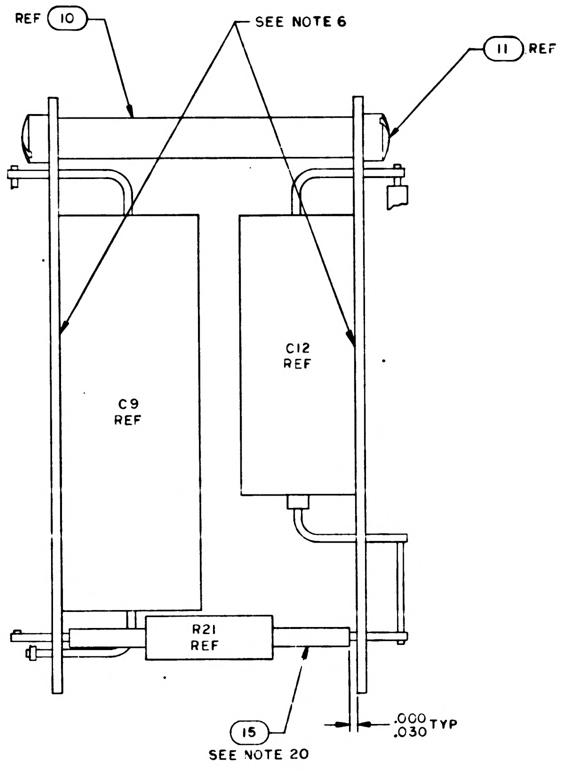
Ⓑ REPLACES REV A WITH CHANGE

⊠	1009509	SCHEMATIC	REF
3	1010397-1	TRANSISTOR	49
1	1010269-1	TRANSISTOR	48
1	1010375-66	CAPACITOR	47
1	1010375-12	CAPACITOR	46
2	1010359-27	CAPACITOR	45
1	1010359-11	CAPACITOR	44
1	1006755-134	CAPACITOR	43
1	1006755-77	CAPACITOR	42
2	1006755-69	CAPACITOR	41
1	1006755-65	CAPACITOR	40
1	1006755-45	CAPACITOR	39
1	1006755-20	CAPACITOR	38
1	1010372-24	DIODE	37
1	1010368-11	RESISTOR	36
1	1010364-757	RESISTOR	35
1	1010364-749	RESISTOR	34
1	1010364-727	RESISTOR	33
1	1010364-666	RESISTOR	32
1	1010364-521	RESISTOR	31
1	1010364-93	RESISTOR	30
2	1006750-84	RESISTOR	29
1	1006750-77	RESISTOR	28
1	1006750-72	RESISTOR	27
1	1006750-70	RESISTOR	26
1	1006750-69	RESISTOR	25
1	1006750-64	RESISTOR	24
1	1006750-56	RESISTOR	23
1	1006750-44	RESISTOR	22
1	1006750-34	RESISTOR	21
1	1006750-20	RESISTOR	20
1	1006750-19	RESISTOR	19
1	1006750-18	RESISTOR	18
1	1006750-7	RESISTOR	17
AR	1006776-22	INSULATION SLEEVING	16
AR	1006776-21	INSULATION SLEEVING	15
AR	1006776-20	INSULATION SLEEVING	14
AR	1006757-8	WIRE, ELECTRICAL	13
AR	1006757-1	WIRE, ELECTRICAL	12
4	1010485 - 42	SCREW, FILLISTER HD	11
2	1015135-015	SPACER	10
1	1010485-100	SCREW, FILLISTER HD	9
1	1010485-116	SCREW, FILLISTER HD	8
1	1015131	SPACER	7
1	1008540-14	GASKET, CONNECTOR MINAT	6
14	1006782-5	CONTACT, WRAPOST, MALE MINAT	5
14	1006775	INSULATOR, WRAPOST, MALE MINAT	4
1	1008599	WIRING BOARD, TOP	3
1	1008598	WIRING BOARD, BOTTOM	2
1	1007596	FRAME ASSY	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
011	LIST OF MATERIALS		

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ± DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB CAMBRIDGE MASS DWG NO CONTRACT	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
		MATERIAL	DRAWN R. C. Taylor DATE [illegible] 65 CHECKED [illegible] 5FEB65 APPROVAL APPROVAL [illegible] 2/8/65	COSECANT GENERATOR MODULE ASSY
1007579		HEAT TREATMENT	NASA APPROVAL	CODE IDENT NO 80230 · SIZE J · NASA DRAWING NO 1007524
NEXT ASSY	USED ON	FINAL FINISH	MIT APPROVAL W Kupfer 9Feb65	SCALE 5/1 · WT · SHEET 1 OF 1
APPLICATION				

1007524

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.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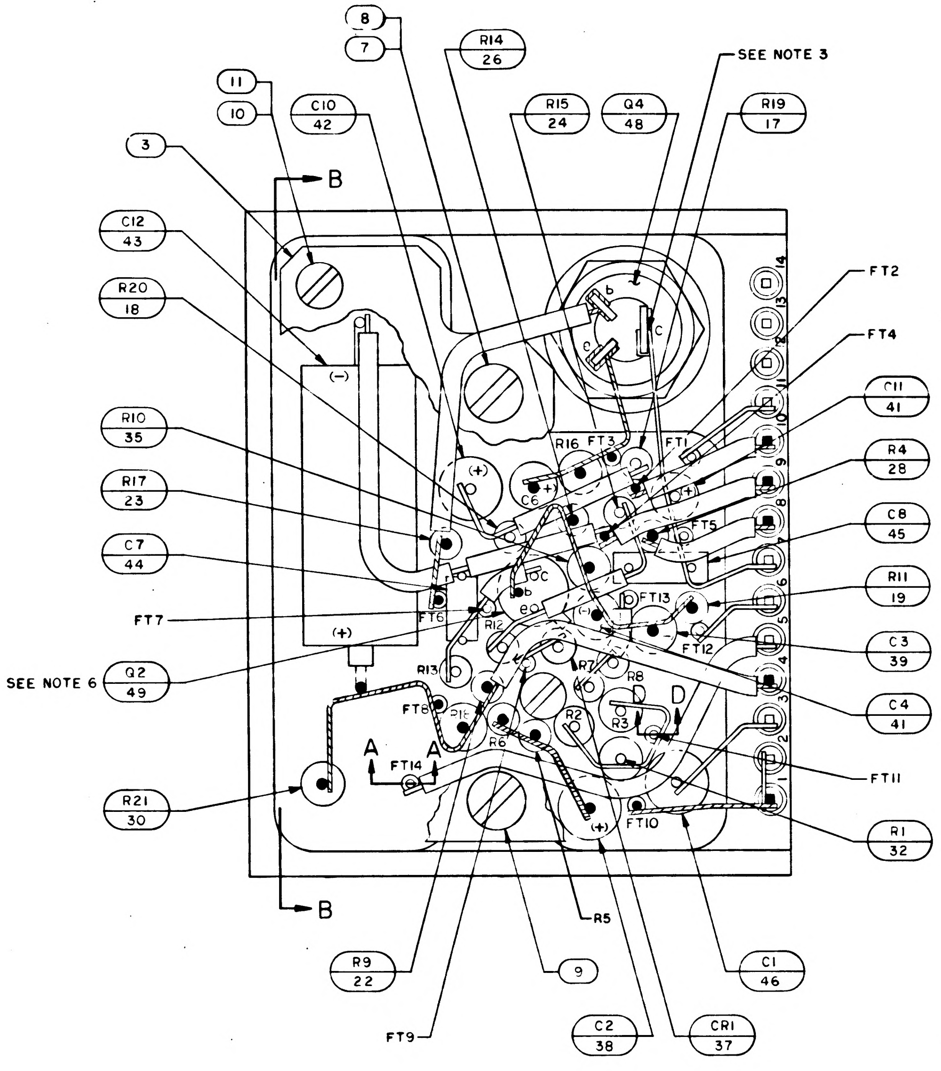
SEE NOTE 20
.000
.030 TYP

SECTION B-B
WITH FIND NO.1 REMOVED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C11
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R10
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C8
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C7
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R11
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FT7
C3
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SEE NOTE 6
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C4
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FT14
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B
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FT8
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R16
C6
D
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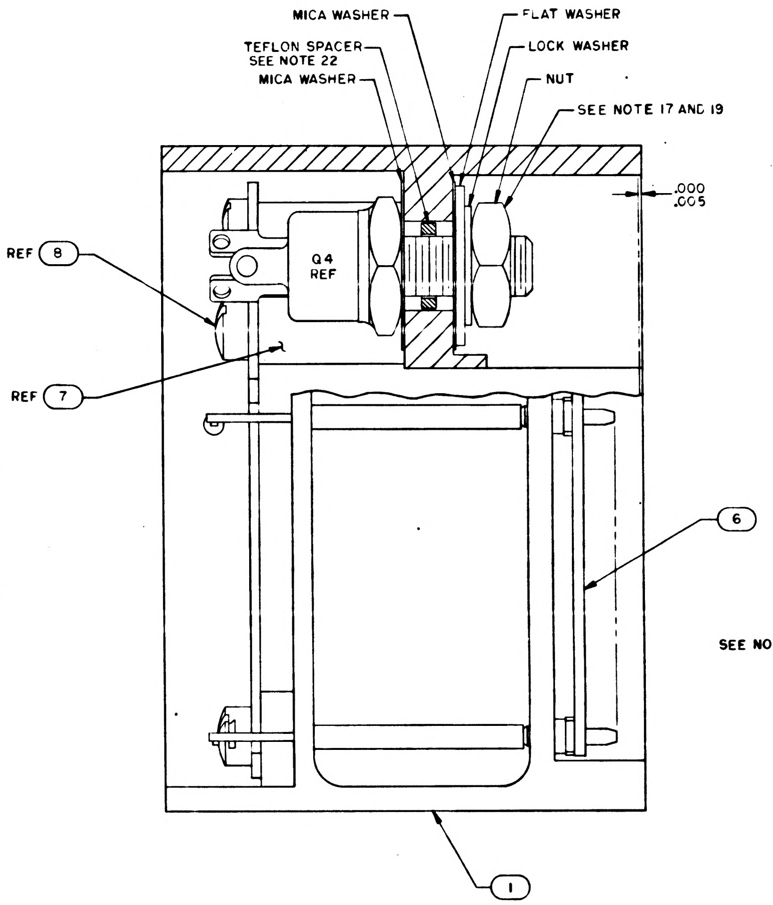
MICA WASHER
FLAT WASHER
TEFLON SPACER
SEE NOTE 22
LOCK WASHER
MICA WASHER
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SEE NOTE 17 AND 19
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REF 8
Q4
REF
REF 7
6
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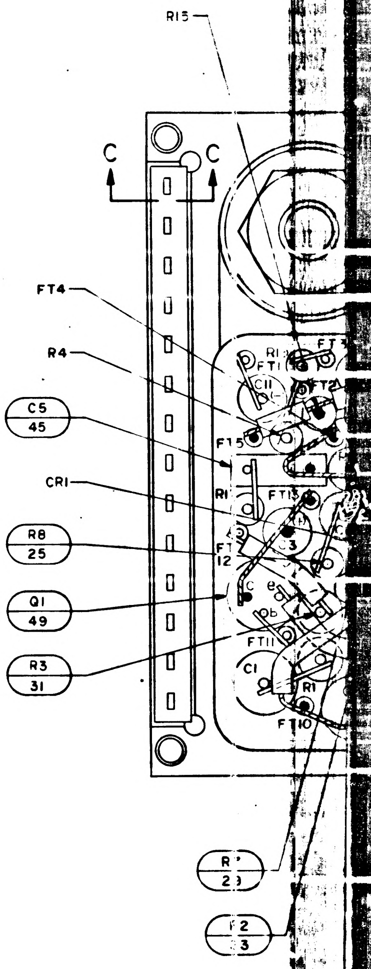
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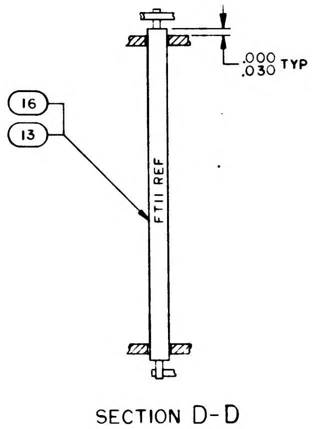
FT11
FT13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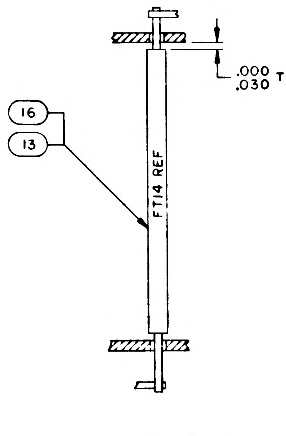
FT11 REF

SECTION D-D
TYP SLEEVING FOR
FT7 AND FT11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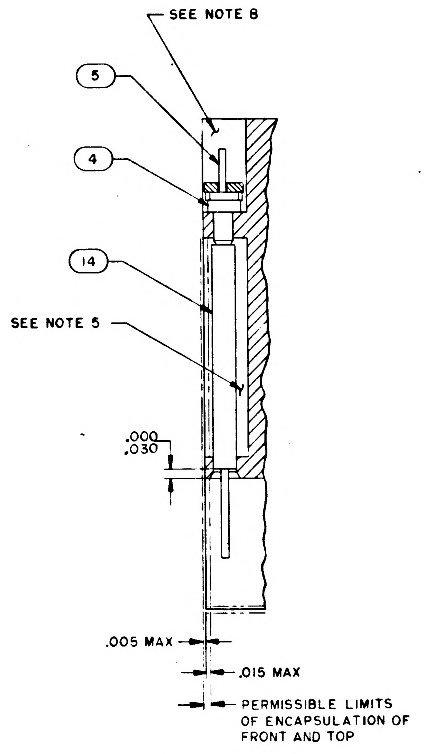
FT14 REF

SECTION A-A
TYP SLEEVING FOR
FT1 THRU FT6, FT8, FT9, FT10,
FT12, FT13 AND FT14


SEE NOTE 8
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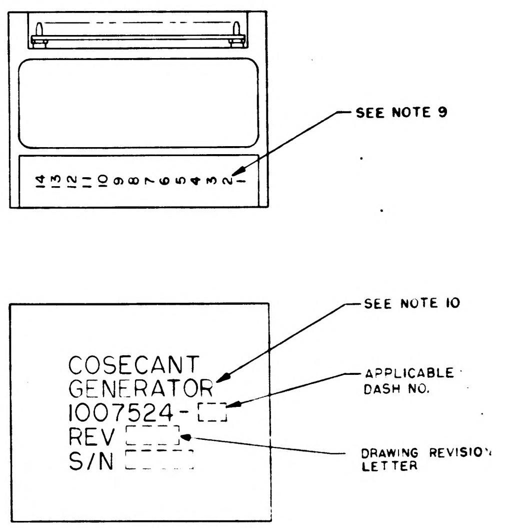
.005 MAX
.015 MAX
PERMISSIBLE LIMITS
OF ENCAPSULATION OF
FRONT AND TOP

SECTION C-C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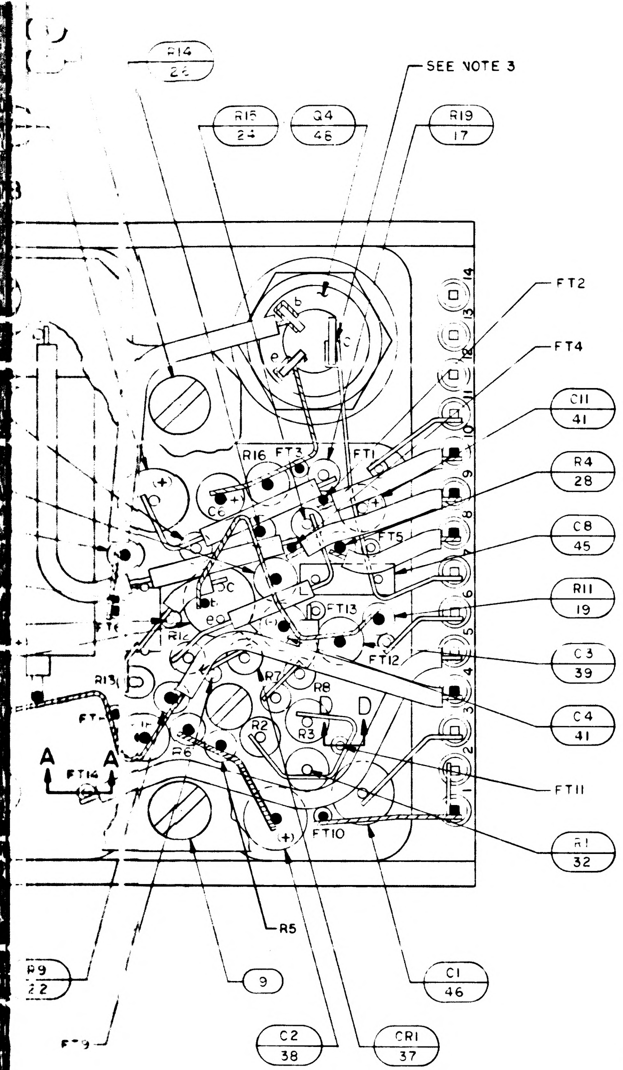
SEE NOTE 9
SEE NOTE 10
COSECANT
GENERATOR
1007524-
REV
S/N
APPLICABLE
DASH NO.
DRAWING REVISION
LETTER

MARKING VIEWS
SCALE 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND1002005
3. SOLDER PER ND 1002071
4. ASSEMBLE FIND NO.4 TO FIND NO.5 PER ND 1002136
5. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
6. BOND Q2 AND C12 TO FIND NO.3 AND Q1, Q3 AND C9 TO FIND NO.2 PER ND 1002004 TYPE I
7. BOND FIND NO.6 TO FIND NO.4 PER ND 1002237
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
11. AR DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
14. + DENOTES POSITIVE SIDE OF CAPACITOR
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. MOUNTING TORQUE FOR NUT OF FIND NO.48 TO BE 12-14 INCH POUNDS
18. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
19. APPLY SEALING COMPOUND MIL-S-22473 GRADE A TO NUT OF FIND NO.48
20. TYPICAL SLEEVING FOR FIND NO. 17 THRU FIND NO. 37
21. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007524.
22. STAKE TEFLON SPACER PER ND 1002009 METHOD
23. ~~CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND1002187 TYPE II.~~
24. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
25. EXCEPT FOR THE HELICOIL MOUNTING SURFACES, PAINT ALL SURFACES PER ND 1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 16330	5FEB65	WK
C	REVISED PER TDRR 17006	5 MAR 65	JWP
D	REVISED PER TDRR 19411	[illegible] 65	[illegible]
E	REVISED PER TDRR 19486	[illegible] 65	WJK
F	REVISED PER TDRR 20143	9 [illegible] 65	DKD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R4
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C3
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C4
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FT11
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CR1
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C2
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R5
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FT14
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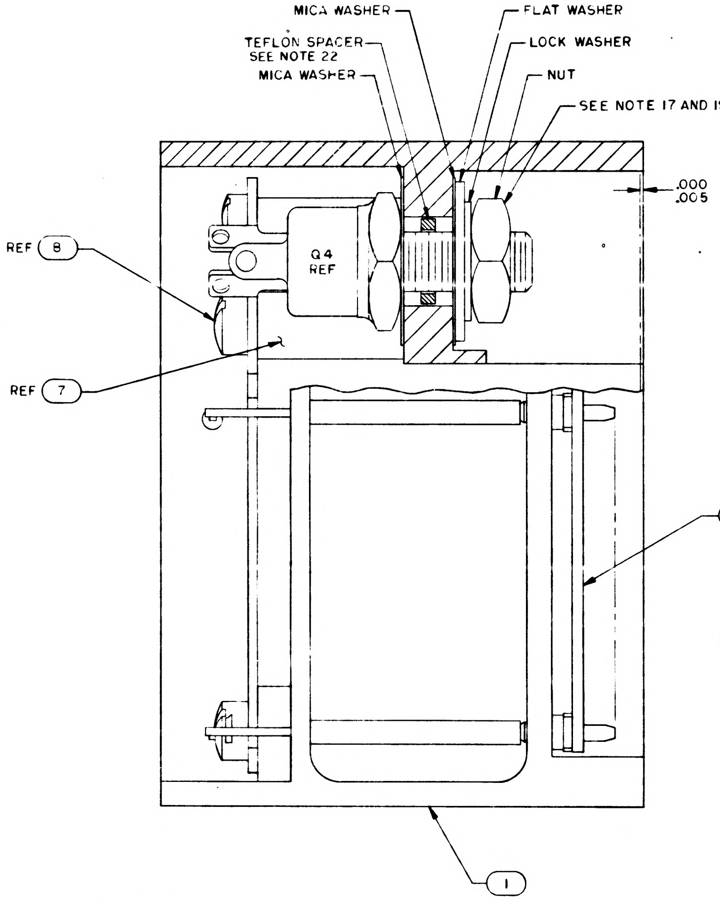
MICA WASHER
TEFLON SPACER
SEE NOTE 22
MICA WASHER
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NUT
SEE NOTE 17 AND 19
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REF 8
REF 7
Q4
REF
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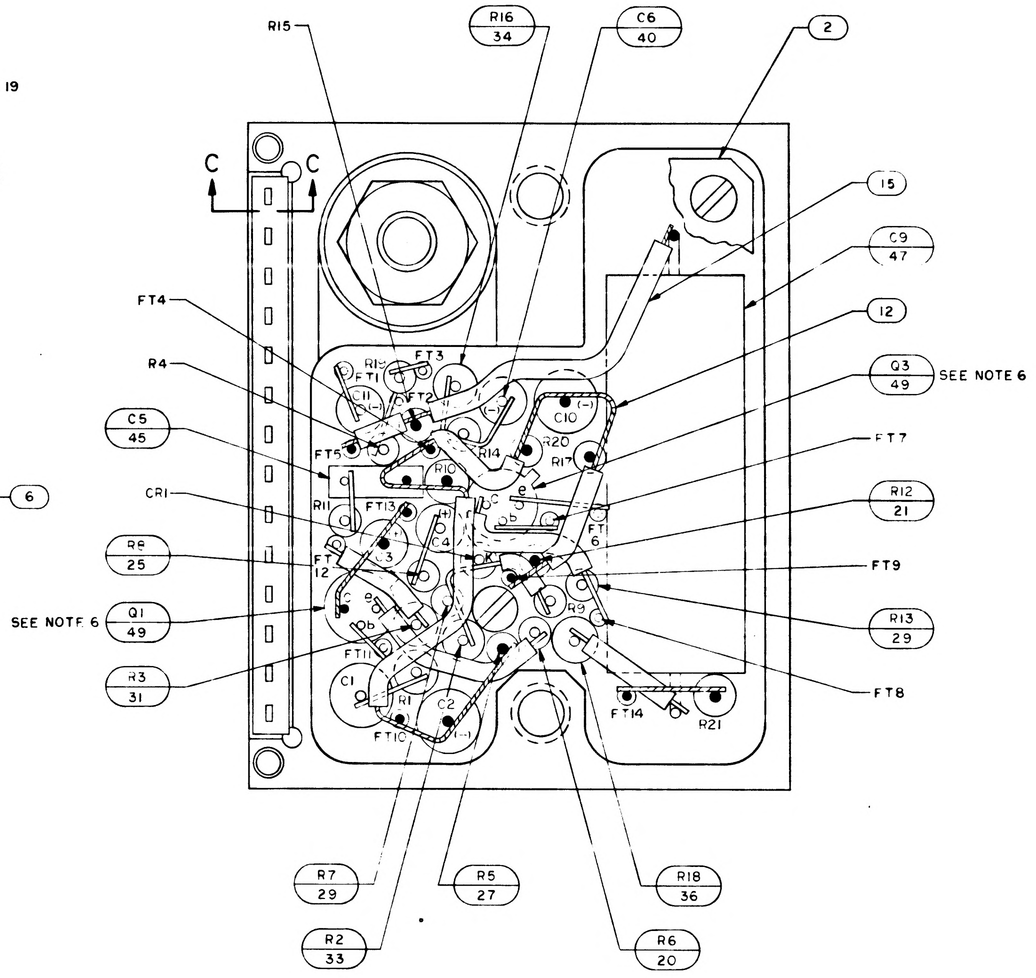
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SEE NOTE 6
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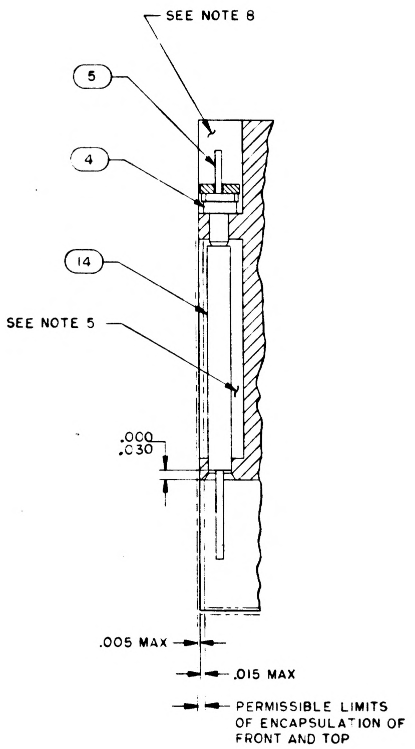
FT14
R21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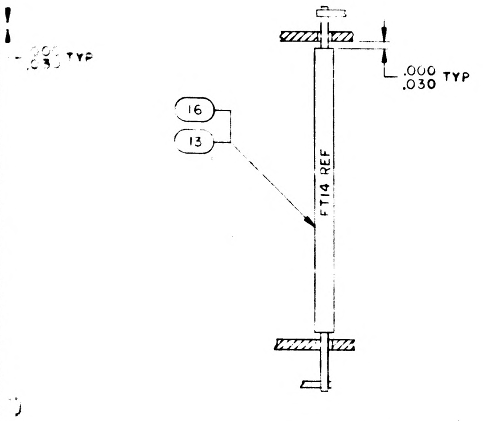
PERMISSIBLE LIMITS
OF ENCAPSULATION OF
FRONT AND TOP

SECTION C-C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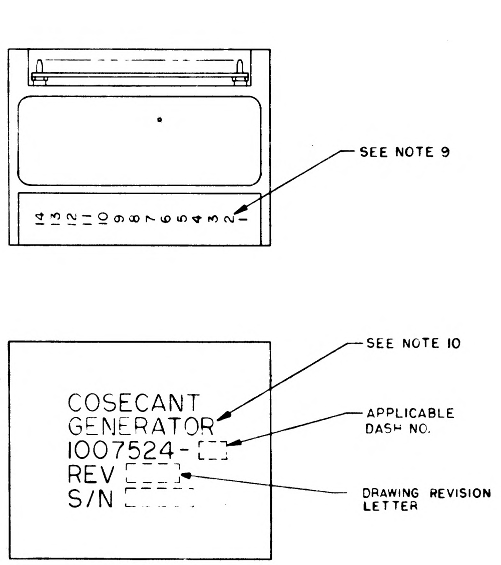
.000
.030 TYP
16
13
FT14 REF

SECTION A-A
TYP SLEEVING FOR
FT1 THRU FT6, FT8 FT9, FT10,
FT12, FT13 AND FT14


SEE NOTE 9
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COSECANT
GENERATOR
1007524-
REV
S/N
SEE NOTE 10
APPLICABLE
DASH NO.
DRAWING REVISION
LETTER

MARKING VIEWS
SCALE 2/1

Ⓑ REPLACES REV A WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
☒	1009509	SCHEMATIC	REF
3	1010397-1	TRANSISTOR	49
1	1010269-1	TRANSISTOR	48
1	1010375-66	CAPACITOR	47
1	1010375-12	CAPACITOR	46
2	1010359-27	CAPACITOR	45
1	1010359-11	CAPACITOR	44
1	1006755-134	CAPACITOR	43
1	1006755-77	CAPACITOR	42
2	1006755-69	CAPACITOR	41
1	1006755-65	CAPACITOR	40
1	1006755-45	CAPACITOR	39
1	1006755-20	CAPACITOR	38
1	1010372-24	DIODE	37
1	1010368-11	RESISTOR	36
1	1010364-757	RESISTOR	35
1	1010364-749	RESISTOR	34
1	1010364-727	RESISTOR	33
1	1010364-666	RESISTOR	32
1	1010364-521	RESISTOR	31
1	1010364-93	RESISTOR	30
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1	1006750-77	RESISTOR	28
1	1006750-72	RESISTOR	27
1	1006750-70	RESISTOR	26
1	1006750-69	RESISTOR	25
1	1006750-64	RESISTOR	24
1	1006750-56	RESISTOR	23
1	1006750-44	RESISTOR	22
1	1006750-34	RESISTOR	21
1	1006750-20	RESISTOR	20
1	1006750-19	RESISTOR	19
1	1006750-18	RESISTOR	18
1	1006750-7	RESISTOR	17
AR	1006776-22	INSULATION SLEEVING	16
AR	1006776-21	INSULATION SLEEVING	15
AR	1006776-20	INSULATION SLEEVING	14
AR	1006757-8	WIRE, ELECTRICAL	13
AR	1006757-1	WIRE, ELECTRICAL	12
4	1010485-42	SCREW, FILLISTER HD	11
2	1015135-015	SPACER	10
1	1010485-100	SCREW, FILLISTER HD	9
1	1010485-116	SCREW, FILLISTER HD	8
1	1015131	SPACER	7
1	1008540-14	GASKET, CONNECTOR MINAT	6
14	1006752-5	CONTACT, WRAPOST, MALE MINAT	5
14	1006775	INSULATOR, WRAPOST, MALE MINAT	4
1	1008599	WIRING BOARD, TOP	3
1	1008598	WIRING BOARD, BOTTOM	2
1	1007596	FRAME ASSY	1

011 LIST OF MATERIALS

1007524 F

NEXT ASSY	USED ON
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

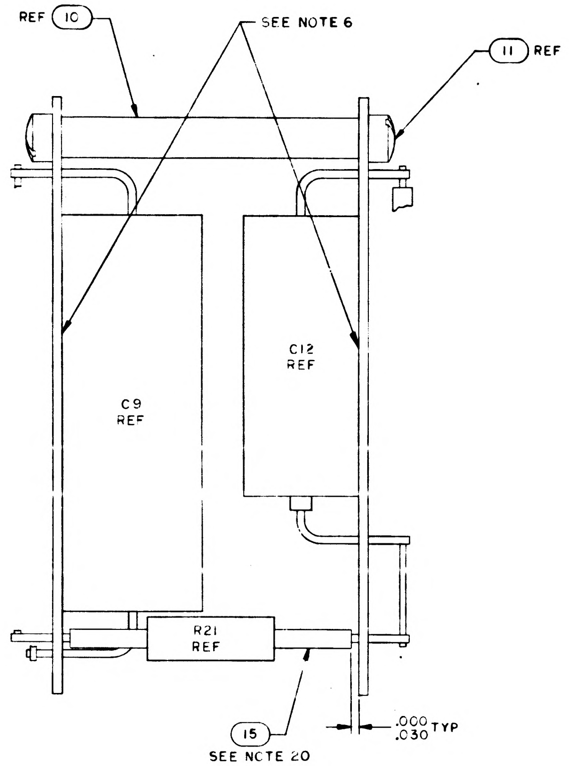
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN E. C. Taylor DATE [illegible] 65
CHECKED [illegible] 5FEB65
APPROVAL
APPROVAL [illegible] 2/8/65
NASA APPROVAL
MIT APPROVAL W Kupfer 9Feb65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COSECANT GENERATOR
MODULE ASSY

CODE IDENT NO 80230
SIZE J
NASA DRAWING NO 1007524
SCALE 5/1
WT
SHEET 1 OF 1

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO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C9 REF
C12 REF
R21 REF
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SEE NOTE 20
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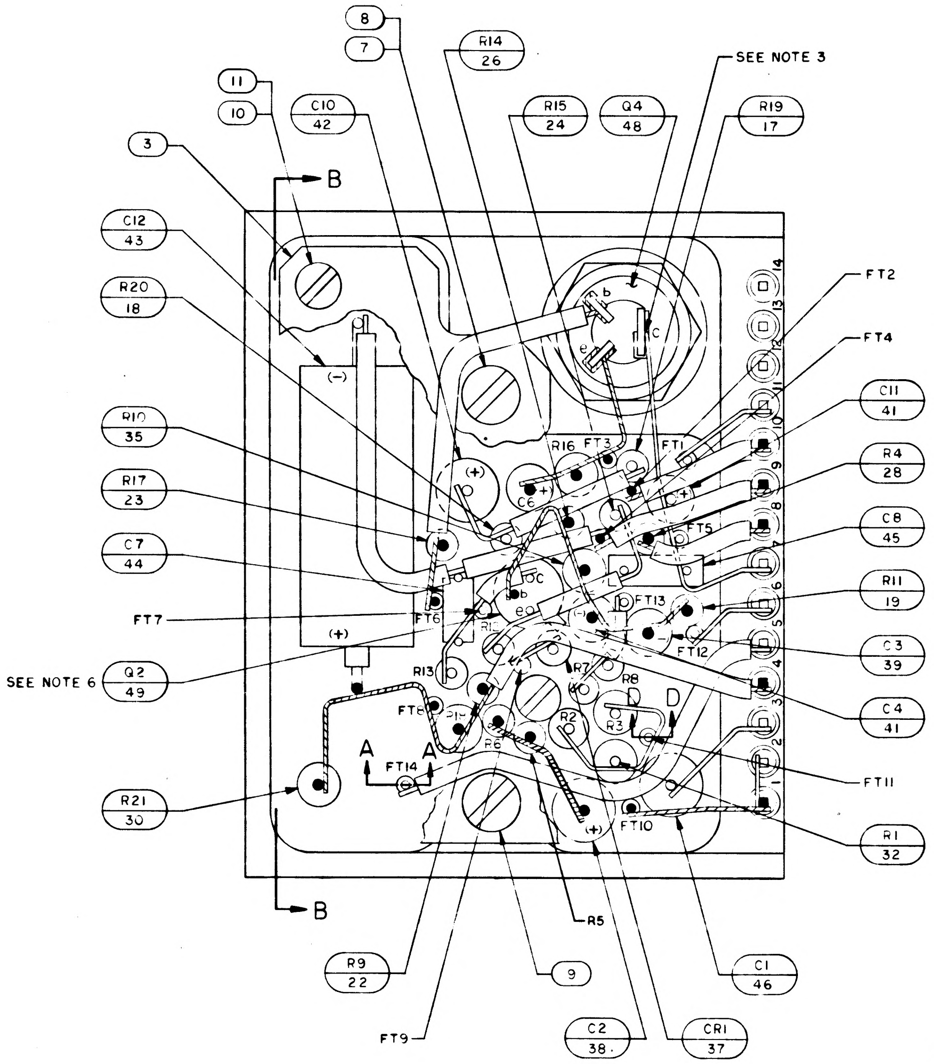
.030 TYP

SECTION B-B
WITH FIND NO.1 REMOVED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C7 44
FT7
SEE NOTE 6
Q2 49
R21 30
FT2
FT4
C11 41
R4 28
C8 45
R11 19
C3 39
C4 41
FT11
R1 32
R9 22
9
R5
C1 46
FT9
C2 38
CR1 37
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R16
FT3
FT1
FT5
C6
FT6
FT13
FT12
R13
R12
R7
R8
R2
R3
R6
FT8
FT14
FT10
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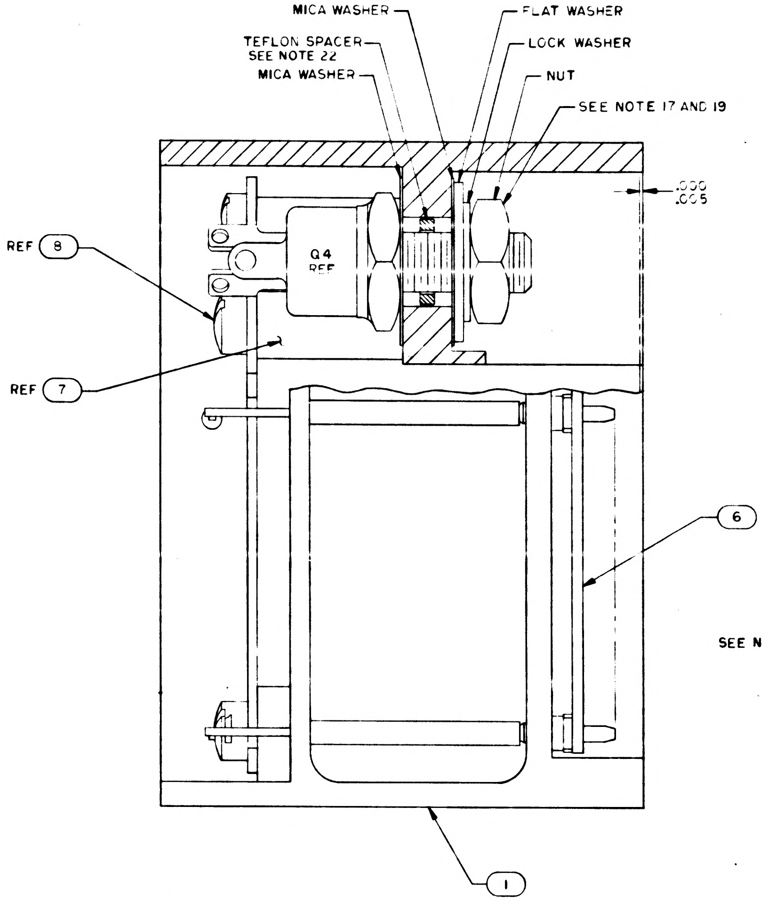
MICA WASHER
TEFLON SPACER
SEE NOTE 22
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
SEE NOTE 17 AND 19
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.005
Q4 REF
REF 8
REF 7
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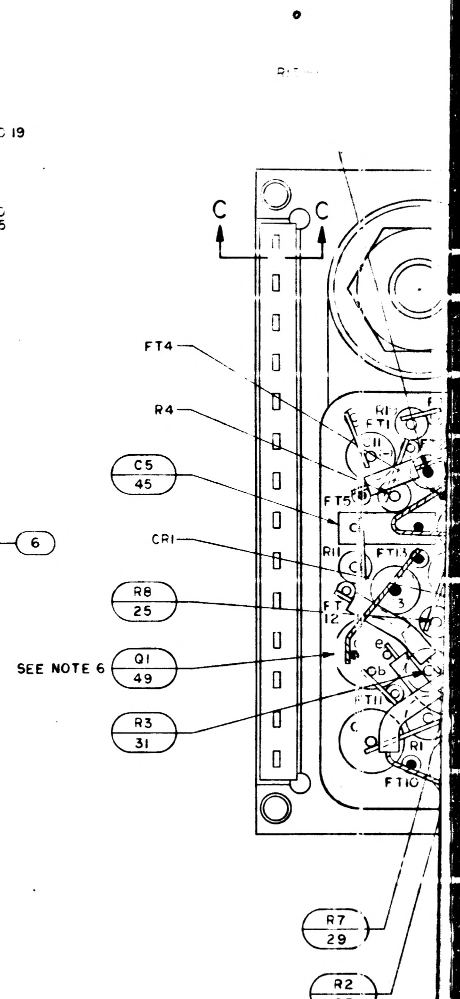
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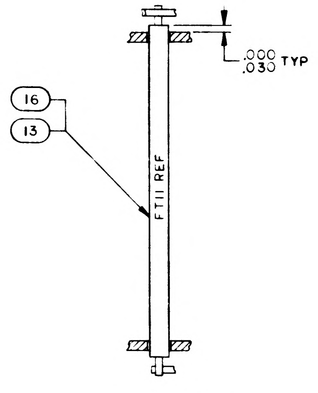
FT1
FT5
FT10
FT11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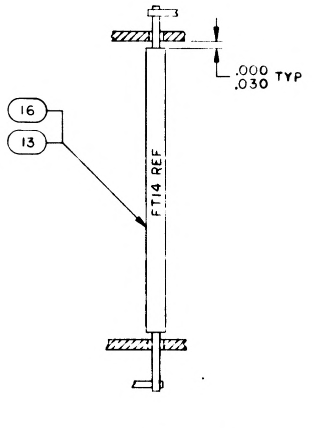
13
FT11 REF

SECTION D-D
TYP SLEEVING FOR
FT7 AND FT11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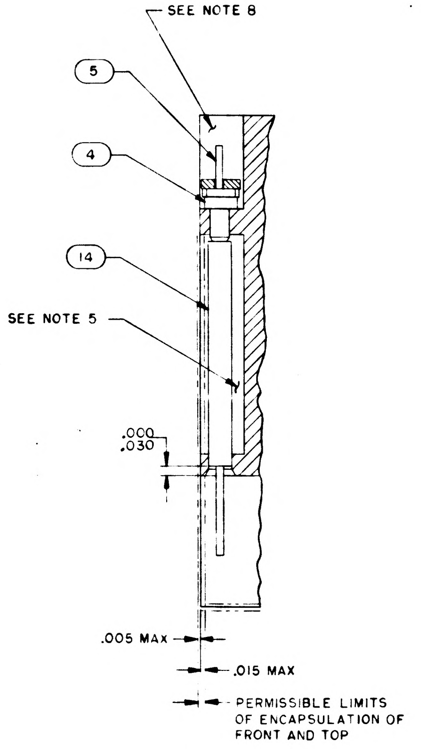
FT14 REF

SECTION A-A
TYP SLEEVING FOR
FT1 THRU FT6, FT8, FT9, FT10,
FT12, FT13 AND FT14


SEE NOTE 8
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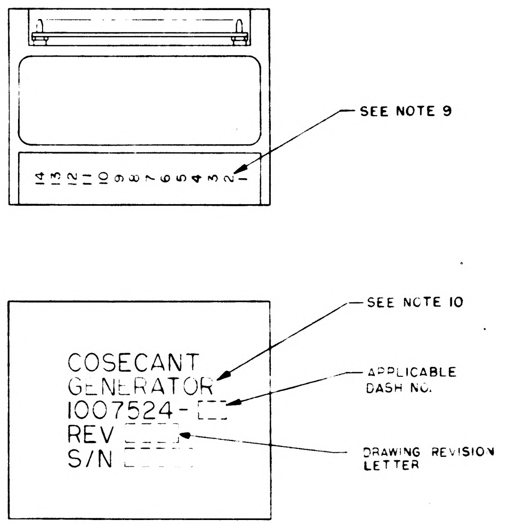
PERMISSIBLE LIMITS OF ENCAPSULATION OF FRONT AND TOP

SECTION C-C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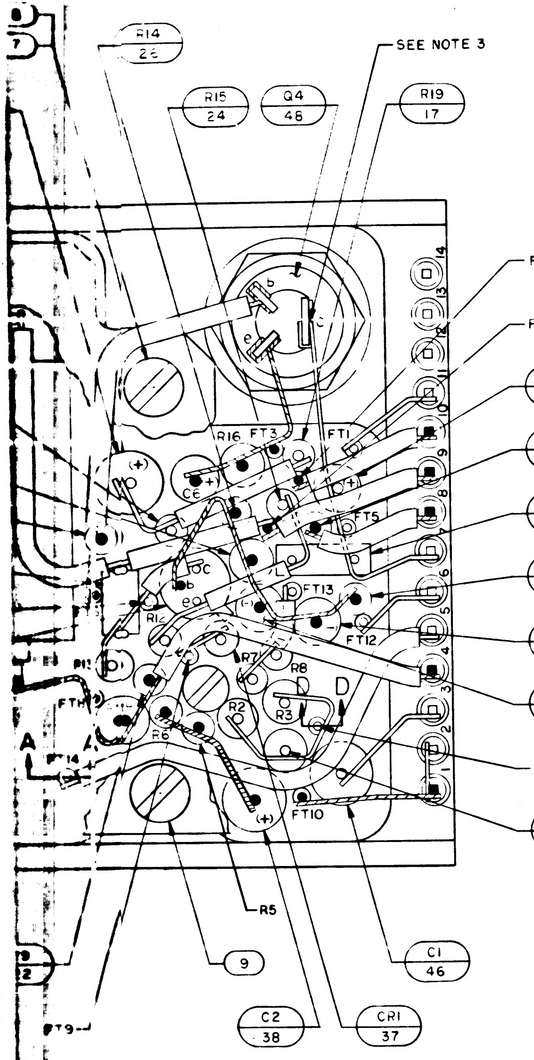
SEE NOTE 9
COSECANT
GENERATOR
1007524-
REV
S/N
SEE NOTE 10
APPLICABLE DASH NO.
DRAWING REVISION LETTER

MARKING VIEWS
SCALE 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND1002005
3. SOLDER PER ND 1002071
4. ASSEMBLE FIND NO.4 TO FIND NO.5 PER ND 1002136
5. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
6. BOND Q2 AND C12 TO FIND NO.3 AND Q1, Q3 AND C9 TO FIND NO.2 PER ND 1002004 TYPE I
7. ~~BOND FIND NO.6 TO FIND NO.4 PER ND 1002237~~
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
11. AR DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
14. + DENOTES POSITIVE SIDE OF CAPACITOR
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. MOUNTING TORQUE FOR NUT OF FIND NO.48 TO BE 12-14 INCH POUNDS
18. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
19. APPLY SEALING COMPOUND MIL-S-22473 GRADE A TO NUT OF FIND NO.48
20. TYPICAL SLEEVING FOR FIND NO. 17 THRU FIND NO. 37
21. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF P S 1007524.
22. STAKE TEFLON SPACER PER ND1002009 METHOD
23. ~~CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND1002187 TYPE II.~~
24. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
25. EXCEPT FOR THE HELICOIL MOUNTING SURFACES, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 16330	5FEB65	WK
C	REVISED PER TDRR 17006	5 MAR 65	JWP
D	REVISED PER TDRR 19411	2 JUN65	
E	REVISED PER TDRR 19486	9 JUN 65	WJK
F	REVISED PER TDRR 20143	19 JUN 65	DKD
G	REVISED PER TDRR 21122	31 JUL 65	SRA RWH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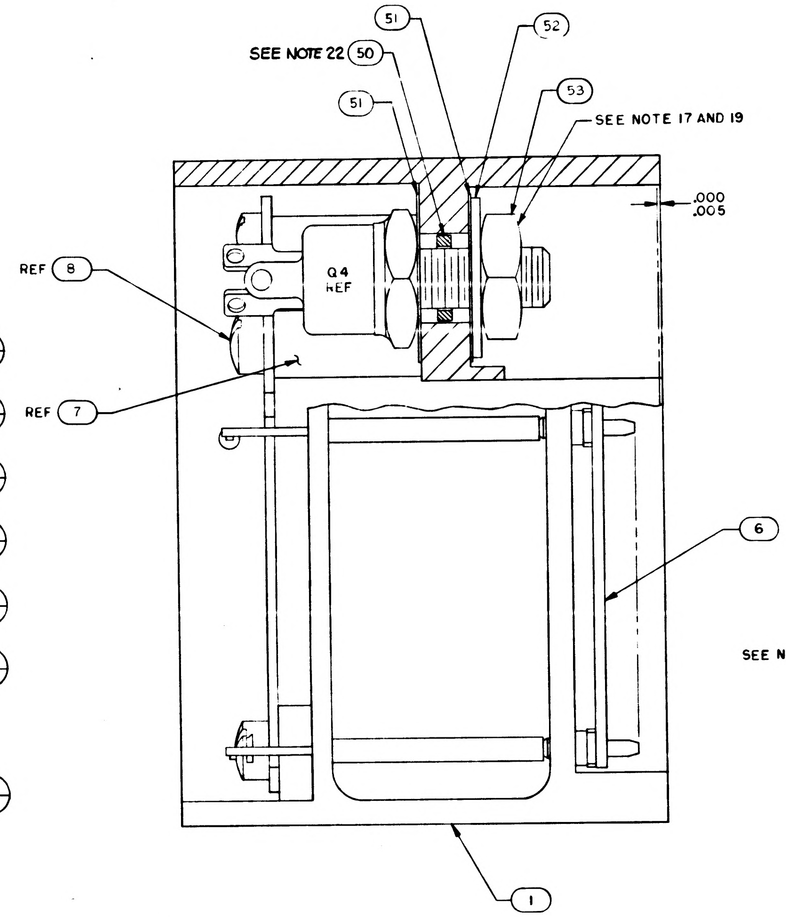
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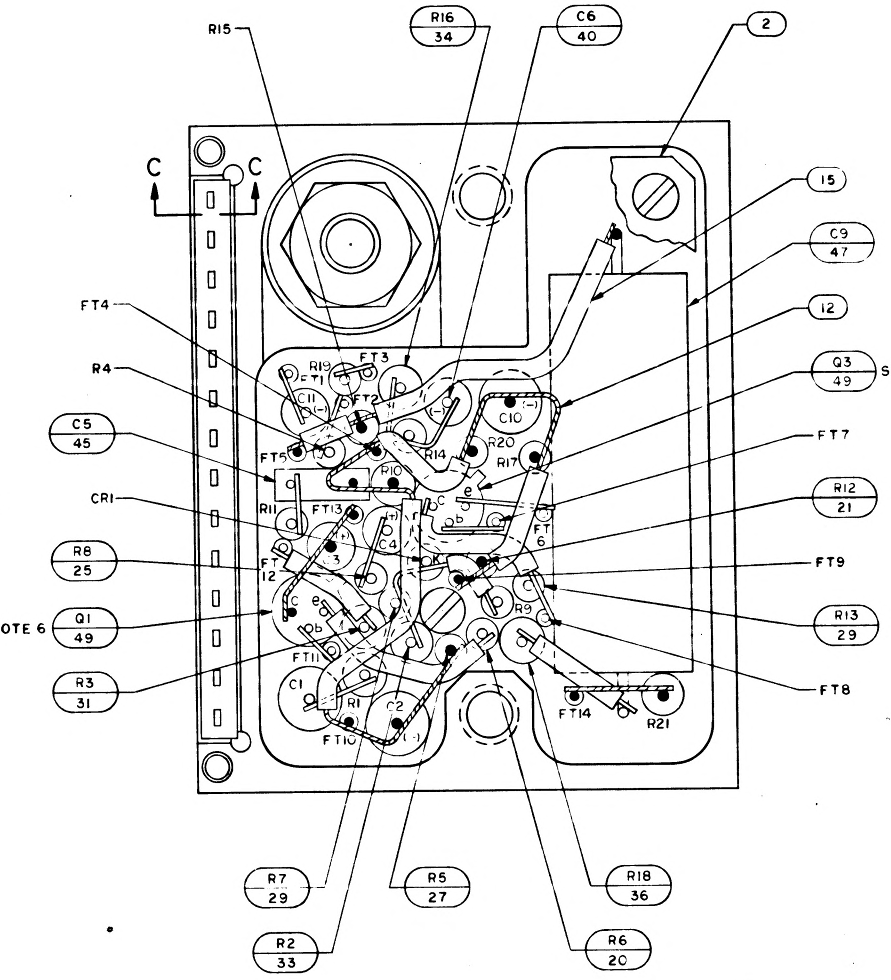
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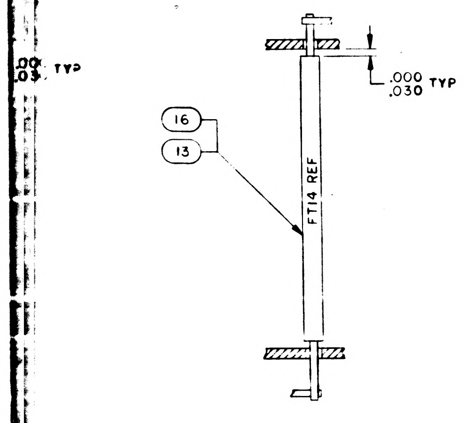
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16
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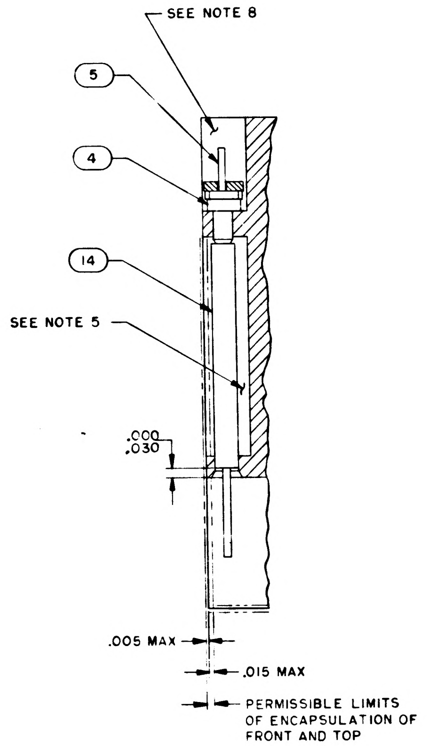
FT14 REF

SECTION A-A
TYP SLEEVING FOR
FT1 THRU FT6, FT8 FT9, FT10,
FT12, FT13 AND FT14


SEE NOTE 8
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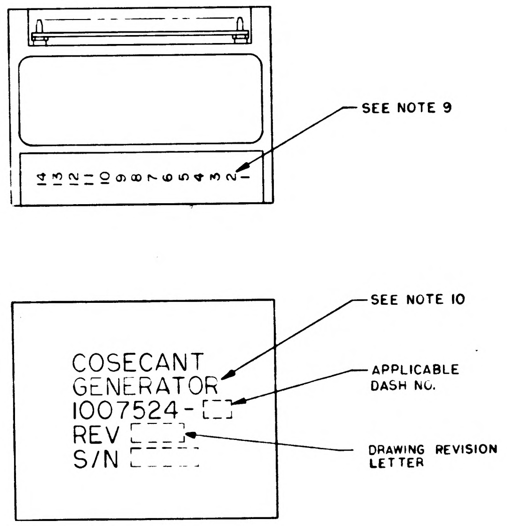
PERMISSIBLE LIMITS
OF ENCAPSULATION OF
FRONT AND TOP

SECTION C-C


SEE NOTE 9
14 13 12 11 10 9 8 7 6 5 4 3 2 1
COSECANT
GENERATOR
1007524-
REV
S/N
SEE NOTE 10
APPLICABLE
DASH NO.
DRAWING REVISION
LETTER

MARKING VIEWS
SCALE 2/1

Ⓑ REPLACES REV A WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
☒	1009509	SCHEMATIC	REF
1	MS 20341-10B	NUT, HEX	53
1	1008071-2	WASHER, FLAT	52
2	1008024-1	WASHER, INSULATOR	51
1	1008615	TEFLON SPACER	50
3	1010397-1	TRANSISTOR	49
1	1010269-1	TRANSISTOR	48
1	1010375-66	CAPACITOR	47
1	1010375-12	CAPACITOR	46
2	1010359-27	CAPACITOR	45
1	1010359-11	CAPACITOR	44
1	1006755-134	CAPACITOR	43
1	1006755-77	CAPACITOR	42
2	1006755-69	CAPACITOR	41
1	1006755-65	CAPACITOR	40
1	1006755-45	CAPACITOR	39
1	1006755-20	CAPACITOR	38
1	1010372-24	DIODE	37
1	1010368-11	RESISTOR	36
1	1010364-757	RESISTOR	35
1	1010364-749	RESISTOR	34
1	1010364-727	RESISTOR	33
1	1010364-666	RESISTOR	32
1	1010364-521	RESISTOR	31
1	1010364-93	RESISTOR	30
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1	1006750-77	RESISTOR	28
1	1006750-72	RESISTOR	27
1	1006750-70	RESISTOR	26
1	1006750-69	RESISTOR	25
1	1006750-64	RESISTOR	24
1	1006750-56	RESISTOR	23
1	1006750-44	RESISTOR	22
1	1006750-34	RESISTOR	21
1	1006750-20	RESISTOR	20
1	1006750-19	RESISTOR	19
1	1006750-18	RESISTOR	18
1	1006750-7	RESISTOR	17
AR	1006776-22	INSULATION SLEEVING	16
AR	1006776-21	INSULATION SLEEVING	15
AR	1006776-20	INSULATION SLEEVING	14
AR	1006757-8	WIRE, ELECTRICAL	13
AR	1006757-1	WIRE, ELECTRICAL	12
4	1010485 - 42	SCREW, FILLISTER HD	11
2	1015135-015	SPACER	10
1	1010485-100	SCREW, FILLISTER HD	9
1	1010485-116	SCREW, FILLISTER HD	8
1	1015131	SPACER	7
1	1008540-14	GASKET, CONNECTOR MINAT	6
14	1006782-5	CONTACT, WRAPOST, MALE MINAT	5
14	1006775	INSULATOR, WRAPOST, MALE MINAT	4
1	1008599	WIRING BOARD, TOP	3
1	1008598	WIRING BOARD, BOTTOM	2
1	1007596	FRAME ASSY	1
011	LIST OF MATERIALS		

1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN A. C. Taylor DATE [illegible]
CHECKED [illegible] 5FEB65
APPROVAL
APPROVAL 2/8/65
NASA APPROVAL
MIT APPROVAL 9Feb65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COSECANT GENERATOR
MODULE ASSY

CODE IDENT NO 80230
SIZE J
NASA DRAWING NO 1007524
SCALE 5/1
WT
SHEET 1 OF 1

1007524 G

007524 REV G SHT 1

2/1007524

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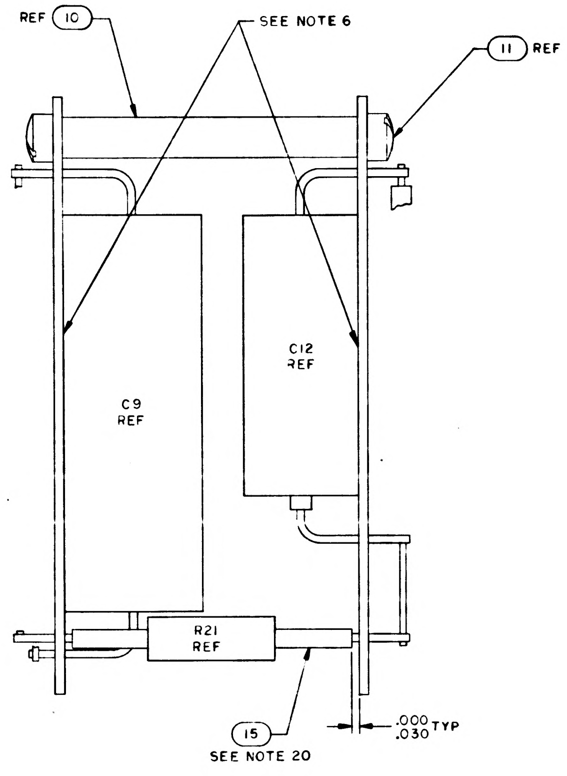
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C9 REF
C12 REF
R21 REF
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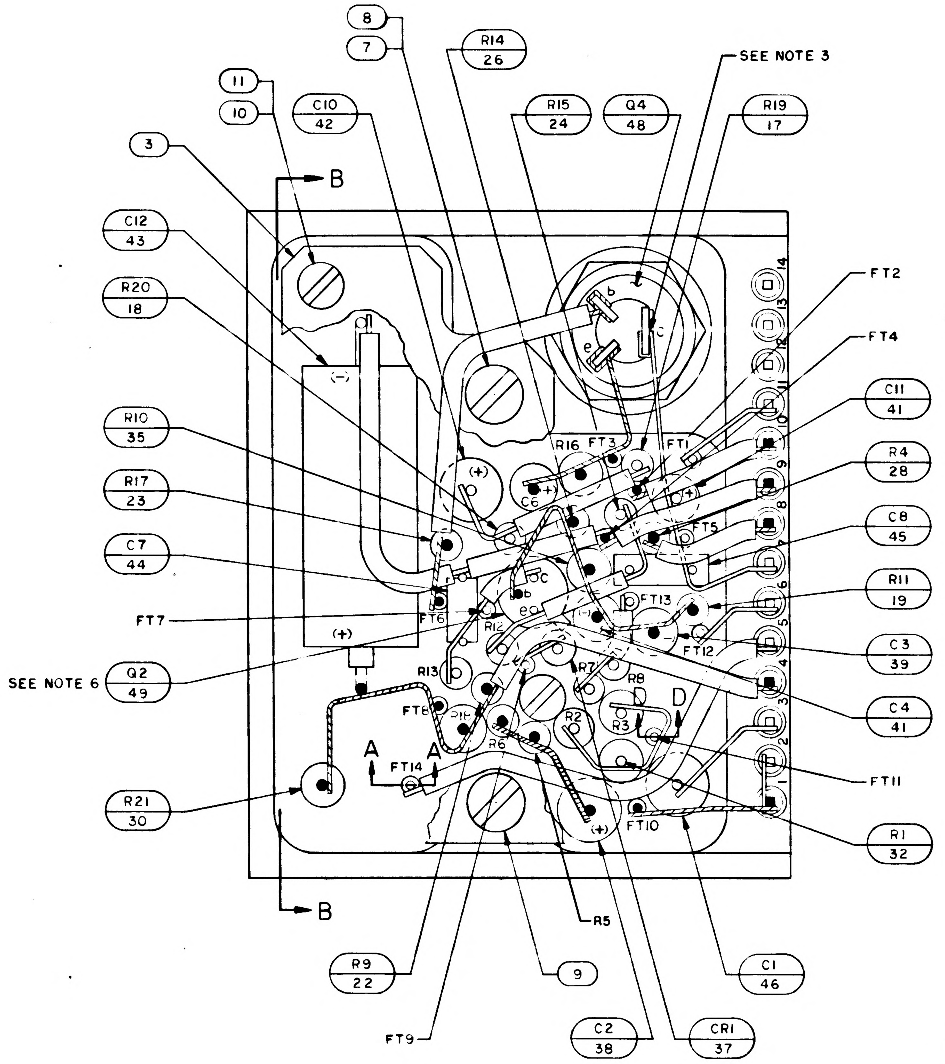
SEE NOTE 20
.000 .030 TYP

SECTION B-B
WITH FIND NO.1 REMOVED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FT4
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C11 41
R10 35
R4 28
R17 23
C8 45
C7 44
R11 19
FT7
C3 39
SEE NOTE 6 Q2 49
C4 41
FT11
A
FT14
D
R21 30
R1 32
R16
FT3
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FT5
FT13
FT12
FT6
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R8
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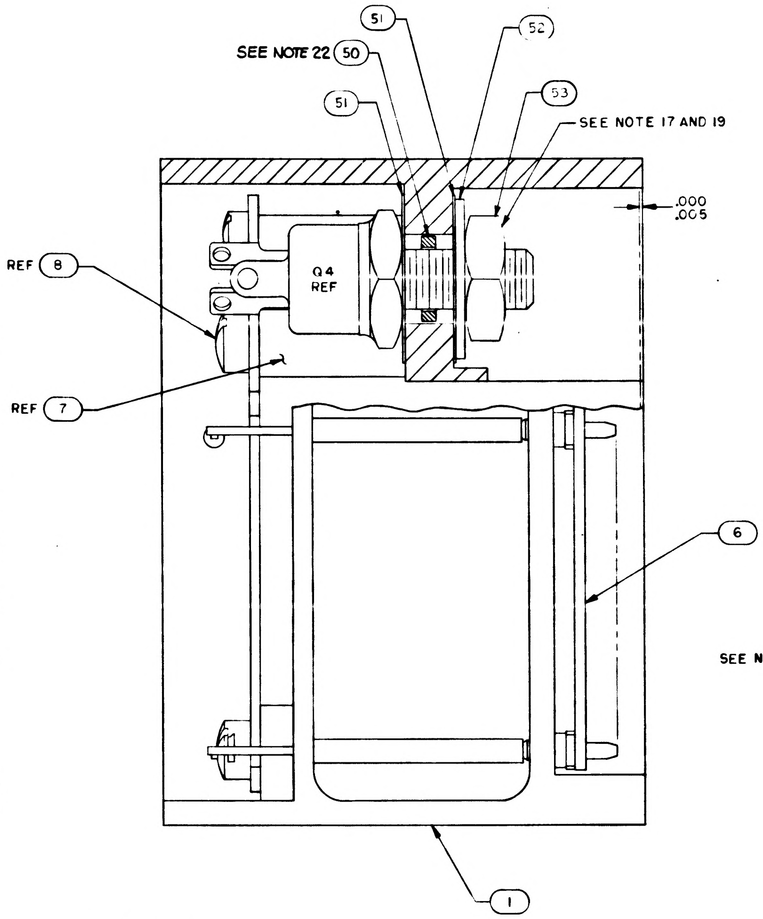
CR1 37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SEE NOTE 17 AND 19
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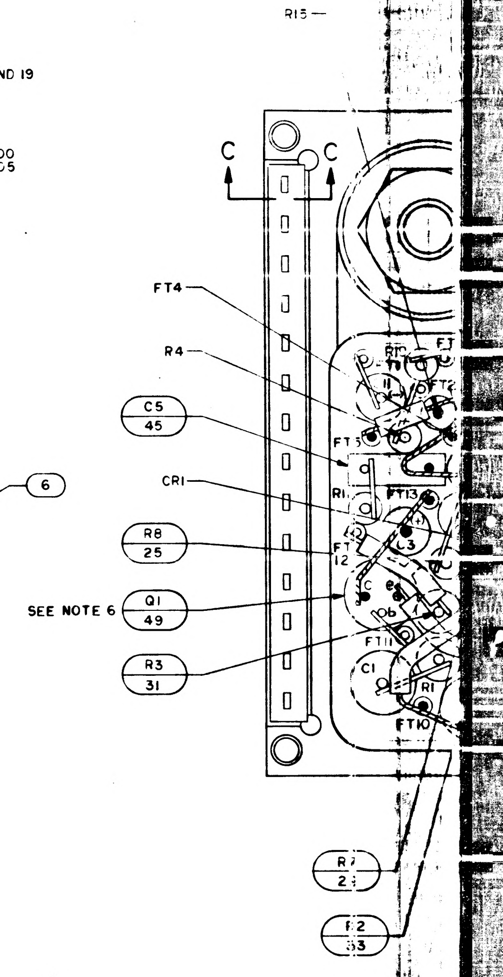
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FT4
R4
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CR1
R8 25
SEE NOTE 6 Q1 49
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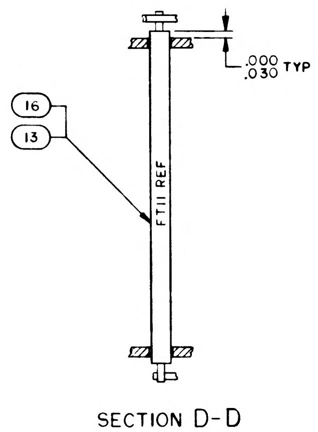
R7 23
R2 33
FT13
FT11
FT10
C1
R1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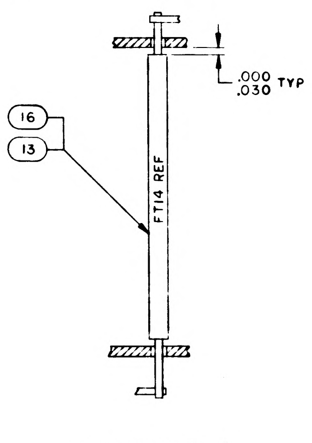
FT11 REF

SECTION D-D
TYP SLEEVING FOR
FT7 AND FT11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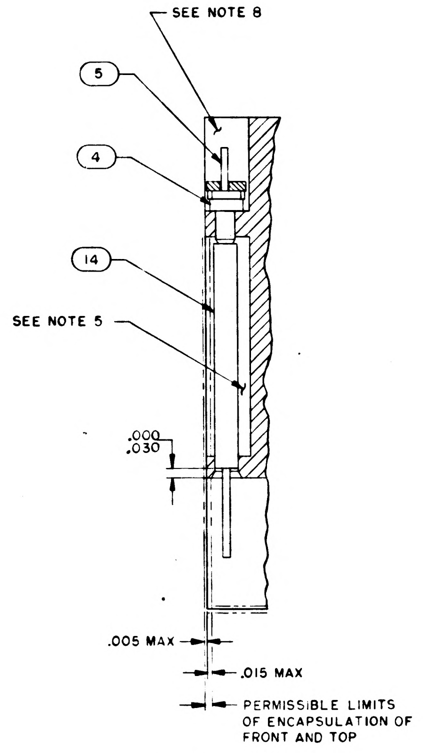
13
.000 .030 TYP
FT14 REF

SECTION A-A
TYP SLEEVING FOR
FT1 THRU FT6, FT8, FT9, FT10,
FT12, FT13 AND FT14


SEE NOTE 8
5
4
14
SEE NOTE 5
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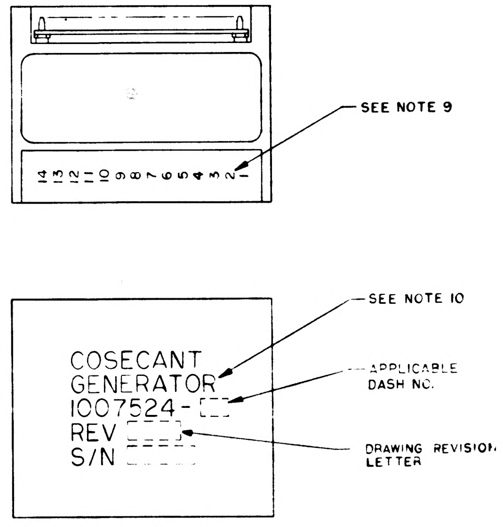
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION OF FRONT AND TOP

SECTION C-C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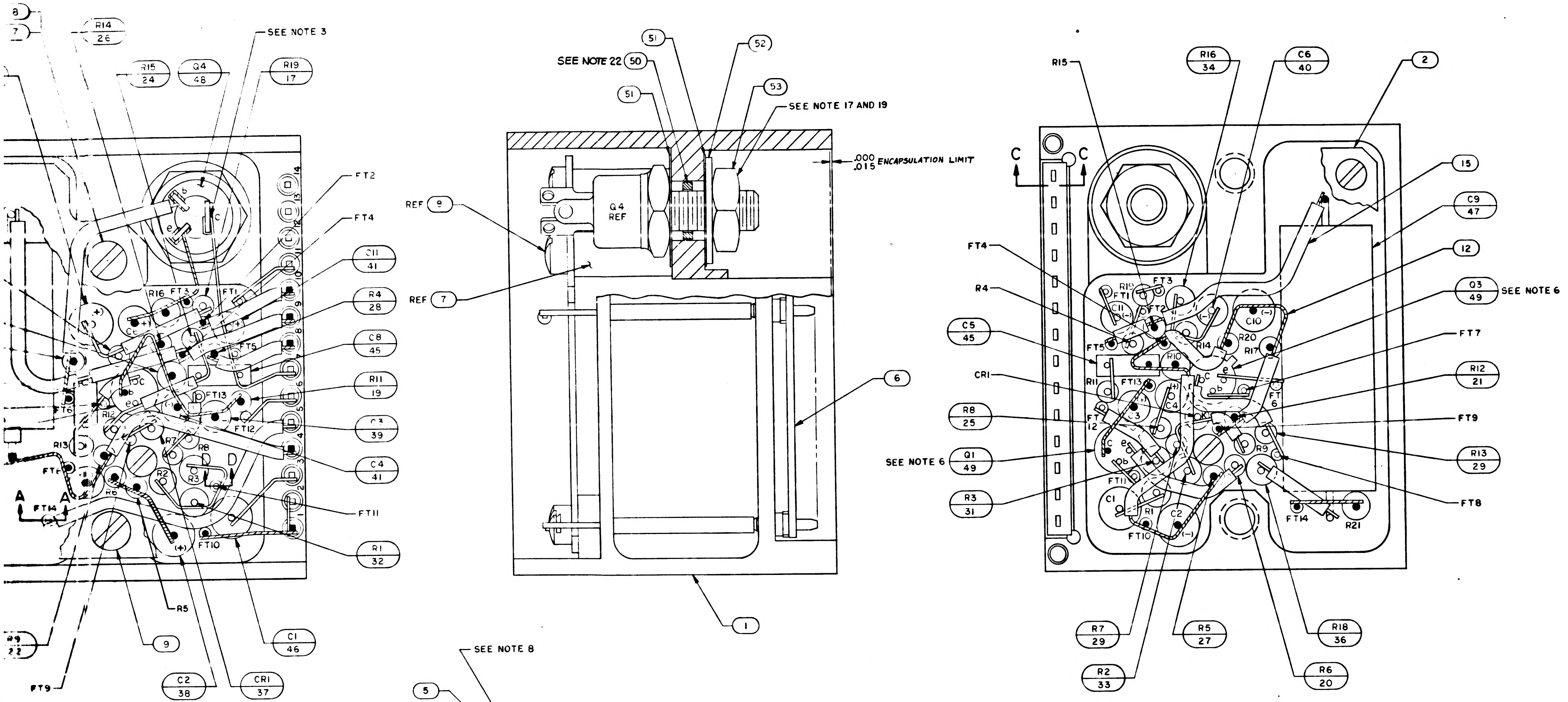
SEE NOTE 9
COSECANT
GENERATOR
1007524-
REV
S/N
SEE NOTE 10
APPLICABLE DASH NO.
DRAWING REVISION LETTER

MARKING VIEWS
SCALE 2/1

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND1002005
3. SOLDER PER ND 1002071
4. ASSEMBLE FIND NO.4 TO FIND NO.5 PER ND 1002136
5. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
6. BOND Q2 AND C12 TO FIND NO.3 AND Q1, Q3 AND C9 TO FIND NO.2 PER ND 1002004 TYPE I
~~7. BOND FIND NO.6 TO FIND NO.4 PER ND 1002237~~
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
11. AR DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
14. + DENOTES POSITIVE SIDE OF CAPACITOR
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. MOUNTING TORQUE FOR NUT OF FIND NO.48 TO BE 12-14 INCH POUNDS
18. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
19. APPLY SEALING COMPOUND MIL-S-22473 GRADE A TO NUT OF FIND NO.48
20. TYPICAL SLEEVING FOR FIND NO. 17 THRU FIND NO. 37
21. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007524.
22. STAKE ITEM 50 TO ITEM 1 PER ND 1002009 METHOD H.
~~23. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND1002187 TYPE II.~~
24. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
25. EXCEPT FOR THE HELICOIL MOUNTING SURFACES, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

1007524	REV LTR	SHT
	G	1

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 16330	5FEB65	WK
C	REVISED PER TDRR 17006	5 MAR 65	JWP
D	REVISED PER TDRR 19411	2 JUN 65	[illegible]
E	REVISED PER TDRR 19486	9 JUN 65	WJK
F	REVISED PER TDRR 20143	13 JUN 65	DKD P7
G	REVISED PER TDRR 21122	31 JUL 65	BRA RWH
H	REVISED PER TDRR 22946	12 OCT 65	[illegible]



8
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R14 26
R15 24
Q4 48
R19 17
SEE NOTE 3
FT2
FT4
C11 41
R4 28
C8 45
R11 19
C3 39
C4 41
FT11
R1 32
C1 46
CR1 37
C2 38
9
R5
R9 22
FT9
R13
FT14
A
A
R16
FT3
FT1
FT5
FT13
FT12
R12
R7
R6
R8
R2
R3
D
FT10
SEE NOTE 22 50
51
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52
53
SEE NOTE 17 AND 19
.000 .015 ENCAPSULATION LIMIT
REF 9
REF 7
Q4 REF
6
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R15
R16 34
C6 40
2
C C
15
C9 47
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SEE NOTE 6
FT7
R12 21
FT9
R13 29
FT8
FT4
R4
C5 45
CR1
R8 25
SEE NOTE 6
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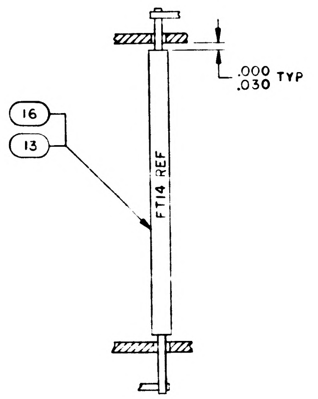
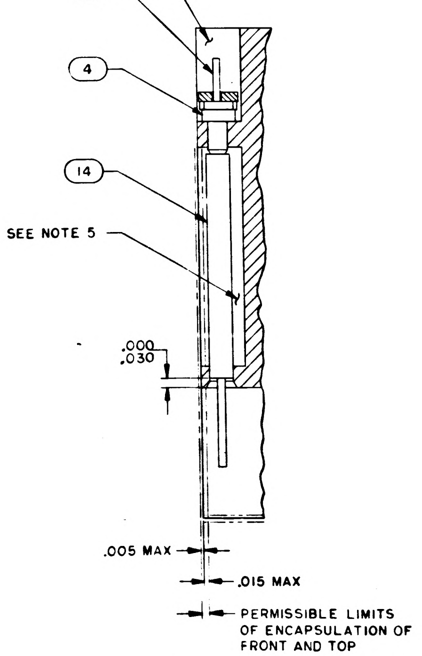
FT14
R21



.000 .030 TYP
.000 .030 TYP
16
13
FT14 REF

SECTION A-A
TYP SLEEVING FOR
FT1 THRU FT6, FT8 FT9, FT10,
FT12, FT13 AND FT14



SEE NOTE 8
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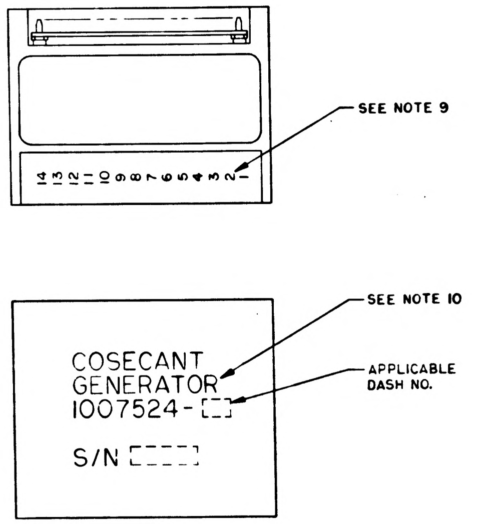
SEE NOTE 5
.000 .030
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION OF FRONT AND TOP

SECTION C-C



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SEE NOTE 9
SEE NOTE 10
COSECANT GENERATOR 1007524-
APPLICABLE DASH NO.
S/N

MARKING VIEWS
SCALE 2/1

Ⓑ REPLACES REV A WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009509	SCHEMATIC	REF
1	MS 20341-108	NUT, HEX	53
1	1008071-2	WASHER, FLAT	52
2	1008024-1	WASHER, INSULATOR	51
1	1008615	TEFLON SPACER	50
3	1010397-1	TRANSISTOR	49
1	1010269-1	TRANSISTOR	48
1	1010375-66	CAPACITOR	47
1	1010375-12	CAPACITOR	46
2	1010359-27	CAPACITOR	45
1	1010359-11	CAPACITOR	44
1	1006755-134	CAPACITOR	43
1	1006755-77	CAPACITOR	42
2	1006755-69	CAPACITOR	41
1	1006755-65	CAPACITOR	40
1	1006755-45	CAPACITOR	39
1	1006755-20	CAPACITOR	38
1	1010372-24	DIODE	37
1	1010368-11	RESISTOR	36
1	1010364-757	RESISTOR	35
1	1010364-749	RESISTOR	34
1	1010364-727	RESISTOR	33
1	1010364-666	RESISTOR	32
1	1010364-521	RESISTOR	31
1	1010364-93	RESISTOR	30
2	1006750-84	RESISTOR	29
1	1006750-77	RESISTOR	28
1	1006750-72	RESISTOR	27
1	1006750-70	RESISTOR	26
1	1006750-69	RESISTOR	25
1	1006750-64	RESISTOR	24
1	1006750-56	RESISTOR	23
1	1006750-44	RESISTOR	22
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1	1006750-20	RESISTOR	20
1	1006750-19	RESISTOR	19
1	1006750-18	RESISTOR	18
1	1006750-7	RESISTOR	17
AR	1006776-22	INSULATION SLEEVING	16
AR	1006776-21	INSULATION SLEEVING	15
AR	1006776-20	INSULATION SLEEVING	14
AR	1006757-8	WIRE, ELECTRICAL	13
AR	1006757-1	WIRE, ELECTRICAL	12
4	1010485-42	SCREW, FILLISTER HD	11
2	1015135-015	SPACER	10
1	1010485-100	SCREW, FILLISTER HD	9
1	1010485-116	SCREW, FILLISTER HD	8
1	1015131	SPACER	7
1	1008540-14	GASKET, CONNECTOR MINAT	6
14	1006782-5	CONTACT, WRAPOST, MALE MINAT	5
14	1006775	INSULATOR, WRAPOST, MALE MINAT	4
1	1008599	WIRING BOARD, TOP	3
1	1008598	WIRING BOARD, BOTTOM	2
1	1007596	FRAME ASSY	1

011 LIST OF MATERIALS

1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO CONTRACT
DRAWN A.C. Taylor DATE 27 Jan 65
CHECKED [illegible] 5FEB65
APPROVAL
APPROVAL [illegible] 2/8/65
NASA APPROVAL
MIT APPROVAL W Kupfer 9Feb65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COSECANT GENERATOR
MODULE ASSY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO 1007524
SCALE 5/1
WT
SHEET 1 OF 1

1007524 H

1007524 REV-TR H SHT 1

27-1007524

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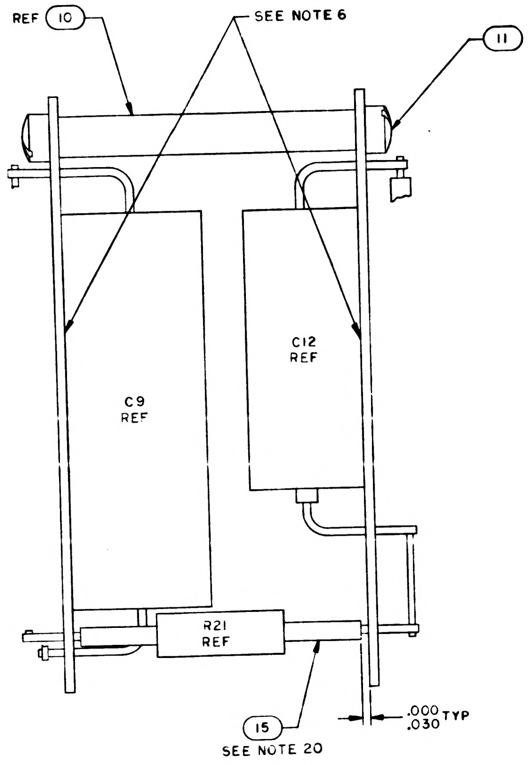
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SEE NOTE 20
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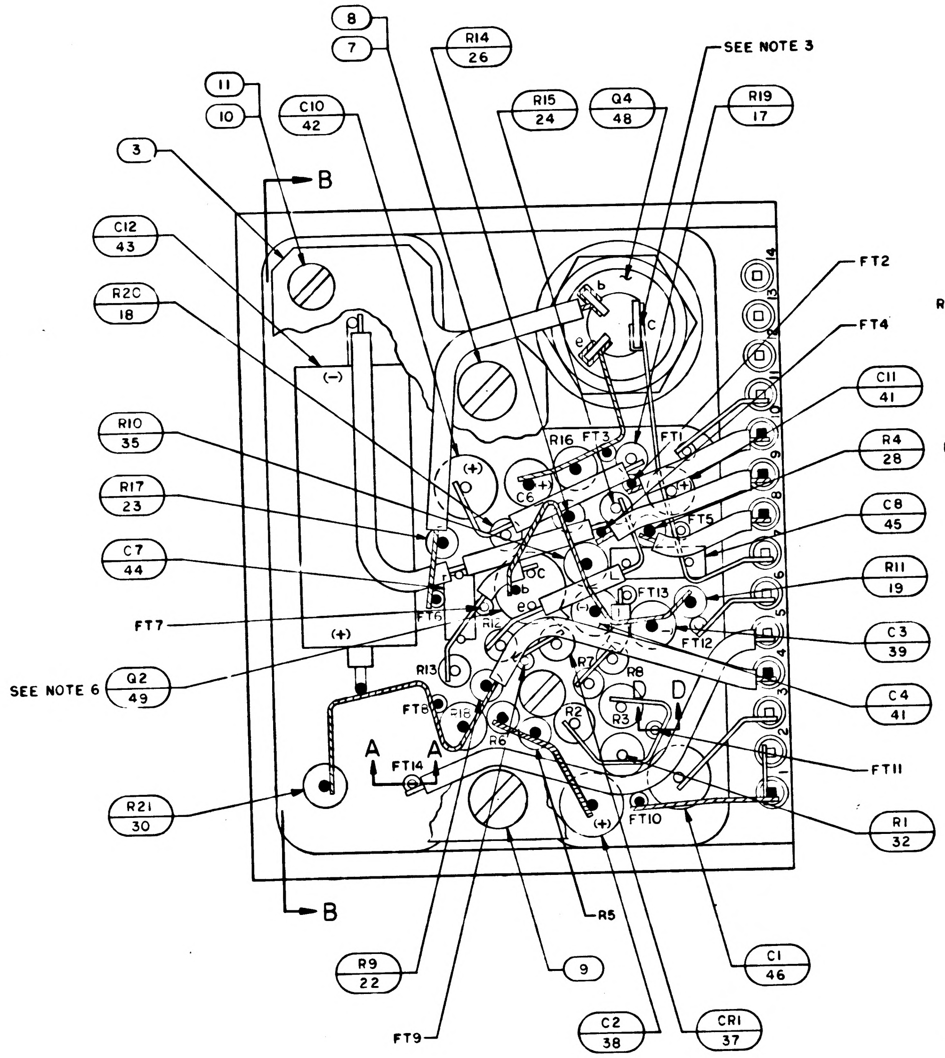
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C4 41
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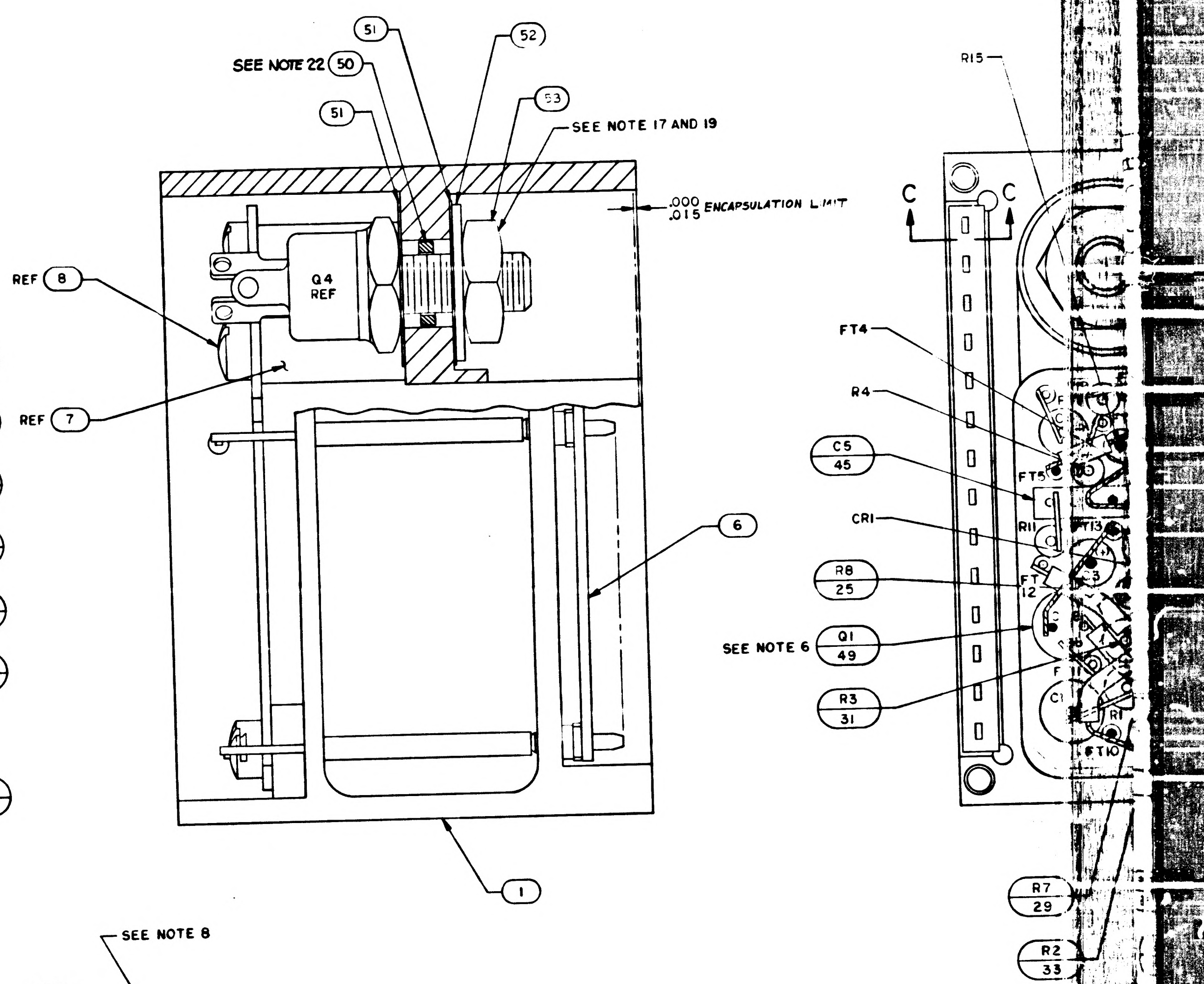
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SEE NOTE 17 AND 19
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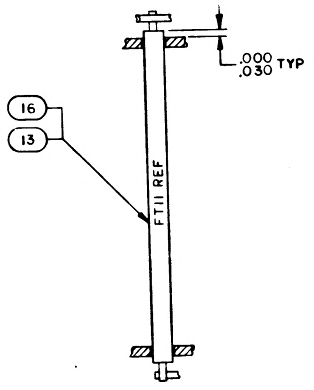
R2 33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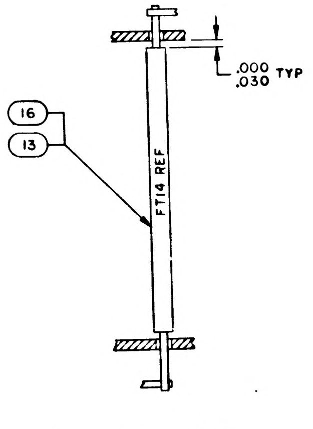
FT11 REF
.000 .030 TYP

SECTION D-D
TYP SLEEVING FOR
FT7 AND FT11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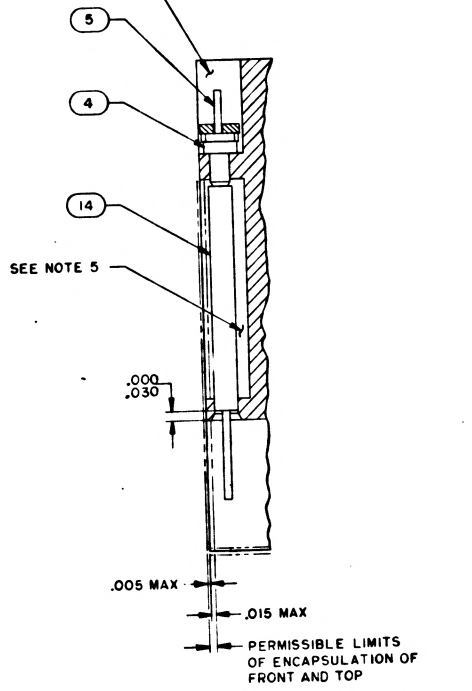
FT14 REF
.000 .030 TYP

SECTION A-A
TYP SLEEVING FOR
FT1 THRU FT6, FT8, FT9, FT10,
FT12, FT13 AND FT14

SEE NOTE 8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SEE NOTE 5
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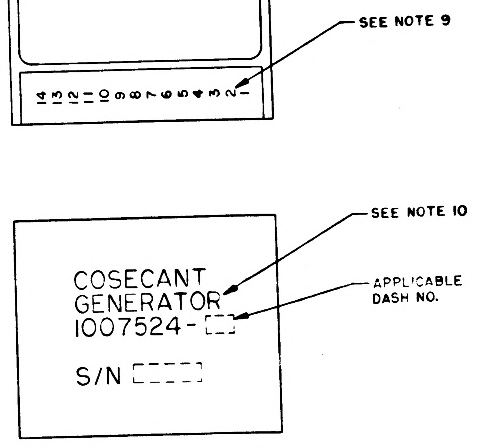
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION OF FRONT AND TOP

SECTION C-C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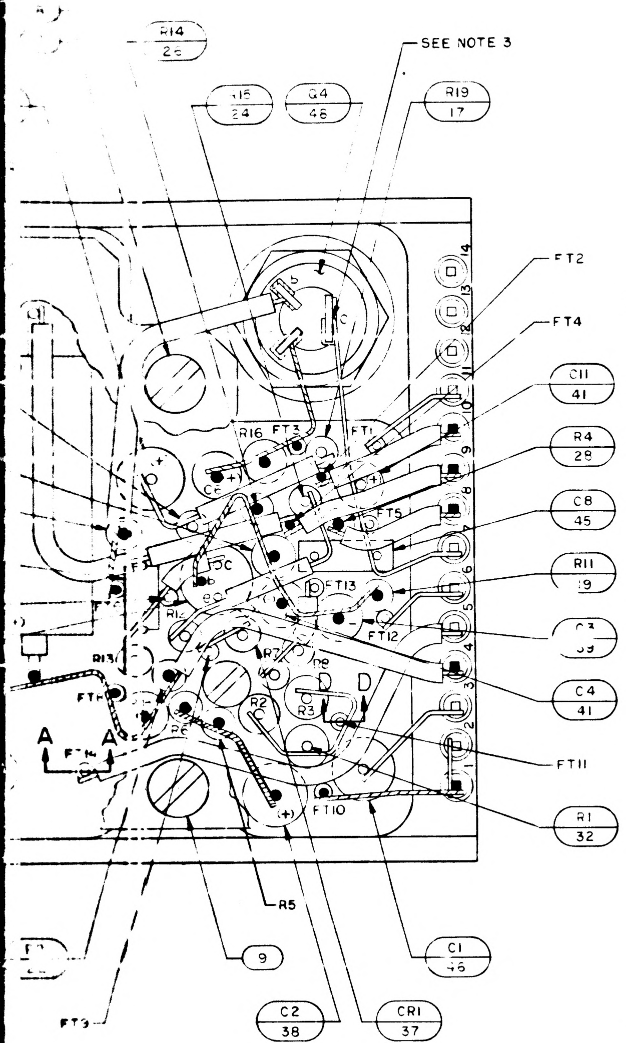
SEE NOTE 9
COSECANT GENERATOR
1007524-
S/N
SEE NOTE 10
APPLICABLE DASH NO.

MARKING VIEWS
SCALE 2/1

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND1002005
3. SOLDER PER ND 1002071
4. ASSEMBLE FIND NO.4 TO FIND NO.5 PER ND 1002136
5. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
6. BOND Q2 AND C12 TO FIND NO.3 AND Q1, Q3 AND C9 TO FIND NO.2 PER ND 1002004 TYPE I
~~7. BOND FIND NO.6 TO FIND NO.4 PER ND 1002237~~
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
11. AR DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
14. + DENOTES POSITIVE SIDE OF CAPACITOR
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. MOUNTING TORQUE FOR NUT OF FIND NO.48 TO BE 12-14 INCH POUNDS
18. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
19. APPLY SEALING COMPOUND MIL-S-22473 GRADE A TO NUT OF FIND NO. 48
20. TYPICAL SLEEVING FOR FIND NO. 17 THRU FIND NO. 37
21. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007524.
22. STAKE ITEM 50 TO ITEM 1 PER ND 1002009 METHOD J.
~~23. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND1002187 TYPE II.~~
24. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
25. EXCEPT FOR ~~THE HELICOIL~~ MODULE MOUNTING SURFACES, PAINT ALL SURFACES PER ~~ND1002110 TYPE II, AFTER ENCAPSULATION~~ ND1002279, USING 1010992 PRIMER AND ND1008809-4 PAINT. ~~USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS~~ CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

1007524	REV LTR H	SHT 1

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 16330	5FEB65	WK
C	REVISED PER TDRR 17006	5 MAR 65	JWP
D	REVISED PER TDRR 19411	2JUN65	
E	REVISED PER TDRR 19486	9 JUN 65	WJK
F	REVISED PER TDRR 20143	19 JUN 65	DKD
G	REVISED PER TDRR 21122	31 JUL 65	SRA RWH
H	REVISED PER TDRR 22946	12 OCT 65	RGB
J	REVISED PER TDRR 23888	17 NOV 65	


R14
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SEE NOTE 3
R15
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Q4
46
R19
17
FT2
FT4
C11
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R4
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R11
19
C3
39
C4
41
FT11
R1
32
C1
46
R5
9
C2
38
CR1
37
FT3
R16
FT3
FT1
FT5
FT13
FT12
FT10
R13
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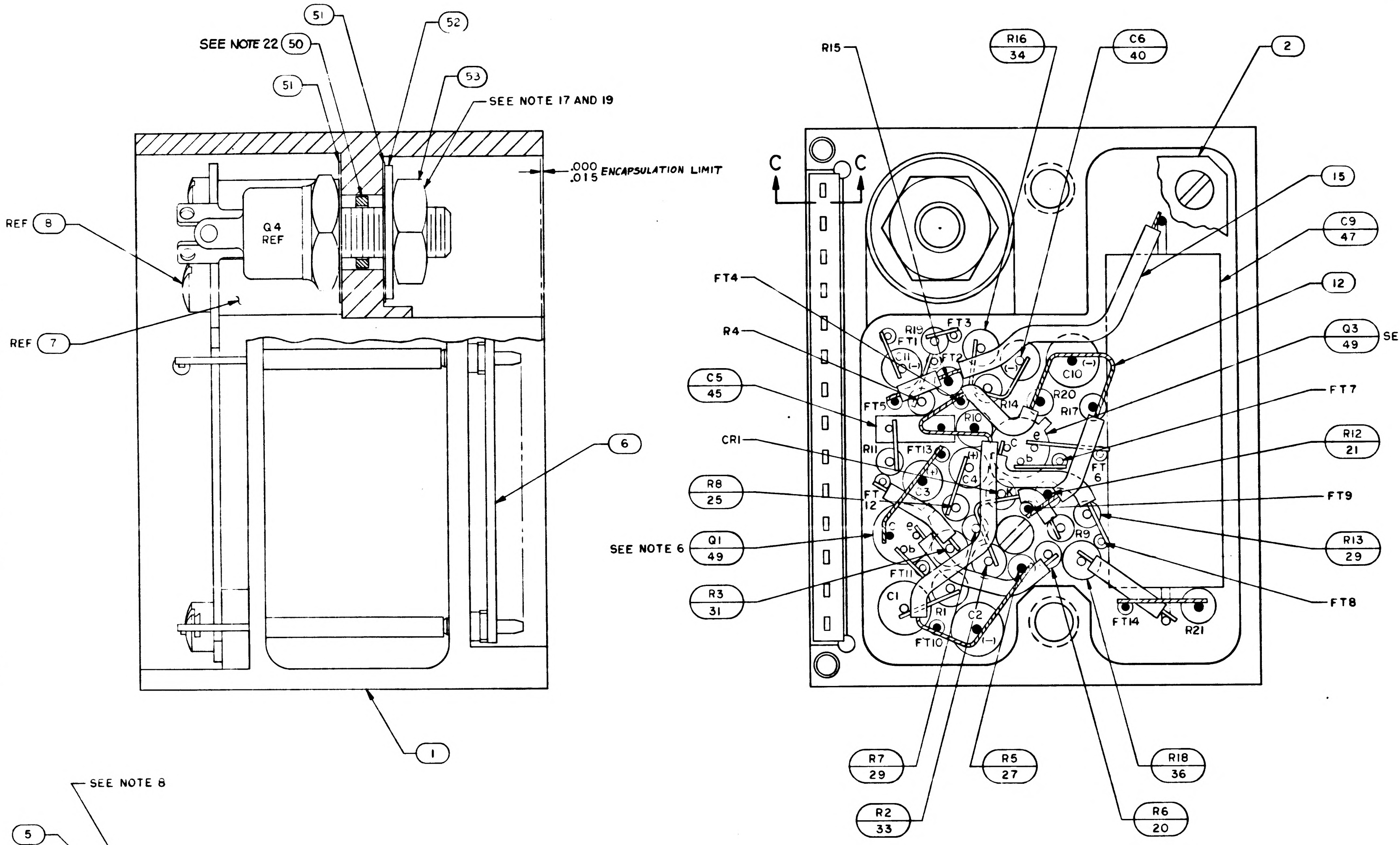
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SEE NOTE 22
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53
SEE NOTE 17 AND 19
.000
.015
ENCAPSULATION LIMIT
REF
8
Q4
REF
REF
7
6
1
R15
R16
34
C6
40
2
15
C9
47
12
Q3
49
SEE NOTE 6
FT7
R12
21
FT9
R13
29
FT8
FT4
R4
C5
45
CR1
R8
25
SEE NOTE 6
Q1
49
R3
31
C
C
R7
29
R5
27
R18
36
R2
33
R6
20
R19
FT1
FT2
FT3
FT5
R14
R20
R17
C10
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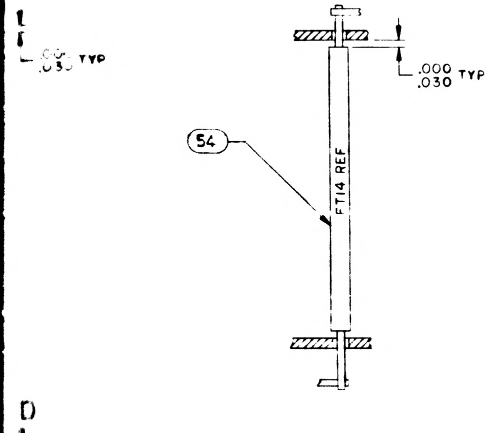
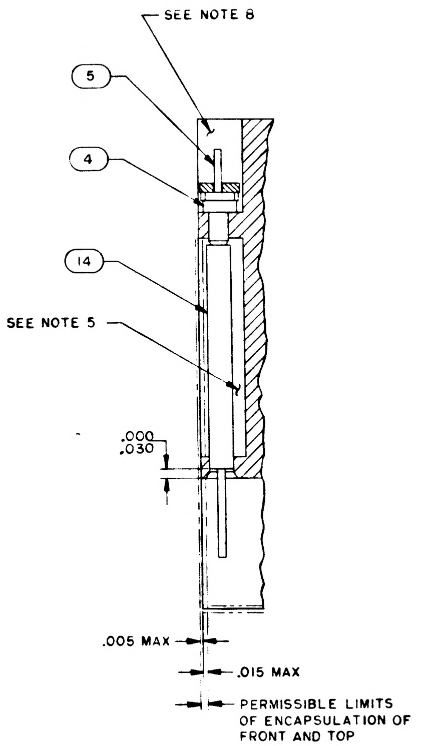
R1
C2
FT10
FT14
R21


.000
.030 TYP
.000
.030 TYP
54
FT14 REF

SECTION A-A
TYP ~~SLEEVING~~ FOR
FT1 THRU FT6, FT8 FT9, FT10,
FT12, FT13 AND FT14


SEE NOTE 8
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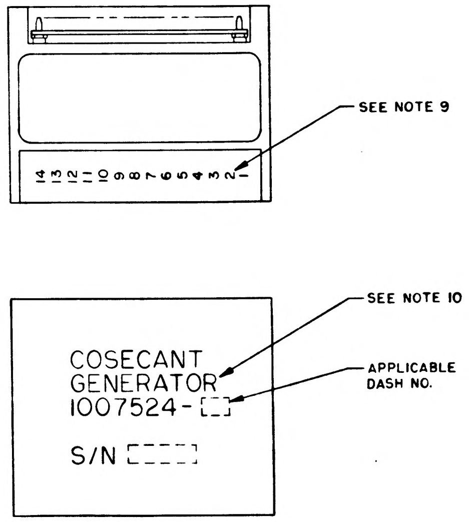
SEE NOTE 5
.000
.030
.005 MAX
.015 MAX
PERMISSIBLE LIMITS
OF ENCAPSULATION OF
FRONT AND TOP

SECTION C-C


SEE NOTE 9
14 13 12 11 10 9 8 7 6 5 4 3 2 1
COSECANT
GENERATOR
1007524-
S/N
SEE NOTE 10
APPLICABLE
DASH NO.

MARKING VIEWS
SCALE 2/1

Ⓑ REPLACES REV A WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	1010848-2	WIRE, ELECTRICAL-NICKEL	54
	1009509	SCHEMATIC	REF
1	MS 20341-10B	NUT, HEX	53
1	1008071-2	WASHER, FLAT	52
2	1008024-1	WASHER, INSULATOR	51
1	1008615	TEFLON SPACER	50
3	1010397-1	TRANSISTOR	49
1	1010269-1	TRANSISTOR	48
1	1010375-66	CAPACITOR	47
1	1010375-12	CAPACITOR	46
2	1010359-27	CAPACITOR	45
1	1010359-11	CAPACITOR	44
1	1006755-134	CAPACITOR	43
1	1006755-77	CAPACITOR	42
2	1006755-69	CAPACITOR	41
1	1006755-65	CAPACITOR	40
1	1006755-45	CAPACITOR	39
1	1006755-20	CAPACITOR	38
1	1010372-24	DIODE	37
1	1010368-11	RESISTOR	36
1	1010364-757	RESISTOR	35
1	1010364-749	RESISTOR	34
1	1010364-727	RESISTOR	33
1	1010364-666	RESISTOR	32
1	1010364-521	RESISTOR	31
1	1010364-93	RESISTOR	30
2	1006750-84	RESISTOR	29
1	1006750-77	RESISTOR	28
1	1006750-72	RESISTOR	27
1	1006750-70	RESISTOR	26
1	1006750-69	RESISTOR	25
1	1006750-64	RESISTOR	24
1	1006750-56	RESISTOR	23
1	1006750-44	RESISTOR	22
1	1006750-34	RESISTOR	21
1	1006750-20	RESISTOR	20
1	1006750-19	RESISTOR	19
1	1006750-18	RESISTOR	18
1	1006750-7	RESISTOR	17
~~AR~~	~~1006776-22~~	~~INSULATION SLEEVING~~	16
AR	1006776-21	INSULATION SLEEVING	15
AR	1006776-20	INSULATION SLEEVING	14
~~AR~~	~~1006757-8~~	~~WIRE, ELECTRICAL~~	13
AR	1006757-1	WIRE, ELECTRICAL	12
4	1010485-42	SCREW, FILLISTER HD	11
2	1015135-015	SPACER	10
1	1010485-100	SCREW, FILLISTER HD	9
1	1010485-116	SCREW, FILLISTER HD	8
1	1015131	SPACER	7
1	1008540-14	GASKET, CONNECTOR MINAT	6
14	1006782-5	CONTACT, WRAPOST, MALE MINAT	5
14	1006775	INSULATOR, WRAPOST, MALE MINAT	4
1	1008599	WIRING BOARD, TOP	3
1	1008598	WIRING BOARD, BOTTOM	2
1	1007596	FRAME ASSY	1

011 LIST OF MATERIALS

1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT
DRAWN R. C. Taylor DATE 27 Jan 65
CHECKED 5FEB65
APPROVAL
APPROVAL 2/8/65
NASA APPROVAL
MIT APPROVAL W Kupfer 9 Feb 65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

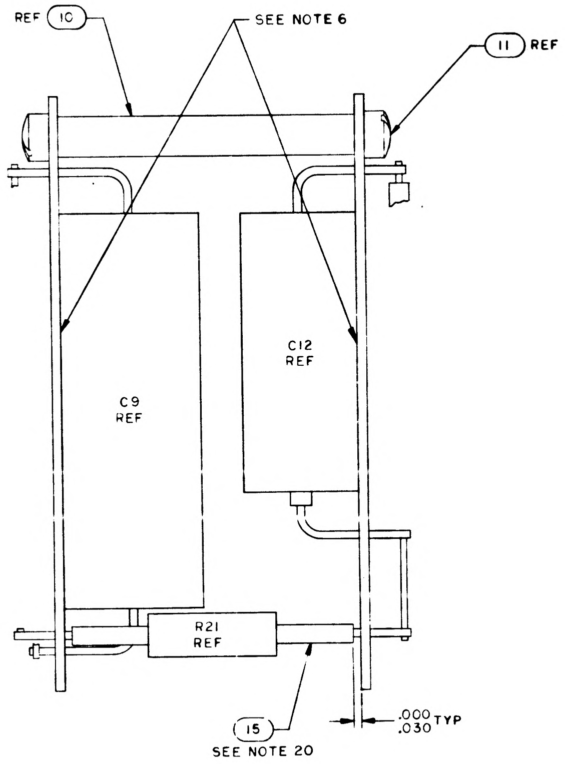
COSECANT GENERATOR
MODULE ASSY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO 1007524
SCALE 5/1
WT
SHEET 1 OF 1

J 1007524

1007524 REV J SHT 1

27 1007524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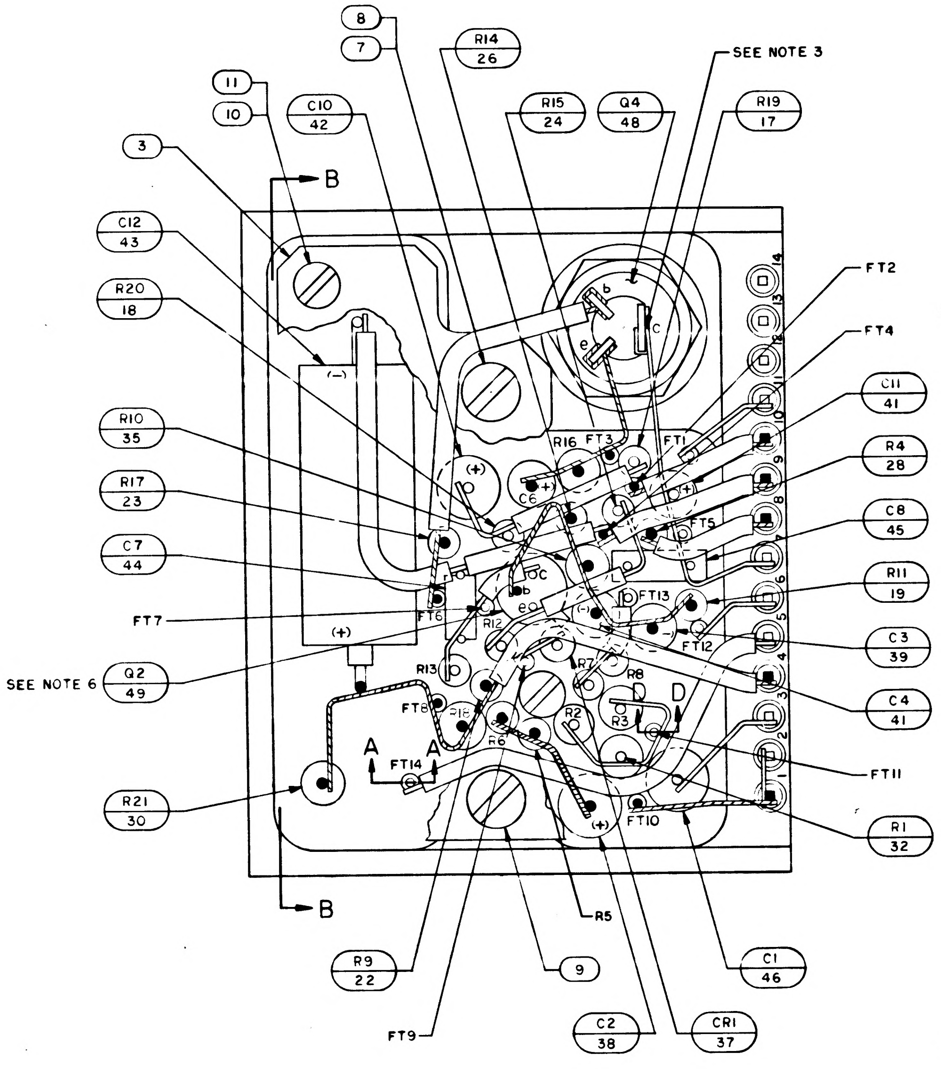
SEE NOTE 6
11 REF
C12 REF
C9 REF
R21 REF
15
SEE NOTE 20
.000 .030 TYP

SECTION B-B
WITH FIND NO.1 REMOVED


8
7
R14 26
SEE NOTE 3
11
10
C10 42
R15 24
Q4 48
R19 17
3
B
C12 43
R20 18
FT2
FT4
C11 41
R10 35
R4 28
R17 23
C8 45
C7 44
R11 19
FT7
SEE NOTE 6
Q2 49
C3 39
C4 41
FT11
R21 30
R1 32
A
A
FT14
D
D
B
R5
R9 22
9
C1 46
FT9
C2 38
CR1 37
R16 FT3 FT1 C6 FT5 R12 FT6 FT13 FT12 R13 FT8 R18 R6 R7 R8 R2 R3 FT10
b c e
(+) (-)
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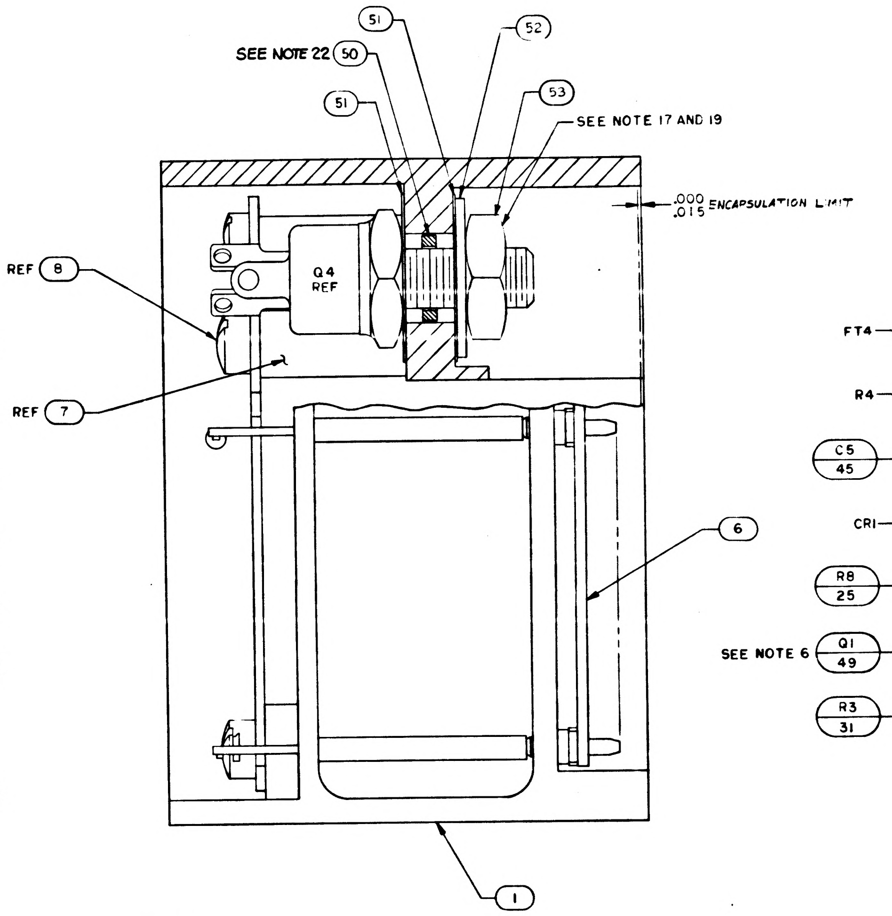
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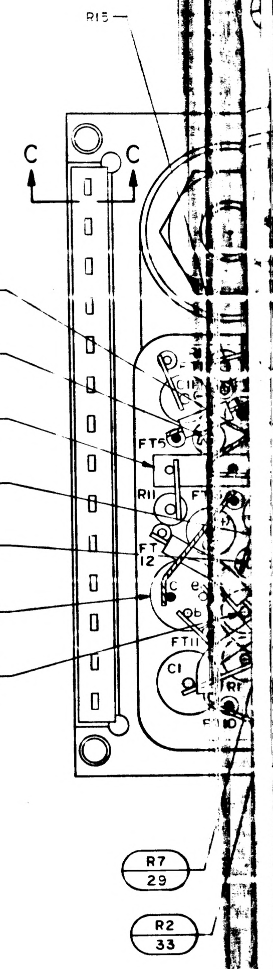
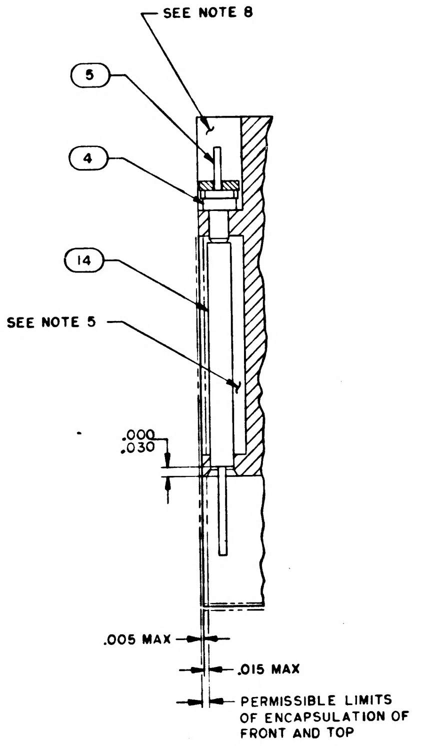
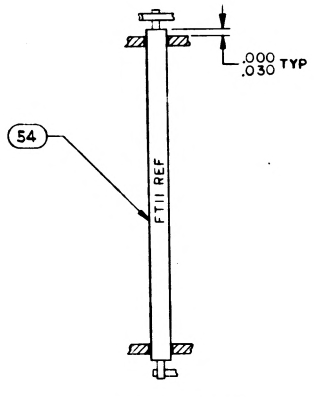
SEE NOTE 22 50
51
53
SEE NOTE 17 AND 19
.000 .015 ENCAPSULATION LIMIT
REF 8
Q4 REF
REF 7
6
1

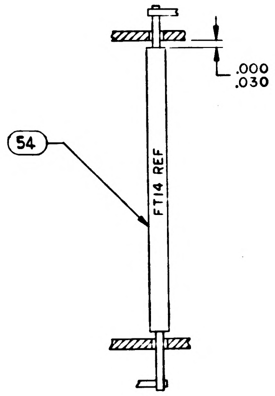

R13
C
C
FT4
R4
C5 45
FT5
CR1
R11
R8 25
SEE NOTE 6
Q1 49
R3 31
C1
R7 29
R2 33


SEE NOTE 8
5
4
14
SEE NOTE 5
.000 .030
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION OF FRONT AND TOP

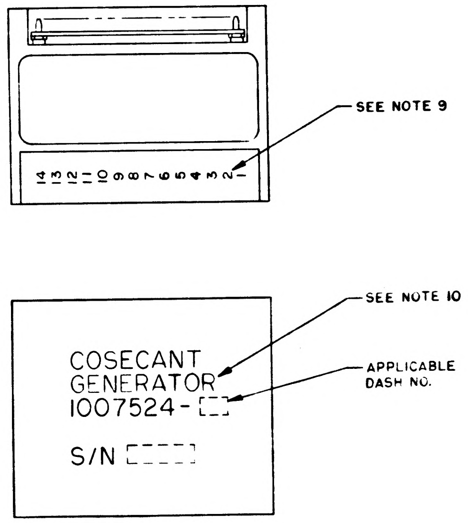
SECTION C-C


.000 .030 TYP
54
FT11 REF

SECTION D-D
TYP ~~SLEEVING~~ FOR
FT7 AND FT11


.000 .030 TYP
54
FT14 REF

SECTION A-A
TYP ~~SLEEVING~~ FOR
FT1 THRU FT6,FT8,FT9,FT10,
FT12,FT13 AND FT14


SEE NOTE 9
14 13 12 11 10 9 8 7 6 5 4 3 2 1
SEE NOTE 10
COSECANT GENERATOR 1007524-
APPLICABLE DASH NO.
S/N

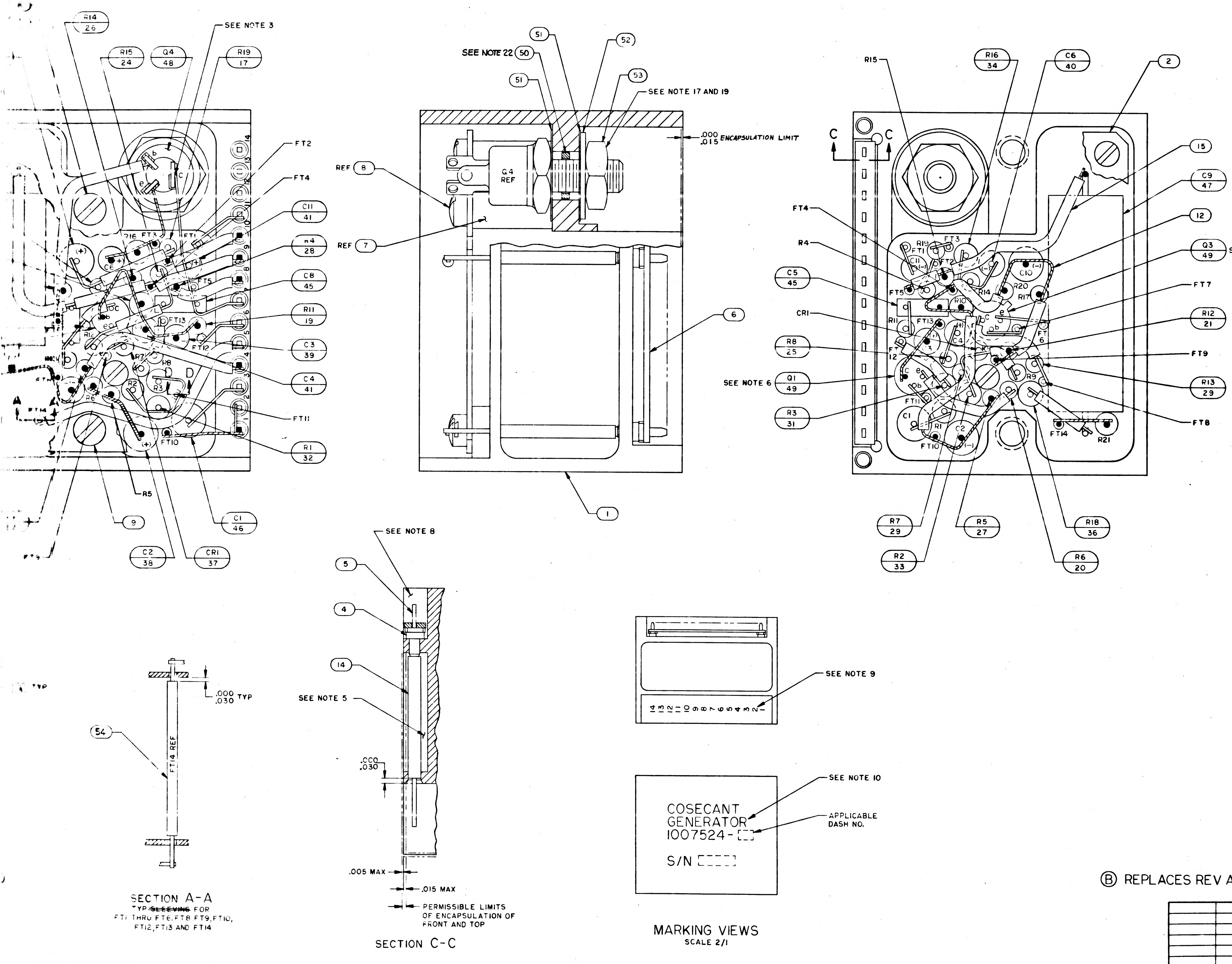
MARKING VIEWS
SCALE 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND1002005
3. SOLDER PER ND 1002071
4. ASSEMBLE FIND NO.4 TO FIND NO.5 PER ND 1002136
5. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
6. BOND Q2 AND C12 TO FIND NO.3 AND Q1,Q3 AND C9 TO FIND NO.2 PER ND 1002004 TYPE I
7. ~~BOND FIND NO.6 TO FIND NO.4 PER ND 1002237~~
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
11. AR DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
14. + DENOTES POSITIVE SIDE OF CAPACITOR
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. MOUNTING TORQUE FOR NUT OF FIND NO.48 TO BE 12-14 INCH POUNDS
18. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
19. APPLY SEALING COMPOUND MIL-S-22473 GRADE A TO NUT OF FIND NO. 48
20. TYPICAL SLEEVING FOR FIND NO. 17 THRU FIND NO. 37
21. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007524.
22. STAKE ITEM 50 TO ITEM 1 PER ND 1002009 METHOD #. J.
23. ~~CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND1002187 TYPE II.~~
24. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
25. EXCEPT FOR MODULE ~~THE HELICOIL~~ MOUNTING SURFACES, PAINT ALL SURFACES PER ~~ND1002110 TYPE II, AFTER ENCAPSULATION~~ ND1002279, USING 1010992 PRIMER AND ND1006809-4 PAINT. ~~USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS.~~ CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

1007524	REV LTR	SHT
	J	1

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 16330	5FEB65	WK
C	REVISED PER TDRR 17006	5 MAR 65	JWP
D	REVISED PER TDRR 19411	2JUN65	
E	REVISED PER TDRR 19486	9 JUN 65	WJK
F	REVISED PER TDRR 20143	19 JUN 65	DKD
G	REVISED PER TDRR 21122	31 JUL 65	SRA RWH
H	REVISED PER TDRR 22946	12 OCT 65	EF
J	REVISED PER TDRR 23888	17 NOV 65	JJJ
K	REVISED PER TDRR 26397	25 FEB 66	


R14 26
R15 24
Q4 48
R19 17
SEE NOTE 3
FT2
FT4
C11 41
R4 28
C8 45
R11 19
C3 39
C4 41
FT11
R1 32
C1 46
R5
9
C2 38
CR1 37
FT10
SEE NOTE 22
50
51
52
53
SEE NOTE 17 AND 19
.000 .015 ENCAPSULATION LIMIT
REF 8
REF 7
Q4 REF
6
1
R15
R16 34
C6 40
2
15
C9 47
12
Q3 49
SEE NOTE 6
FT7
R12 21
FT9
R13 29
FT8
FT4
R4
C5 45
CR1
R8 25
SEE NOTE 6
Q1 49
R3 31
R7 29
R5 27
R18 36
R2 33
R6 20
FT14
R21
C
C
SEE NOTE 8
5
4
14
SEE NOTE 5
.000 .030
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION OF FRONT AND TOP
SECTION C-C
54
FT14 REF
.000 .030 TYP
SECTION A-A
TYP SLEEVING FOR FT1 THRU FT6, FT8, FT9, FT10, FT12, FT13 AND FT14
SEE NOTE 9
14 13 12 11 10 9 8 7 6 5 4 3 2
SEE NOTE 10
COSECANT GENERATOR 1007524-
S/N
APPLICABLE DASH NO.
MARKING VIEWS
SCALE 2/1

Ⓑ REPLACES REV A WITH CHANGE

QTY 021	QTY 011	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
AR	—	SEE NOTE 26	MOISTUREPROOFING	55
AR	AR	1010848-2	WIRE, ELECTRICAL-NICKEL	54
☒	☒	1009509	SCHEMATIC	REF
1	1	MS 20341-10B	NUT, HEX	53
1	1	1008071-2	WASHER, FLAT	52
2	2	1008024-1	WASHER, INSULATOR	51
1	1	1008615	TEFLON SPACER	50
3	3	1010397-1	TRANSISTOR	49
1	1	1010269-1	TRANSISTOR	48
1	1	1010375-66	CAPACITOR	47
1	1	1010375-12	CAPACITOR	46
2	2	1010359-27	CAPACITOR	45
1	1	1010359-11	CAPACITOR	44
1	1	1006755-134	CAPACITOR	43
1	1	1006755-77	CAPACITOR	42
2	2	1006755-69	CAPACITOR	41
1	1	1006755-65	CAPACITOR	40
1	1	1006755-45	CAPACITOR	39
1	1	1006755-20	CAPACITOR	38
1	1	1010372-24	DIODE	37
1	1	1010368-11	RESISTOR	36
1	1	1010364-757	RESISTOR	35
1	1	1010364-749	RESISTOR	34
1	1	1010364-727	RESISTOR	33
1	1	1010364-666	RESISTOR	32
1	1	1010364-521	RESISTOR	31
1	1	1010364-93	RESISTOR	30
2	2	1006750-84	RESISTOR	29
1	1	1006750-77	RESISTOR	28
1	1	1006750-72	RESISTOR	27
1	1	1006750-70	RESISTOR	26
1	1	1006750-69	RESISTOR	25
1	1	1006750-64	RESISTOR	24
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1	1	1006750-44	RESISTOR	22
1	1	1006750-34	RESISTOR	21
1	1	1006750-20	RESISTOR	20
1	1	1006750-19	RESISTOR	19
1	1	1006750-18	RESISTOR	18
1	1	1006750-7	RESISTOR	17
	~~AR~~	~~1006776-22~~	~~INSULATION SLEEVING~~	16
AR	AR	1006776-21	INSULATION SLEEVING	15
AR	AR	1006776-20	INSULATION SLEEVING	14
	~~AR~~	~~1006757-8~~	~~WIRE, ELECTRICAL~~	13
AR	AR	1006757-1	WIRE, ELECTRICAL	12
4	4	1010485 - 42	SCREW, FILLISTER HD	11
2	2	1015135-015	SPACER	10
1	1	1010485-100	SCREW, FILLISTER HD	9
1	1	1010485-116	SCREW, FILLISTER HD	8
1	1	1015131	SPACER	7
1	1	1008540-14	GASKET, CONNECTOR MINAT	6
14	14	1006782-5	CONTACT, WRAPOST, MALE MINAT	5
14	14	1006775	INSULATOR, WRAPOST, MALE MINAT	4
1	1	1008599	WIRING BOARD, TOP	3
1	1	1008598	WIRING BOARD, BOTTOM	2
1	1	1007596	FRAME ASSY	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN A. C. Taylor DATE 27 Jan 65
CHECKED 5FEB65
APPROVAL
APPROVAL 2/8/65
NASA APPROVAL
MIT APPROVAL W Kupfer 9 Feb 65

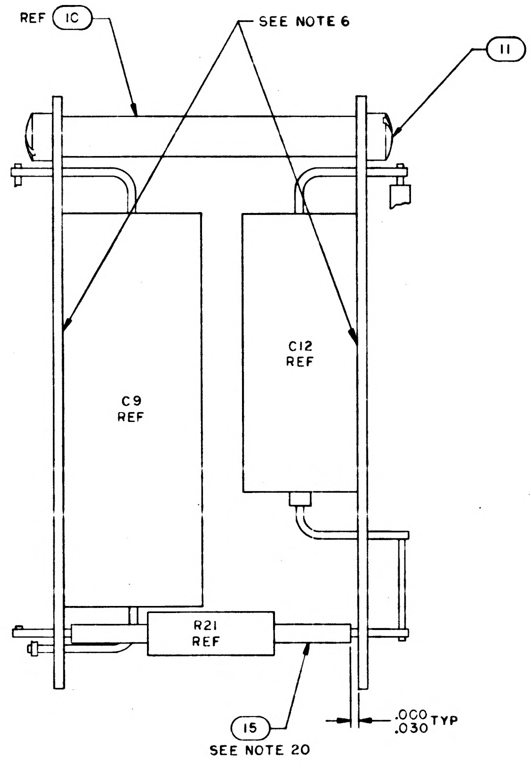
MANNED SPACECRAFT CENTER
HOUSTON TEXAS

COSECANT GENERATOR
MODULE ASSY

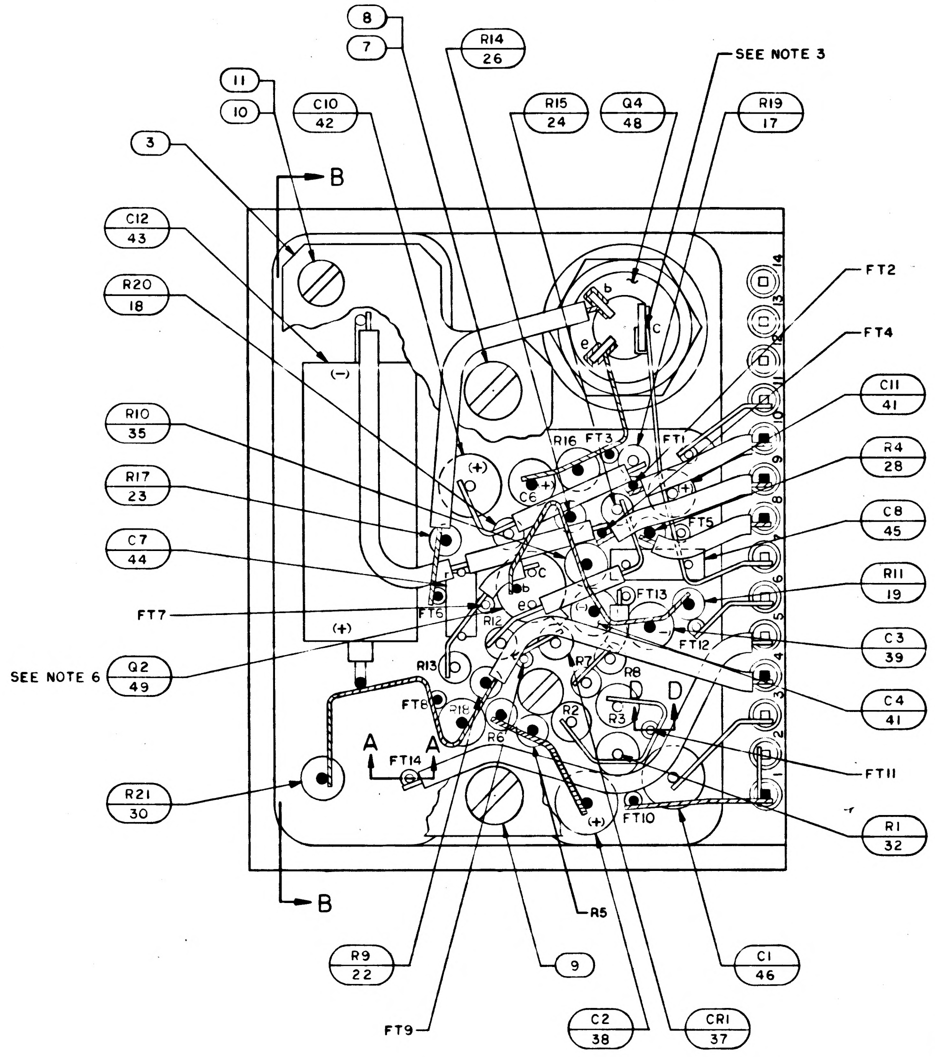
CODE IDENT NO 80230
SIZE J
NASA DRAWING NO 1007524
SCALE 5/1
WT
SHEET 1 OF 1

1007524 K

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.


REF 10
SEE NOTE 6
11 REF
C9 REF
C12 REF
R21 REF
15
SEE NOTE 20
.000 .030 TYP

SECTION B-B
WITH FIND NO.1 REMOVED


8
7
R14 26
SEE NOTE 3
11
10
C10 42
R15 24
Q4 48
R19 17
3
B
C12 43
R20 18
R10 35
R17 23
C7 44
FT7
SEE NOTE 6
Q2 49
R21 30
FT2
FT4
C11 41
R4 28
C8 45
R11 19
C3 39
C4 41
FT11
R1 32
R16
FT3
FT1
C6
FT5
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R18
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FT14
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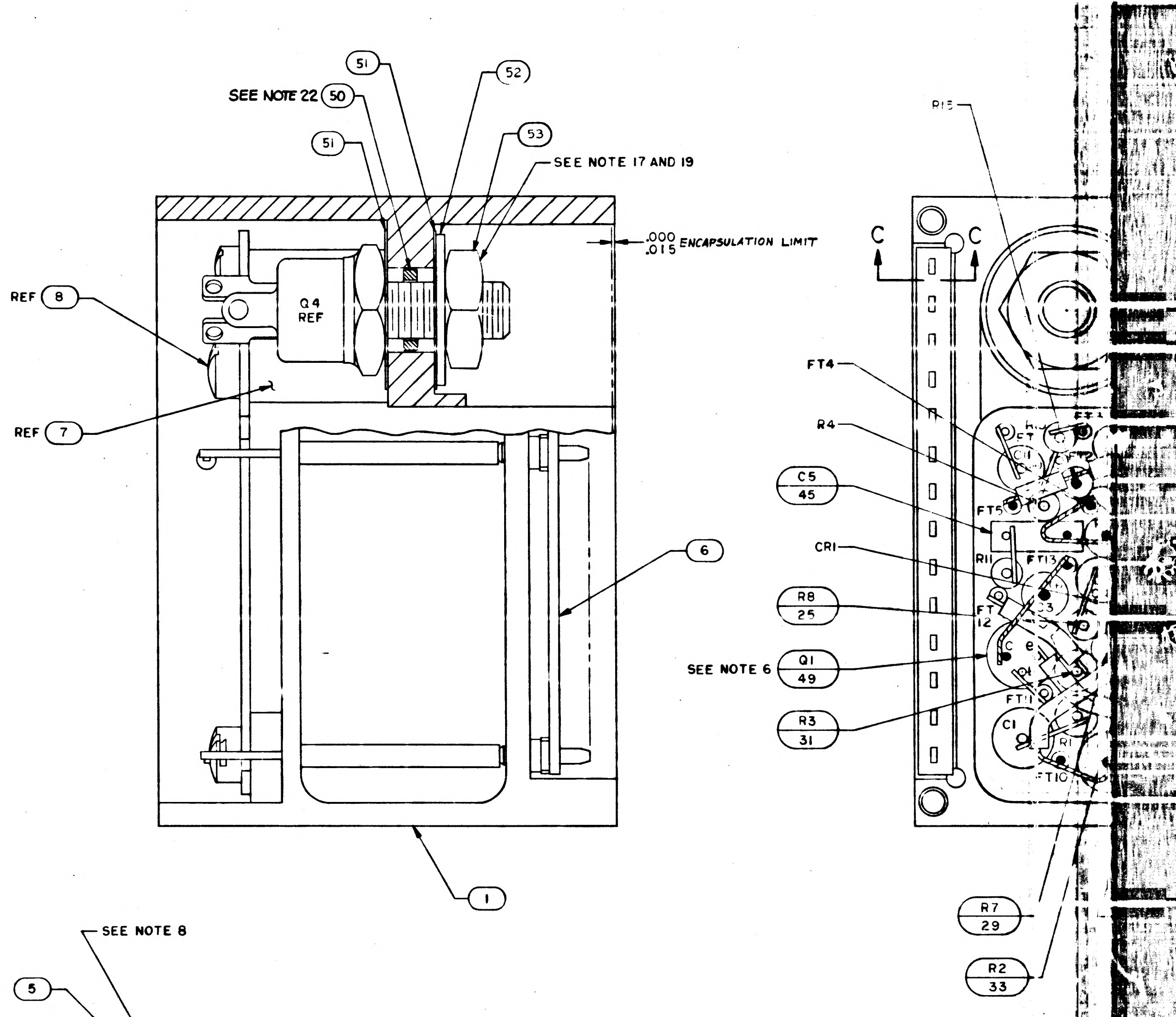
(+)
(−)
14 13 12 11 10 9 8 7 6 5 4 3 2 1
R9 22
9
R5
C1 46
FT9
C2 38
CR1 37


51
52
SEE NOTE 22
50
51
53
SEE NOTE 17 AND 19
.000 .015 ENCAPSULATION LIMIT
REF 8
Q4 REF
REF 7
6
1
R15
C
FT4
R4
C5 45
CR1
R8 25
SEE NOTE 6
Q1 49
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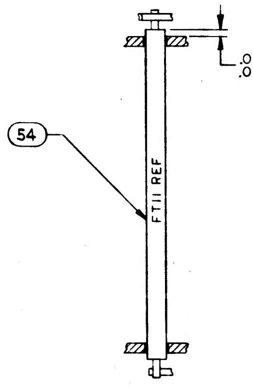
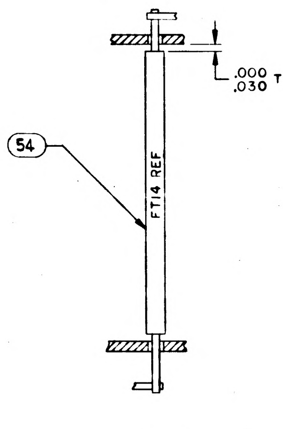
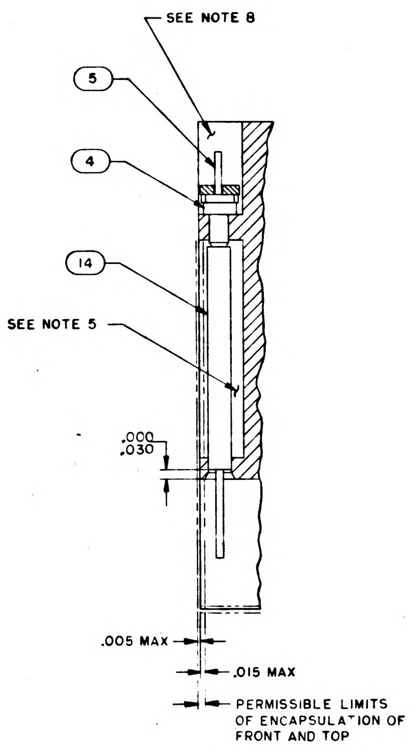
FT5
R11
FT13
FT12
C3
FT11
C1
R1
FT10
R7 29
R2 33


.000 .030 TYP
54
FT11 REF

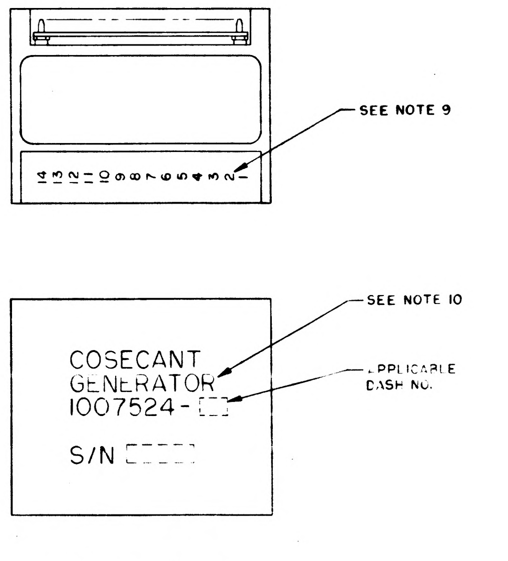
SECTION D-D
TYP ~~SLEEVING~~ FOR
FT7 AND FT11


.000 .030 TYP
54
FT14 REF

SECTION A-A
TYP ~~SLEEVING~~ FOR
FT1 THRU FT6, FT8, FT9, FT10,
FT12, FT13 AND FT14


SEE NOTE 8
5
4
14
SEE NOTE 5
.000 .030
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION OF FRONT AND TOP

SECTION C-C


14 13 12 11 10 9 8 7 6 5 4 3 2 1
SEE NOTE 9
COSECANT GENERATOR 1007524-
S/N
SEE NOTE 10
APPLICABLE DASH NO.

MARKING VIEWS
SCALE 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND1002005
3. SOLDER PER ND 1002071
4. ASSEMBLE FIND NO.4 TO FIND NO.5 PER ND 1002136
5. ENCAPSULATE PER ND 1002002. REMOVE ALL FLASHING
6. BOND Q2 AND C12 TO FIND NO.3 AND Q1, Q3 AND C9 TO FIND NO.2 PER ND 1002004 TYPE I
7. ~~BOND FIND NO. 6 TO FIND NO. 4 PER ND 1002237~~
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. MARK .060/.100 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
10. MARK .100/.140 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
11. AR DENOTES AS REQUIRED
12. FT DENOTES FEED THRU
13. K DENOTES CATHODE SIDE OF DIODE
14. + DENOTES POSITIVE SIDE OF CAPACITOR
15. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
16. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
17. MOUNTING TORQUE FOR NUT OF FIND NO.48 TO BE 12-14 INCH POUNDS
18. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
19. APPLY SEALING COMPOUND MIL-S-22473 GRADE A TO NUT OF FIND NO. 48
20. TYPICAL SLEEVING FOR FIND NO. 17 THRU FIND NO. 37
21. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007524.
22. STAKE ITEM 50 TO ITEM 1 PER ND 1002009 METHOD J.
23. ~~CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND1002187 TYPE II.~~
24. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
25. EXCEPT FOR MODULE ~~THE HELICOIL~~ MOUNTING SURFACES, PAINT ALL SURFACES PER ~~ND1002110 TYPE II, AFTER ENCAPSULATION;~~ ND1002279, USING 1010992 PRIMER AND ND1008809-4 PAINT. ~~USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS.~~ CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
26. MOISTUREPROOF PER ND1002292 AS REQUIRED BY FIND NO. (55) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.

1007524	REV LTR	SHT
	K	1

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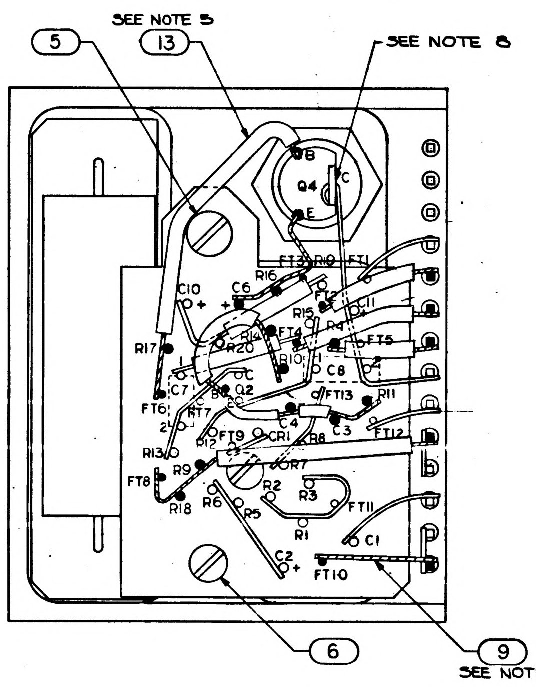
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL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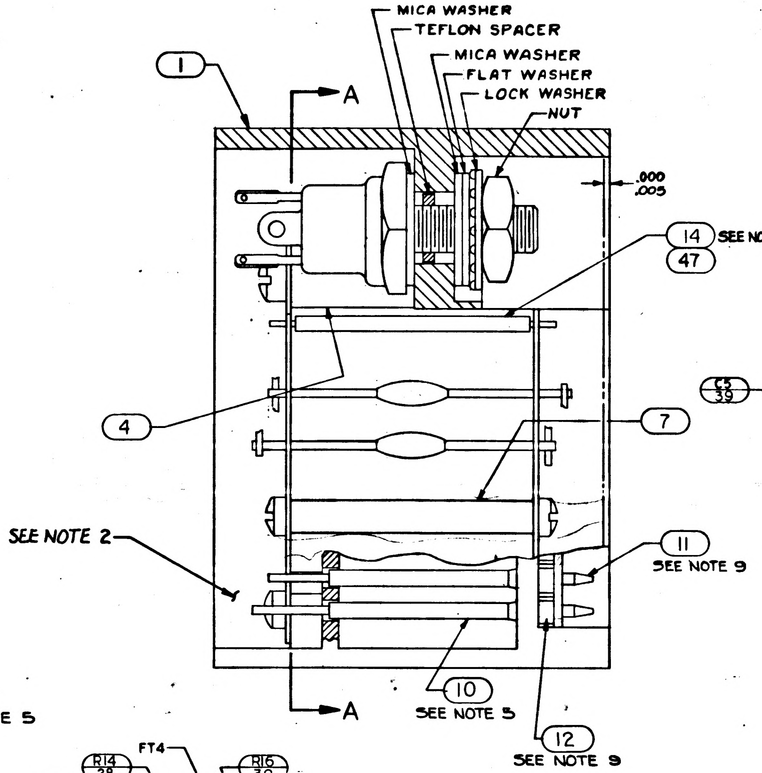
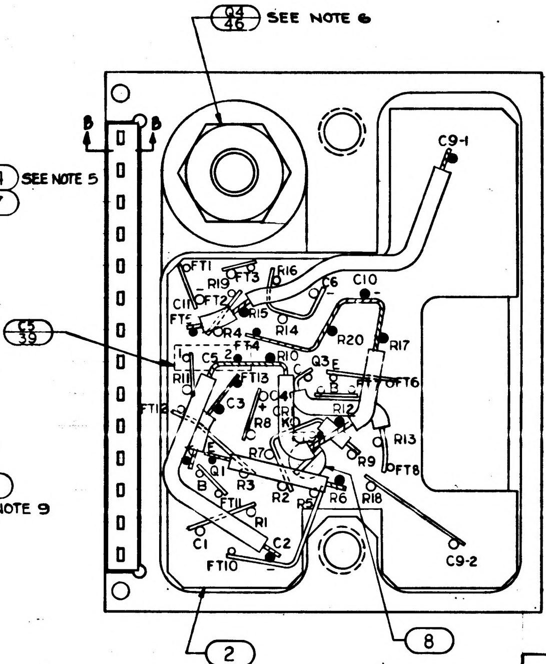
13
SEE NOTE 5
SEE NOTE 8
Q4
B
C
E
C10
C6
R16
FT3
R10
FT1
R15
FT2
R17
R20
R4
FT5
FT4
C8
C7
Q2
FT13
R11
FT6
C4
CR1
C3
FT12
R13
FT9
R7
R9
FT8
R2
R3
R6
R18
R5
FT11
R1
C1
C2
FT10
6
9
SEE NOTE 5


MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
1
A
.000
.005
14
47
SEE NOTE 5
4
7
SEE NOTE 2
11
SEE NOTE 9
10
SEE NOTE 5
12
SEE NOTE 9
A


Q4
46
SEE NOTE 6
B
B
C9-1
C5
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FT1
R19
FT3
R16
C6
C10
C11
FT2
R15
R14
R20
R17
FT4
R10
Q3
FT6
C5
R11
FT13
C3
FT12
R8
R12
R13
R7
R9
FT8
Q1
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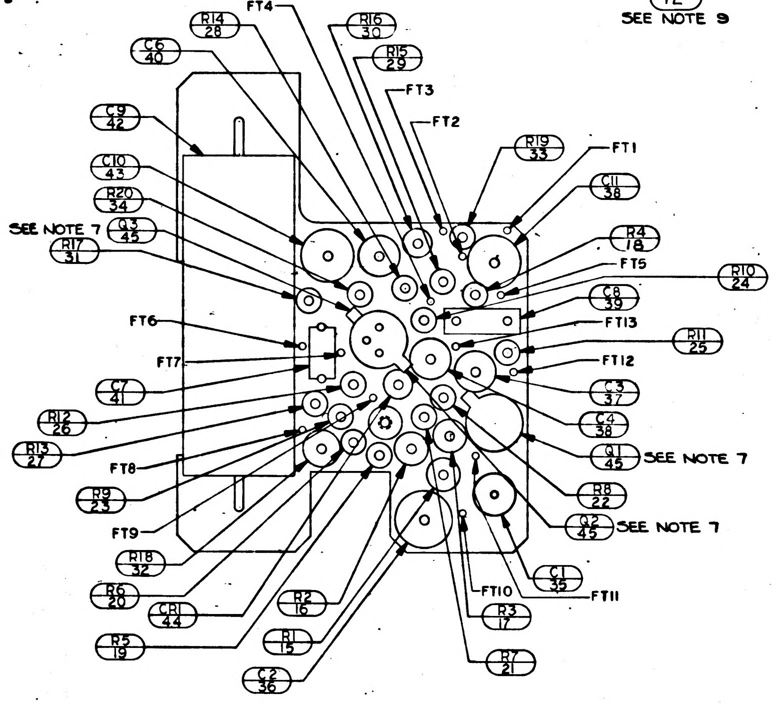
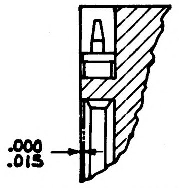
C1
C2
FT10
C9-2
2
8

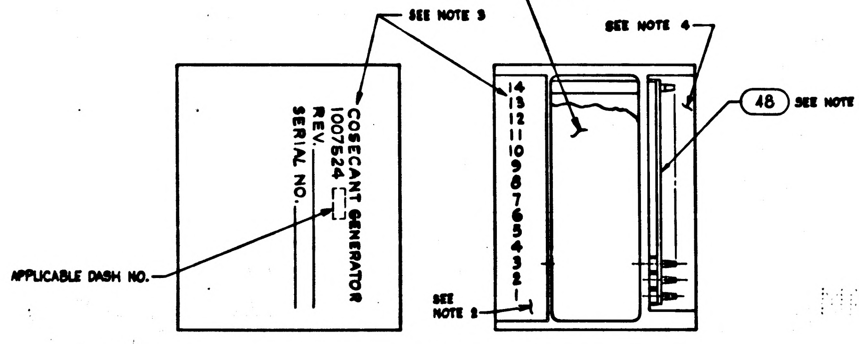

R14
28
FT4
R16
30
C6
40
R15
29
FT3
FT2
C9
42
R19
33
FT1
C11
38
C10
43
R20
34
SEE NOTE 7
Q3
45
R4
18
FT5
R17
31
R10
24
C8
39
FT6
FT13
R11
25
FT7
FT12
C7
41
C3
37
R12
26
C4
38
R13
27
Q1
45
SEE NOTE 7
FT8
R8
22
R9
23
FT9
Q2
45
SEE NOTE 7
R18
32
R6
20
CR1
44
R2
16
C1
35
FT10
FT11
R3
17
R5
19
R1
15
R7
21
C2
36

SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS



PARTIAL SECTION B-B

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
3. MARK PIN NUMBERS .060/.100 HIGH (WHITE) AND ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND1002023 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
4. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
5. AR DENOTES AS REQUIRED
6. MOUNTING TORQUE FOR ITEM 46, 12^{+2}_{-2} INCH POUNDS
7. TRANSISTORS TO BE CEMENTED IN PLACE PER ND1002004. TYPE I
8. SOLDER PER ND 1002071
9. ASSEMBLE PER ND1002136.
10. ON ITEMS 2 & 3, BROKEN PATH INDICATES INSULATION SLEEVING.
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.
PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR.
"B" INDICATES BASE LEAD OF TRANSISTOR
"E" INDICATES EMITTER LEAD OF TRANSISTOR
11. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005.
12. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
BLACK DOT AND CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING.
13. BOND ITEM 48 TO ITEM 12 PER ND 1002237
14. UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.
15. PROCURE PER PS 1007524
16. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.


SEE NOTE 3
SEE NOTE 2
SEE NOTE 4
COSECANT GENERATOR
1007524
REV.
SERIAL NO.
APPLICABLE DASH NO.
14
13
12
11
10
9
8
7
6
5
4
3
2
1
SEE NOTE 8
48
SEE NOTE 13

SCALE 2×1

			ON	EFFEC-TIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
					1009509	SCHEMATIC	
			1		1008540-14	GASKET, CONNECTOR MINIATURE	48
			AR		1006776-22	INSULATION, SLEEVING	47
			1		1010269-1	TRANSISTOR	46
			3		1010397-1	TRANSISTOR	45
			1		1010372-24	DIODE	44
			1		1006755-77	CAPACITOR	43
			1		1010375-66	↑	42
			1		1010359-11		41
			1		1006755-65		40
			2		1010359-27		39
			2		1006755-69		38
			1		1010375-124		37
			1		1006755-20		36
			1		1010375-12	CAPACITOR	35
			1		1006750-18	RESISTOR-FIXED	34
			1		1006750-7	↑ ↑	33
			1		1010368-11		32
			1		1006750-56		31
			1		1010364-749		30
			1		1006750-64		29
			1		1006750-70		28
			1		1006750-84		27
			1		1006750-34		26
			1		1006750-19		25
			1		1010364-757		24
			1		1006750-44		23
			1		1006750-69		22
			1		1006750-84		21
			1		1006750-20		20
			1		1006750-72		19
			1		1006750-77		18
			1		1010364-521		17
			1		1010364-727		16
			1		1010364-666	RESISTOR FIXED	15
			AR		1006787-2	WIRE-FEED THRU #22 AWG	14
			AR		1006776-21	INSULATION SLEEVING	13
			14		1006775	INSULATOR, WRAPOST-MALE MIN	12
			14		1006782-5	CONTACT, BLADE EDGE CONN.	11
			AR		1006776-20	INSULATION SLEEVING	10
			AR		1006757-1	WIRE, NICKEL RIBBON	9
			2		AN500D-2-4	SCREW	8
			1		1015135-015	SPACER	7
			1		AN500D-4-4	SCREW, PAN HEAD	6
			1		AN500D-4-12	SCREW, PAN HEAD	5
			1		1015131	SPACER	4
			1		1015157	WAFER BOARD, UPPER	3
			1		1015156	WAFER BOARD, LOWER	2
			1		1007596	FRAME ASSY	1

QUANTITY REQUIRED
LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007579		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX ±.02 XXX ±.005 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG NO
CONTRACT NAS9-4065
DRAWN Ozgel 14 Aug 64
CHECKED A. Udench 27 Aug 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COSECANT GENERATOR
MODULE ASSY

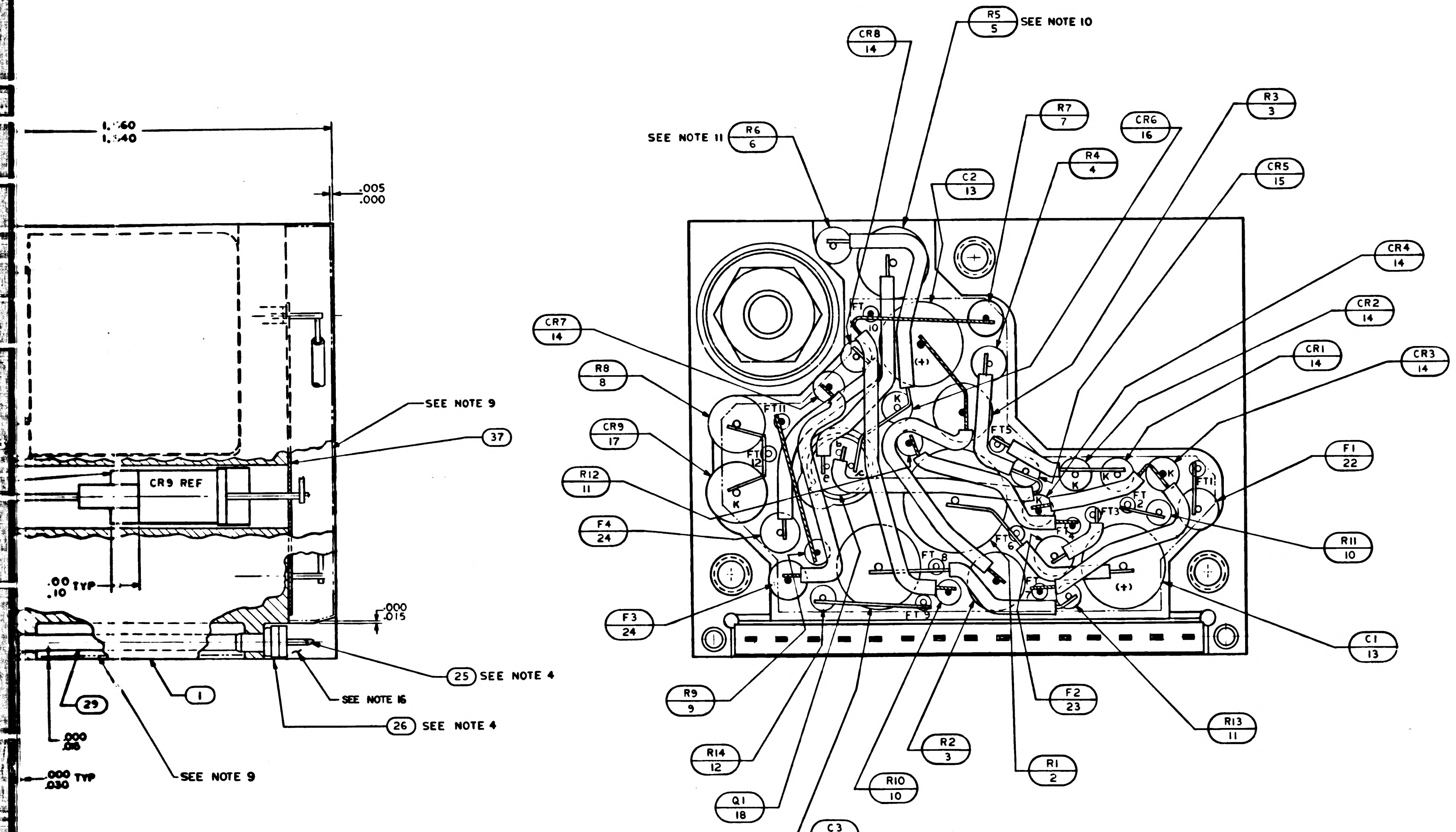
CODE IDENT NO. | SIZE E | NASA DRAWING NO. 1007524
SCALE 4X | WT | SHEET 1 OF 1

MASTER

1007524

1007525 A

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16834	6 MAR 65	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.005
.000
SEE NOTE 9
37
CR9 REF
.00
.10 TYP
.000
.015
29
.000
.06
.000 TYP
.030
1
25 SEE NOTE 4
SEE NOTE 16
26 SEE NOTE 4
SEE NOTE 9
R5 5 SEE NOTE 10
CR8 14
SEE NOTE 11 R6 6
R7 7
CR6 16
R3 3
C2 13
R4 4
CR5 15
CR4 14
CR2 14
CR7 14
R8 8
CR1 14
CR3 14
CR9 17
R12 11
F1 22
F4 24
R11 10
F3 24
C1 13
R9 9
F2 23
R13 11
R14 12
R2 3
R1 2
Q1 18
R10 10
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FT10
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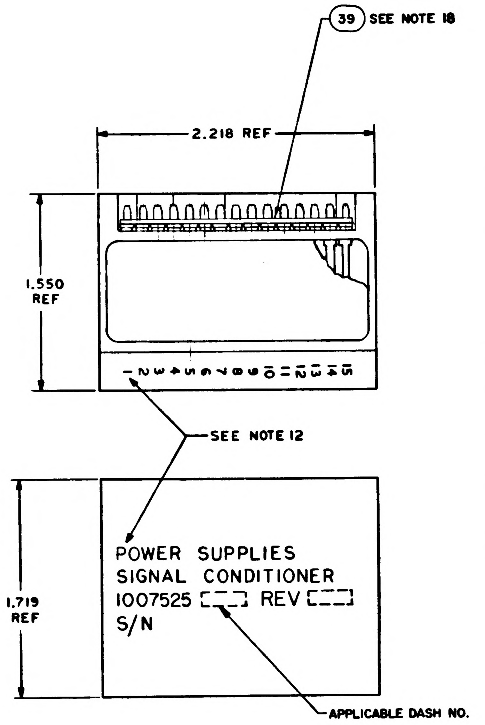
39 SEE NOTE 18
2.218 REF
1.550 REF
1.719 REF
SEE NOTE 12
POWER SUPPLIES
SIGNAL CONDITIONER
1007525 [ ] REV [ ]
S/N
APPLICABLE DASH NO.

MARKING VIEWS
SCALE 2/1

LIST OF MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
		REF	1010120	SCHEMATIC
1		39	1008540-15	GASKET, CONNECTOR MINIATURE
1		38	1008174	INSULATOR
1		37	1008173	INSULATOR
1		36	1008025-2	INSULATOR, BUSHING
1		35	1008025-1	INSULATOR BUSHING
1		34	MS 20341-10B	NUT, HEX
1		33	1008071-2	WASHER, FLAT
2		32	1008024-1	WASHER, INSULATOR
1		31	1008021-1	BUSHING, INSULATOR
AR		30	MIL-I-15126	INSUL TAPE TYPE MFT2.5, 1/2 WIDE
AR		29	1006776-22	INSULATION SLEEVING
AR		28	1006757-1	WIRE, ELECTRICAL
AR		27	1006787-2	WIRE, ELECTRICAL
15		26	1006775	INSULATOR, WRAPOST-MALE, MINAT
15		25	1006782-5	CONTACT, WRAPOST-MALE, MINAT
2		24	1000170-6	FUSE
1		23	1000170-4	FUSE
1		22	1000170-2	FUSE
1		21	1010751	TRANSFORMER
1		20	1010398-1	TRANSISTOR
1		19	1010269-1	TRANSISTOR
1		18	1010633-1	TRANSISTOR
1		17	1010829-25	DIODE
1		16	1010259	DIODE
1		15	1010372-24	DIODE
6		14	1010362-001	DIODE
3		13	1006789-002	CAPACITOR
1		12	1006750-49	RESISTOR
2		11	1006750-56	RESISTOR
2		10	1006750-43	RESISTOR
1		9	1010369-141	RESISTOR
1		8	1010389-50	RESISTOR
1		7	1010364-225	RESISTOR
1		6	1010364 - SEE NOTE 11	RESISTOR
1		5	1010267 - SEE NOTE 10	RESISTOR
1		4	1010364-353	RESISTOR
2		3	1010389-39	RESISTOR
1		2	1010452-129	RESISTOR
1		1	1008180	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007460		
1007580		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN S. Agne DATE 21 AUG 64
CHECKED A. Udovich 28 AUG 64
APPROVAL
APPROVAL 10-6-64
NASA APPROVAL 10-6-64
MIT APPROVAL 6 Oct 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLIES
MODULE ASSEMBLY -
SIGNAL CONDITIONER

CODE IDENT NO | SIZE J | NASA DRAWING NO. 1007525
SCALE 5/1 | WT | SHEET 1 OF 1

1007525 | REV LTR A | SH NO. 1 OF 1

2r

271007525

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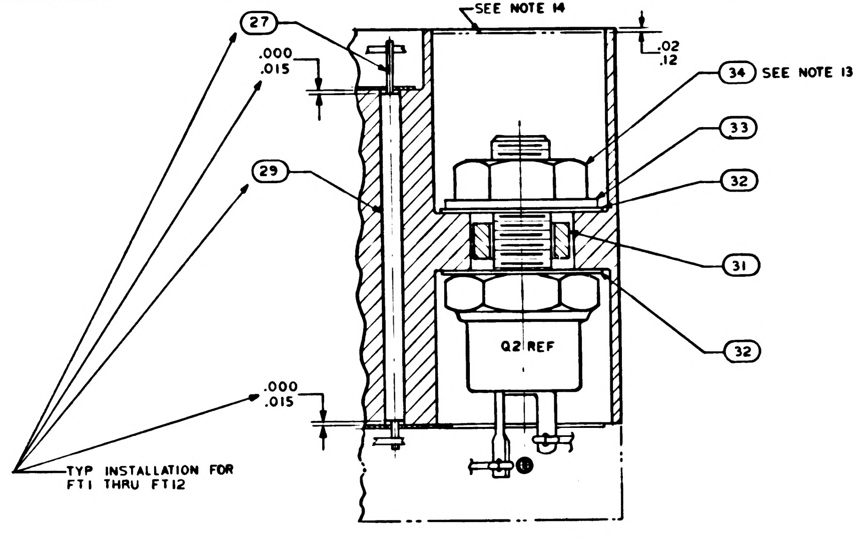
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Q2 REF
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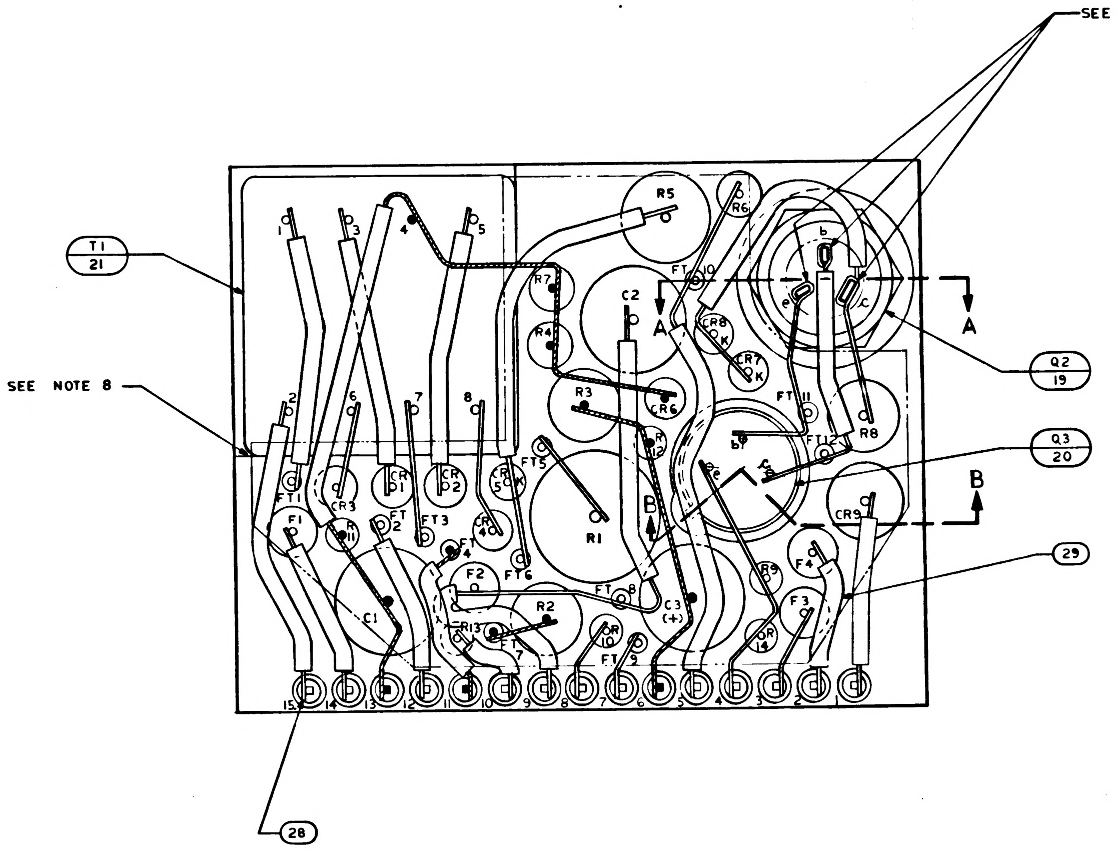
TYP INSTALLATION FOR
FT1 THRU FT12

PARTIAL SECTION A-A


SEE NOTE 3
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SEE NOTE 8
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R4
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CR6
CR8
CR7
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FT12
R8
Q2
19
Q3
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A
B
R1
CR9
CR3
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F4
C1
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C3 (+)
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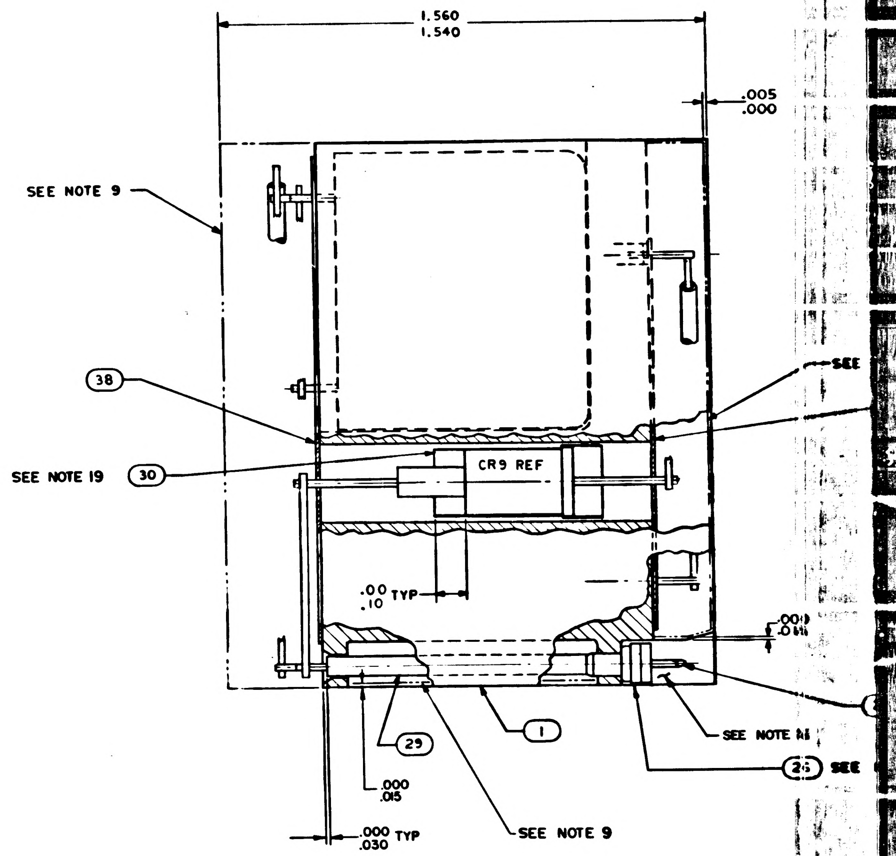
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SEE NOTE 9
38
SEE NOTE 19
30
CR9 REF
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TYP
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.000
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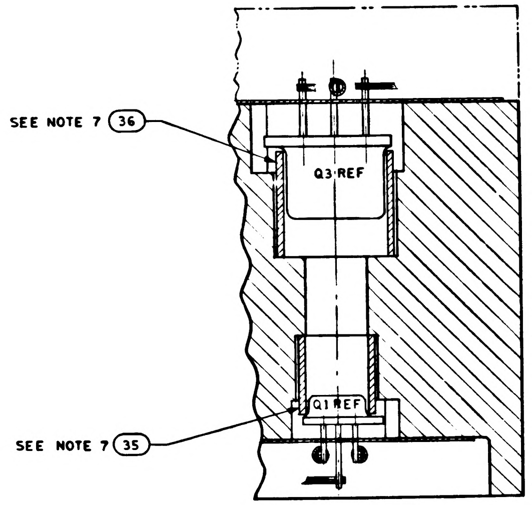
TYP
1
SEE NOTE 9
SEE NOTE 16
25
SEE


SEE NOTE 7
36
Q3 REF
Q1 REF
SEE NOTE 7
35

PARTIAL SECTION B-B

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005
3. SOLDER PER ND1002071
4. ASSEMBLE FIND NO. 25 AND FIND NO 26 PER ND1002136.
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. STAKE ALL ELECTRICAL COMPONENTS, FIND NO. 35 AND FIND NO. 36 PER ND1002009 METHOD C AND CENTRALIZE
8. BOND ALL MATING SURFACES OF FIND NO. 21 TO FIND NO. 1 PER ND 1002004 TYPE I
9. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
10. VALUE TO BE DETERMINED BY ELECTRICAL TEST, FIND NO. 5 TO BE SELECTED FROM CHART A PER ATP 1007125
11. VALUE TO BE DETERMINED BY ELECTRICAL TEST. FIND NO. 6 TO BE SELECTED FROM CHART B PER ATP 1007125
12. MARK PIN NUMBERS $^{.100}_{.080}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $^{.140}_{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
13. MOUNTING TORQUE FOR FIND NO. 34 TO BE 12 TO 14 INCH POUNDS
14. FILL PER ND1002117
15. AR DENOTES AS REQUIRED

16. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
17. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
18. BOND FIND NO. 39 TO FIND NO. 26 PER ND 1002237
19. BOND FIND NO. 30 TO FIND NO. 17 CURE AT AIR TEMP. BEFORE ASSEMBLING TO FIND NO. 1
20. ON ITEM FIND NO'S. 37 AND 38 :
    - BROKEN PATHS INDICATE INSULATION SLEEVING
    - FT DENOTES FEED THRU
    - K DENOTES CATHODE SIDE OF DIODE
    - + DENOTES POSITIVE SIDE OF CAPACITOR
    - C INDICATES COLLECTER LEAD OF TRANSISTOR
    - E INDICATES EMITTER LEAD OF TRANSISTOR
    - B INDICATES BASE LEAD OF TRANSISTOR
21. PROCURE PER PS-1007125

CHART A
(R5, FIND NO. 5 – REF)

PART NUMBER	VALUE OHMS
1010267 – 171	1470
1010267 – 172	1500
1010267 – 173	1540
1010267 – 174	1580
1010267 – 175	1620
1010267 – 176	1650
1010267 – 177	1690

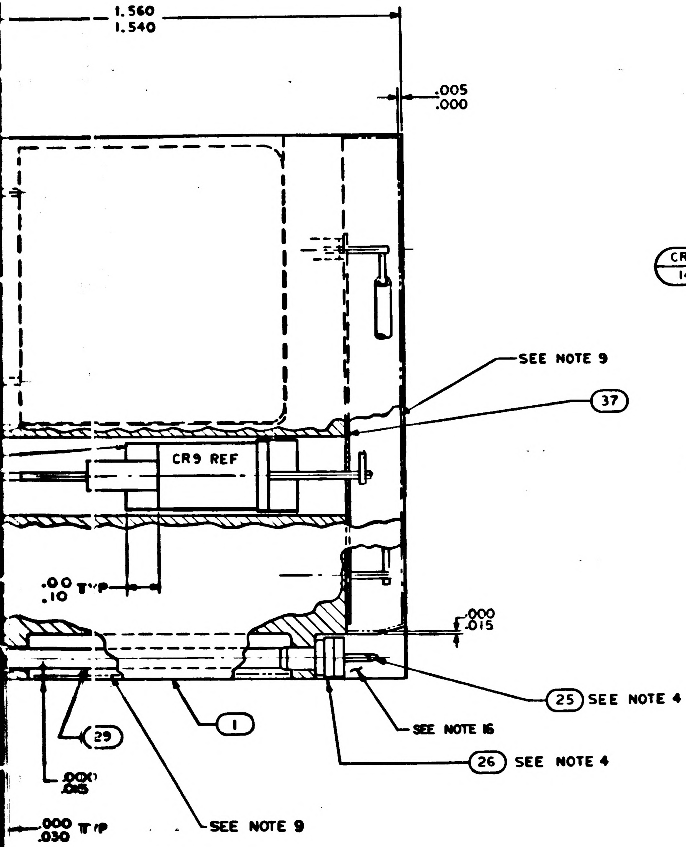
CHART B
(R6, FIND NO. 6 – REF)

PART NUMBER	VALUE OHMS
1010364 – 255	1050
1010364 – 257	1070
1010364 – 259	1100
1010364 – 261	1130
1010364 – 263	1150
1010364 – 265	1180

	REV LTR	SH NO.
1007525	A	1 OF 1

1007525 B

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16834	6 MAR 65	
B	REVISED PER TDRR 17303		



1.560
1.540
.005
.000
SEE NOTE 9
37
CR9 REF
.00 TYP
.10
.000
.015
25 SEE NOTE 4
SEE NOTE 16
26 SEE NOTE 4
1
29
.000
.015
.000 TYP
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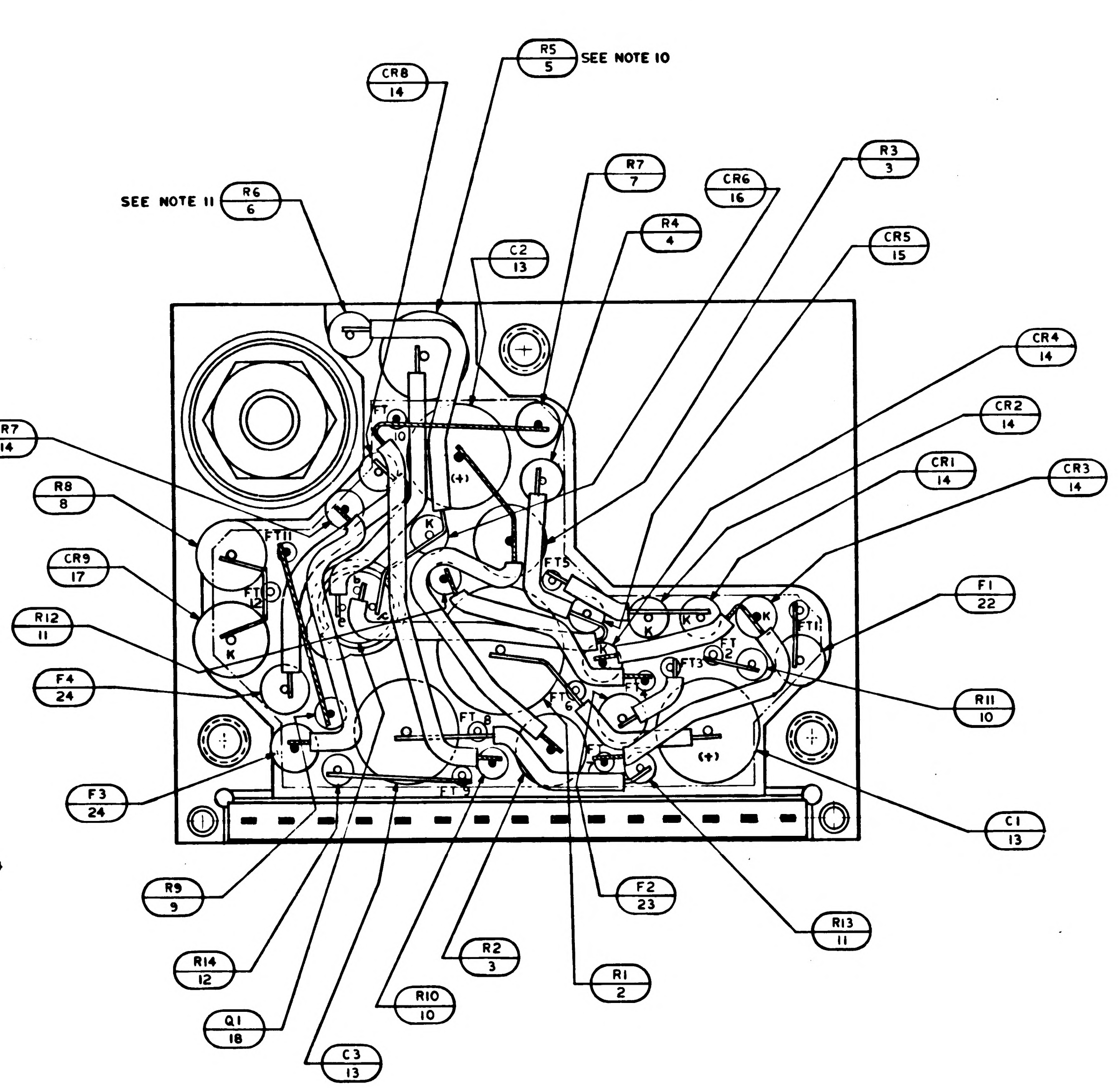
SEE NOTE 9



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CR8 14
SEE NOTE 11 R6 6
R7 7
CR6 16
R3 3
C2 13
R4 4
CR5 15
CR4 14
CR2 14
CR7 14
CR1 14
CR3 14
R8 8
CR9 17
R12 11
F1 22
F4 24
R11 10
F3 24
C1 13
R9 9
F2 23
R13 11
R2 3
R1 2
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C3 13
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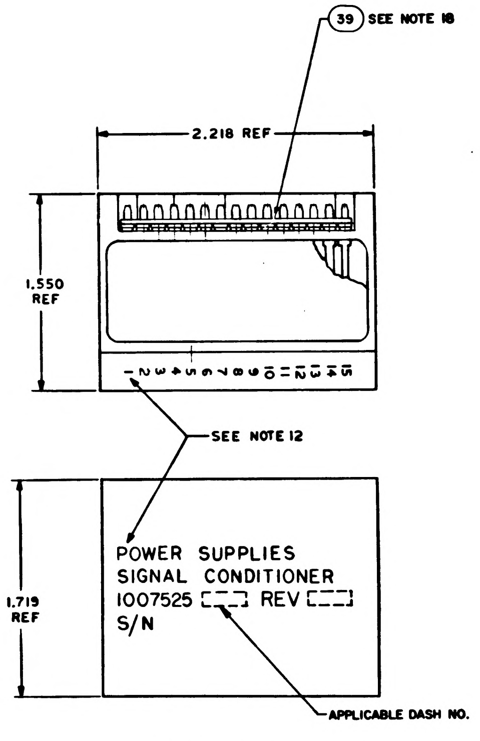

39 SEE NOTE 18
2.218 REF
1.550 REF
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
SEE NOTE 12
1.719 REF
POWER SUPPLIES
SIGNAL CONDITIONER
1007525 [ ] REV [ ]
S/N
APPLICABLE DASH NO.

MARKING VIEWS
SCALE 2/1

				EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
					REF	1010120	SCHEMATIC
			1		39	1008540-15	GASKET, CONNECTOR MINIATURE
			1		38	1008174	INSULATOR
			1		37	1008173	INSULATOR
			1		36	1008025-2	INSULATOR, BUSHING
			1		35	1008025-1	INSULATOR BUSHING
			1		34	MS 20341-10B	NUT, HEX
			1		33	1008071-2	WASHER, FLAT
			2		32	1008024-1	WASHER, INSULATOR
			1		31	1008021-1	BUSHING, INSULATOR
			AR		30	MIL-I-15126	INSUL TAPE TYPE MFT2.5, 1/2 WIDE
			AR		29	1006776-22	INSULATION SLEEVING
			AR		28	1006757-1	WIRE, ELECTRICAL
			AR		27	1006787-2	WIRE, ELECTRICAL
			15		26	1006775	INSULATOR, WRAPOST-MALE, MINAT
			15		25	1006782-5	CONTACT, WRAPOST-MALE, MINAT
			2		24	1000170-6	FUSE
			1		23	1000170-4	FUSE
			1		22	1000170-2	FUSE
			1		21	1010751	TRANSFORMER
			1		20	1010398-1	TRANSISTOR
			1		19	1010269-1	TRANSISTOR
			1		18	1010633-1	TRANSISTOR
			1		17	1010829-25	DIODE
			1		16	1010259	DIODE
			1		15	1010372-24	DIODE
			6		14	1010362-001	DIODE
			3		13	1006789-002	CAPACITOR
			1		12	1006750-49	RESISTOR
			2		11	1006750-56	RESISTOR
			2		10	1006750-43	RESISTOR
			1		9	1010369-141	RESISTOR
			1		8	1010389-50	RESISTOR
			1		7	1010364-225	RESISTOR
			1		6	1010364 - SEE NOTE 11	RESISTOR
			1		5	1010267 - SEE NOTE 10	RESISTOR
			1		4	1010364-353	RESISTOR
			2		3	1010389-39	RESISTOR
			1		2	1010452-129	RESISTOR
			1		1	1008180	HEATSINK
			011				

QUANTITY REQUIRED — LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007460		
1007580		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —//—
HEAT TREATMENT —//—
FINAL FINISH —//—

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN S. Agne DATE 21 AUG 64
CHECKED A. Udnaik 28 AUG 64
APPROVAL
APPROVAL 10-6-64
NASA APPROVAL 10-6-64
MIT APPROVAL 6 Oct 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLIES
MODULE ASSEMBLY -
SIGNAL CONDITIONER

CODE IDENT NO. SIZE J NASA DRAWING NO. 1007525
SCALE 5/1 WT SHEET 1 OF 1

1007525 REV LTR B SH NO. 1 OF 1

2H

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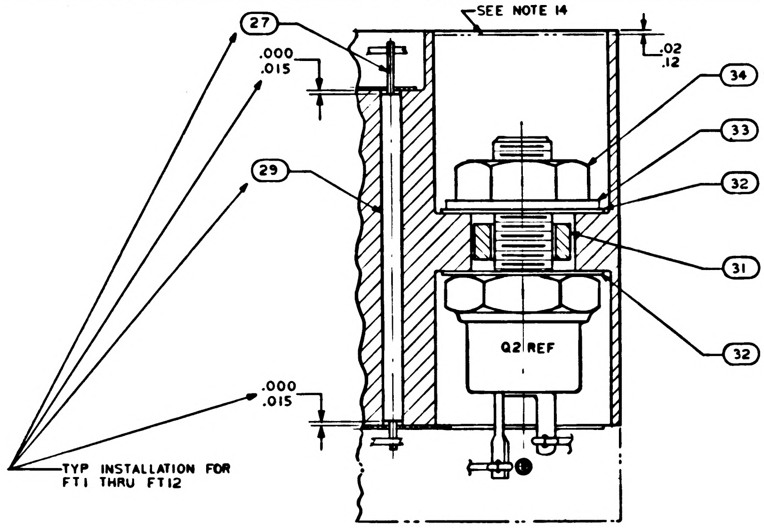
SEE NOTE 14
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34 SEE NOTE 13
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Q2 REF
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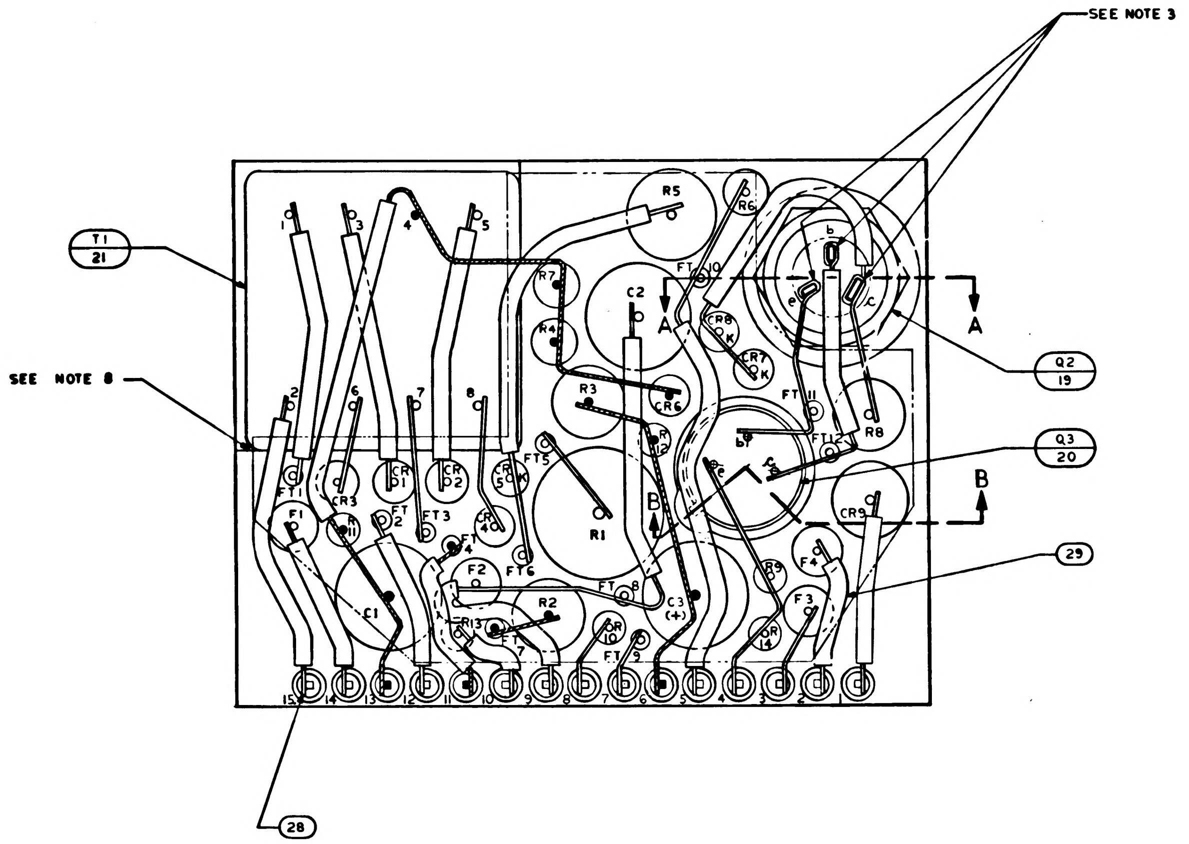
TYP INSTALLATION FOR FT1 THRU FT12

PARTIAL SECTION A-A


SEE NOTE 3
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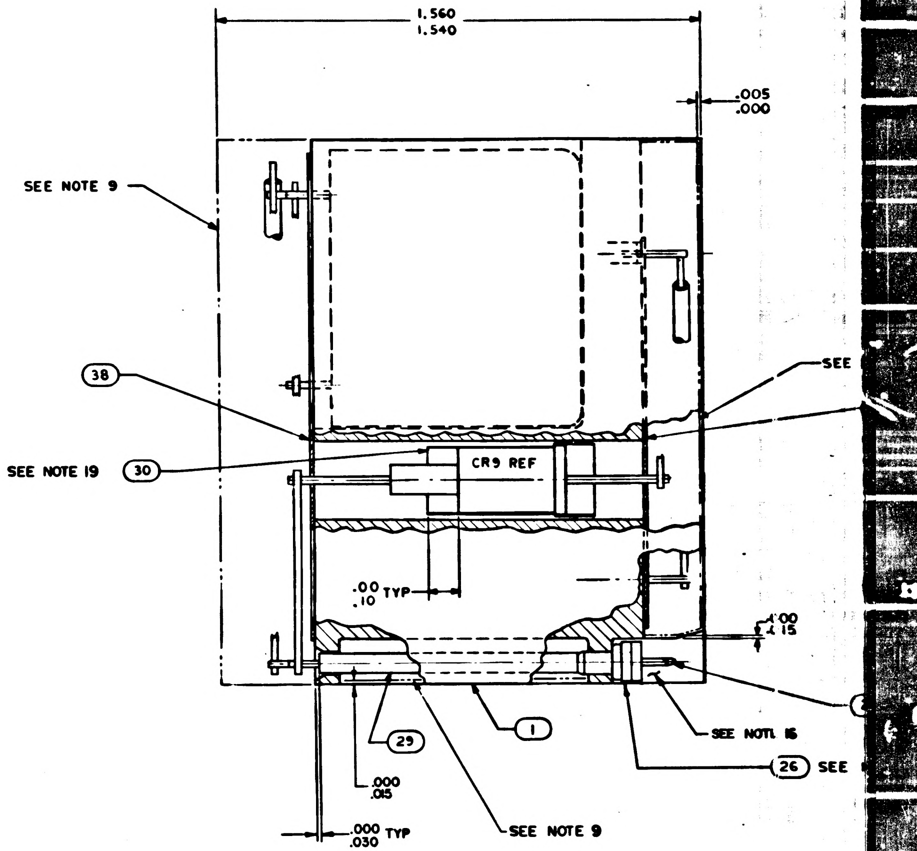
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SEE NOTE 9
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SEE NOTE 9
SEE NOTE 16
26 SEE

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005
3. SOLDER PER ND1002071
4. ASSEMBLE FIND NO. 25 AND FIND NO 26 PER ND1002136.
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. STAKE ALL ELECTRICAL COMPONENTS, FIND NO. 35 AND FIND NO. 36 PER ND1002009 METHOD C AND CENTRALIZE
8. BOND ALL MATING SURFACES OF FIND NO. 21 TO FIND NO. 1 PER ND 1002004 TYPE I
9. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
10. VALUE TO BE DETERMINED BY ELECTRICAL TEST, FIND NO. 5 TO BE SELECTED FROM CHART A PER ATP 1007125
11. VALUE TO BE DETERMINED BY ELECTRICAL TEST. FIND NO. 6 TO BE SELECTED FROM CHART B PER ATP 1007125
12. MARK PIN NUMBERS $\frac{.100}{.080}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
13. MOUNTING TORQUE FOR FIND NO. 34 TO BE 12 TO 14 INCH POUNDS
14. FILL PER ND1002117
15. AR DENOTES AS REQUIRED

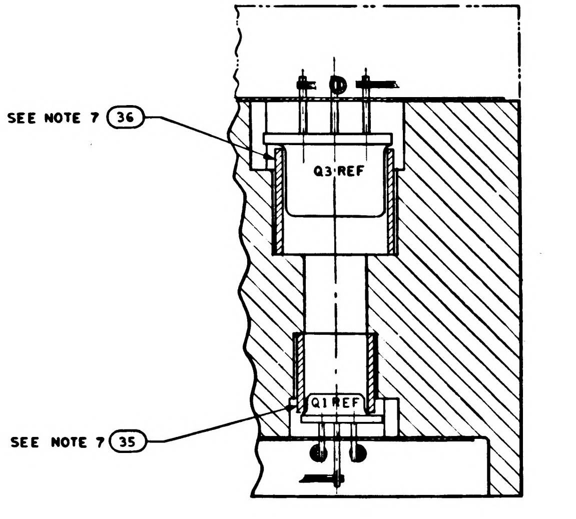
16. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
17. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
18 BOND FIND NO. 39 TO FIND NO. 26 PER ND 1002237
19. BOND FIND NO. 30 TO FIND NO. 17 CURE AT AIR TEMP. BEFORE ASSEMBLING TO FIND NO. 1
20. ON ITEM FIND NO'S. 37 AND 38 :
    - BROKEN PATHS INDICATE INSULATION SLEEVING
    - FT DENOTES FEED THRU
    - K DENOTES CATHODE SIDE OF DIODE
    - + DENOTES POSITIVE SIDE OF CAPACITOR
    - C INDICATES COLLECTER LEAD OF TRANSISTOR
    - E INDICATES EMITTER LEAD OF TRANSISTOR
    - B INDICATES BASE LEAD OF TRANSISTOR
21. PROCURE PER PS-1007125
22. *BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.*

CHART A
(R5, FIND NO. 5 – REF)

PART NUMBER	VALUE OHMS
1010267 – 171	1470
1010267 – 172	1500
1010267 – 173	1540
1010267 – 174	1580
1010267 – 175	1620
1010267 – 176	1650
1010267 – 177	1690

CHART B
(R6, FIND NO. 6 – REF)

PART NUMBER	VALUE OHMS
1010364 – 255	1050
1010364 – 257	1070
1010364 – 259	1100
1010364 – 261	1130
1010364 – 263	1150
1010364 – 265	1180

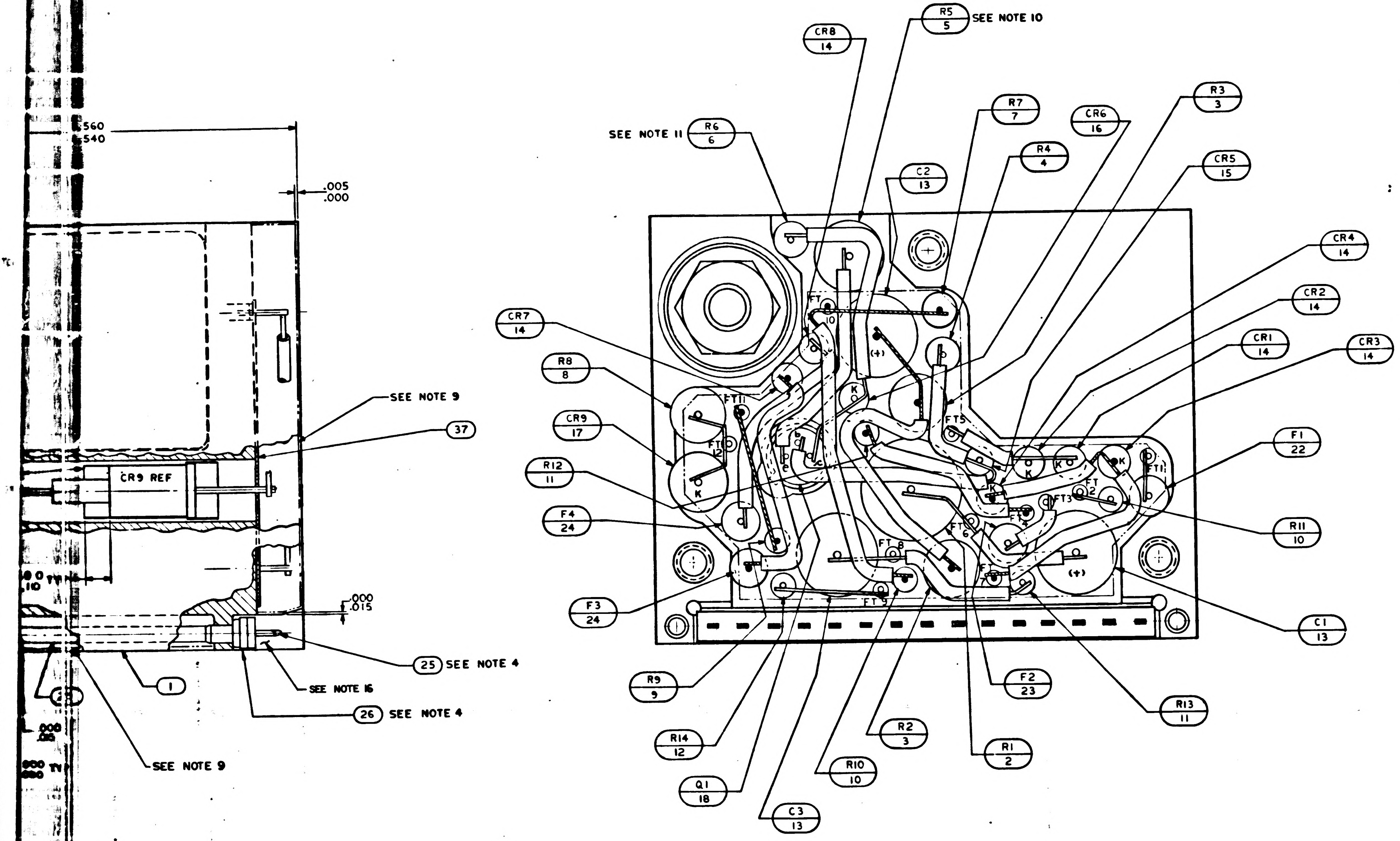

SEE NOTE 7
36
Q3 REF
SEE NOTE 7
35
Q1 REF

PARTIAL SECTION B-B

1007525	REV LTR	SH NO.
	B	1 OF 1

1007525 C

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16834	5 MAR 65	R.M.T.
B	REVISED PER TDRR 17303	12 MAR -65	CP
C	REVISED PER TDRR 19452	4 JUN 65	EF



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CR9 REF
SEE NOTE 9
37
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25 SEE NOTE 4
SEE NOTE 16
26 SEE NOTE 4
SEE NOTE 9
R5 5 SEE NOTE 10
CR8 14
SEE NOTE 11 R6 6
C2 13
R7 7
R4 4
CR6 16
R3 3
CR5 15
CR4 14
CR2 14
CR1 14
CR3 14
CR7 14
R8 8
CR9 17
R12 11
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C1 13
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R2 3
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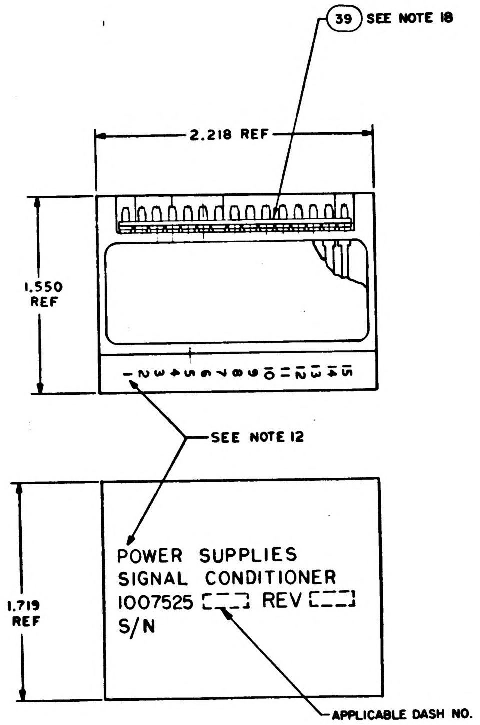

39 SEE NOTE 18
2.218 REF
1.550 REF
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
SEE NOTE 12
POWER SUPPLIES
SIGNAL CONDITIONER
1007525 REV
S/N
1.719 REF
APPLICABLE DASH NO.

MARKING VIEWS
SCALE 2/1

QUANTITY REQUIRED 011	EFFECTIVITY	FIND NO	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
		REF	1010120	SCHEMATIC
1		39	1008540-15	GASKET, CONNECTOR MINIATURE
1		38	1008174	INSULATOR
1		37	1008173	INSULATOR
1		36	1008025-2	INSULATOR, BUSHING
1		35	1008025-1	INSULATOR BUSHING
1		34	MS 20341-10B	NUT, HEX
1		33	1008071-2	WASHER, FLAT
2		32	1008024-1	WASHER, INSULATOR
1		31	1008021-1	BUSHING, INSULATOR
AR		30	MIL-I-15126	INSUL TAPE TYPE MFT2.5, 1/2 WIDE
AR		29	1006776-22	INSULATION SLEEVING
AR		28	1006757-1	WIRE, ELECTRICAL
AR		27	1006787-2	WIRE, ELECTRICAL
15		26	1006775	INSULATOR, WRAPOST-MALE, MINAT
15		25	1006782-5	CONTACT, WRAPOST-MALE, MINAT
2		24	1000170-6	FUSE
1		23	1000170-4	FUSE
1		22	1000170-2	FUSE
1		21	1010751	TRANSFORMER
1		20	1010398-1	TRANSISTOR
1		19	1010269-1	TRANSISTOR
1		18	1010633-1	TRANSISTOR
1		17	1010829-25	DIODE
1		16	1010259	DIODE
1		15	1010372-24	DIODE
6		14	1010362-001	DIODE
3		13	1006789-002	CAPACITOR
1		12	1006750-49	RESISTOR
2		11	1006750-56	RESISTOR
2		10	1006750-43	RESISTOR
1		9	1010369-141	RESISTOR
1		8	1010389-50	RESISTOR
1		7	1010364-225	RESISTOR
1		6	1010364 - SEE NOTE 11	RESISTOR
1		5	1010267 - SEE NOTE 10	RESISTOR
1		4	1010364-353	RESISTOR
2		3	1010389-39	RESISTOR
1		2	1010452-129	RESISTOR
1		1	1008180	HEATSINK

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007460		
1007580		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —//—
HEAT TREATMENT —//—
FINAL FINISH —//—

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN S. Agne DATE 21AUG64
CHECKED A. Udnaich 28AUG64
APPROVAL
APPROVAL 10-6-64
NASA APPROVAL 10-6-64
MIT APPROVAL 6Oct64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLIES
MODULE ASSEMBLY -
SIGNAL CONDITIONER

CODE IDENT NO.
SIZE J
NASA DRAWING NO 1007525
SCALE 5/1
WT
SHEET 1 OF 1

1007525

(2M)

1007525 REV LTR C SH NO. 1 OF 1

2/1007525

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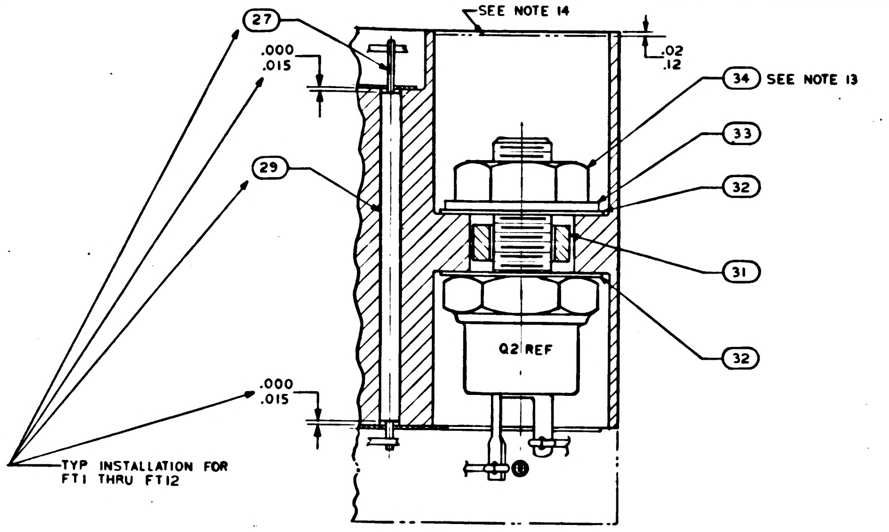
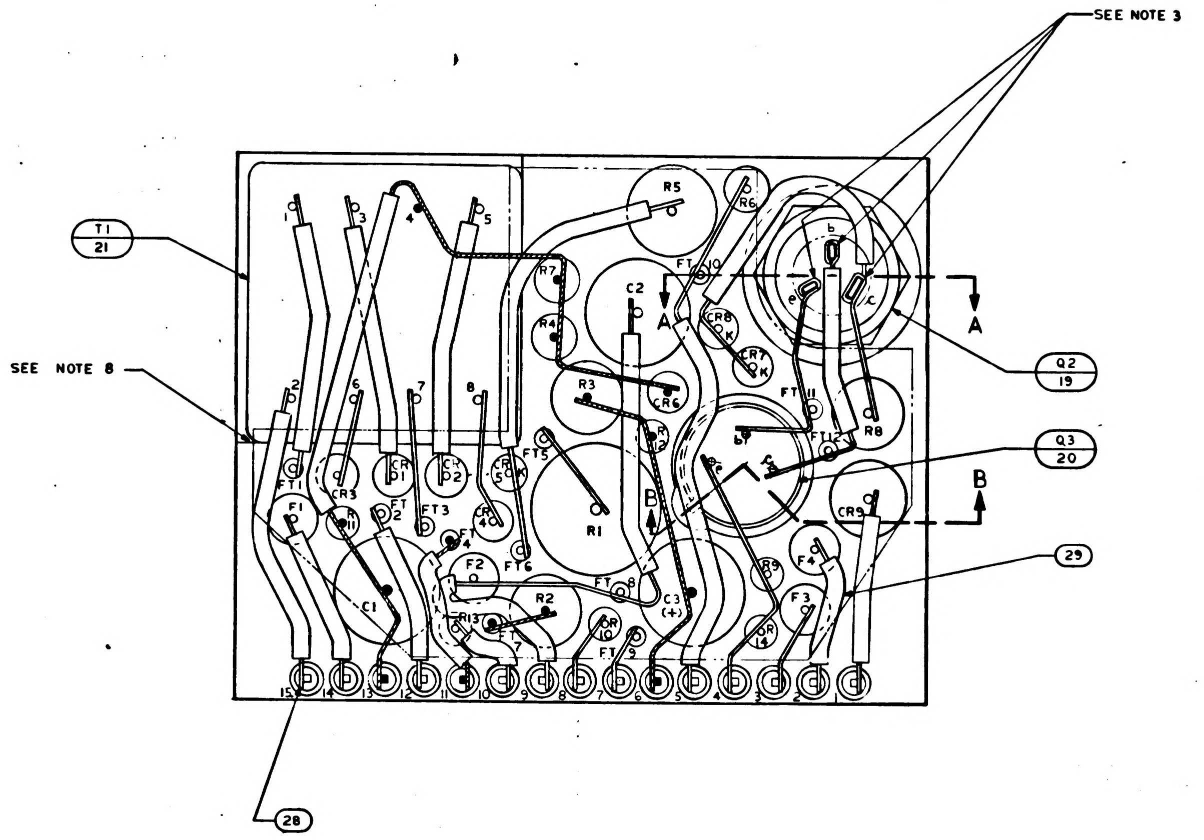
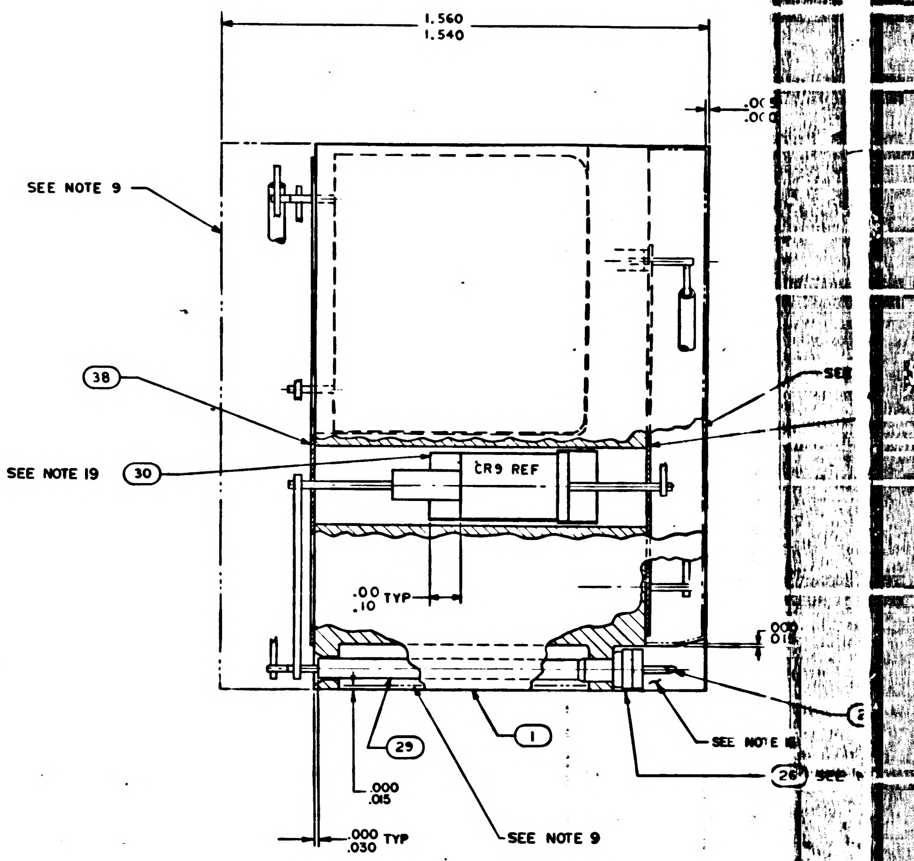


PARTIAL SECTION A-A

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK- FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE





NOTES:

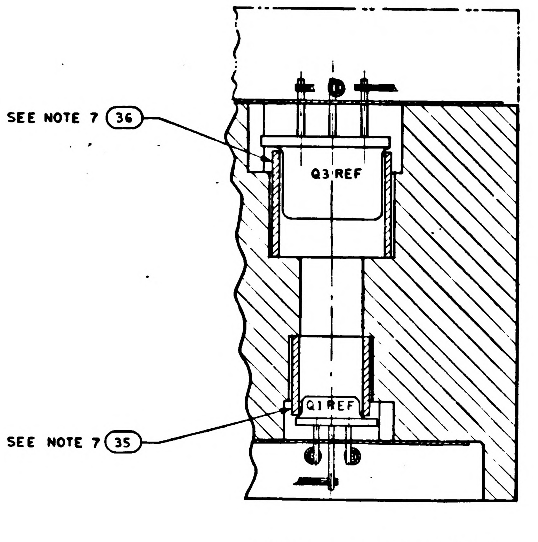
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005
3. SOLDER PER ND1002071
4. ASSEMBLE FIND NO. 25 AND FIND NO 26 PER ND1002136.
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. STAKE ALL ELECTRICAL COMPONENTS, FIND NO. 35 AND FIND NO. 36 PER ND1002009 METHOD C AND CENTRALIZE
8. BOND ALL MATING SURFACES OF FIND NO. 21 TO FIND NO. 1 PER ND 1002004 TYPE I
9. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
10. VALUE TO BE DETERMINED BY ELECTRICAL TEST, FIND NO. 5 TO BE SELECTED FROM CHART A PER ATP 1007125
11. VALUE TO BE DETERMINED BY ELECTRICAL TEST. FIND NO. 6 TO BE SELECTED FROM CHART B PER ATP 1007125
12. MARK PIN NUMBERS $\frac{.100}{.080}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
13. MOUNTING TORQUE FOR FIND NO. 34 TO BE 12 TO 14 INCH POUNDS
14. FILL PER ND1002117
15. AR DENOTES AS REQUIRED
16. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
17. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
18. BOND FIND NO. 39 TO FIND NO. 26 PER ND 1002237
19. BOND FIND NO. 30 TO FIND NO. 17 CURE AT AIR TEMP. BEFORE ASSEMBLING TO FIND NO. 1
20. ON ITEM FIND NO'S. 37 AND 38 :
    BROKEN PATHS INDICATE INSULATION SLEEVING
    FT DENOTES FEED THRU
    K DENOTES CATHODE SIDE OF DIODE
    + DENOTES POSITIVE SIDE OF CAPACITOR
    C INDICATES COLLECTER LEAD OF TRANSISTOR
    E INDICATES EMITTER LEAD OF TRANSISTOR
    B INDICATES BASE LEAD OF TRANSISTOR
21. PROCURE PER PS-1007125
22. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
23. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.

CHART A
(R5, FIND NO. 5 – REF)

PART NUMBER	VALUE OHMS
1010267 – 171	1470
1010267 – 172	1500
1010267 – 173	1540
1010267 – 174	1580
1010267 – 175	1620
1010267 – 176	1650
1010267 – 177	1690

CHART B
(R6, FIND NO. 6 – REF)

PART NUMBER	VALUE OHMS
1010364 – 255	1050
1010364 – 257	1070
1010364 – 259	1100
1010364 – 261	1130
1010364 – 263	1150
1010364 – 265	1180

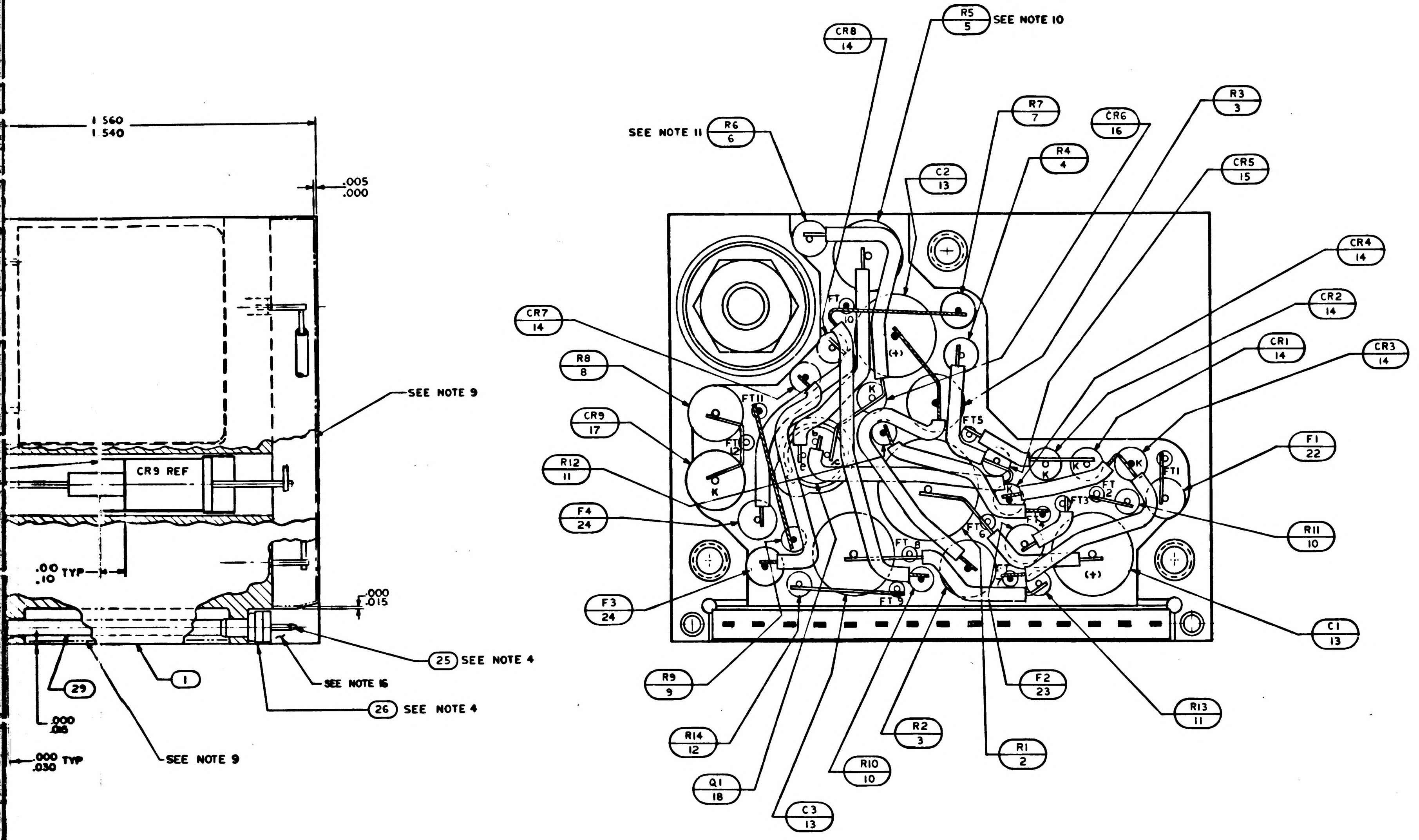


PARTIAL SECTION B-B

1007525	REV LTR	SH NO.
	C	1 OF 1

1007525 D

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16834	5 MAR 65	R.W.T.
B	REVISED PER TDRR 17303	12-MAR-65	C.O
C	REVISED PER TDRR 19452	2 JUN 65	E.I
D	REVISED PER TDRR 19504	7 Jun 65	JKP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1.540
.005
.000
SEE NOTE 9
CR9 REF
.00
.10 TYP
.000
.015
25 SEE NOTE 4
SEE NOTE 16
26 SEE NOTE 4
29
1
.000
.015
.000
.030 TYP
SEE NOTE 9
CR8 14
R5 5 SEE NOTE 10
SEE NOTE 11 R6 6
C2 13
R7 7
CRG 16
R4 4
R3 3
CR5 15
CR4 14
CR2 14
CR1 14
CR3 14
CR7 14
R8 8
CR9 17
R12 11
F4 24
F3 24
F1 22
R11 10
C1 13
R9 9
R14 12
Q1 18
C3 13
R10 10
R2 3
R1 2
F2 23
R13 11
FT11
FT12
FT10
FT5
FT1
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FT4
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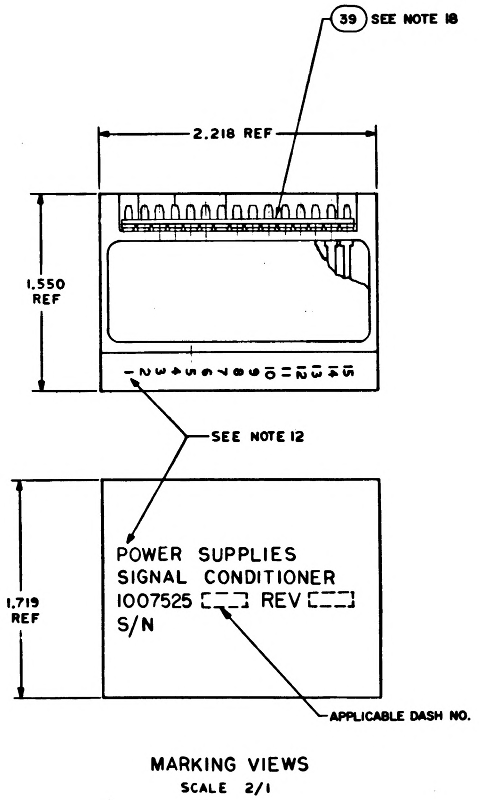

39 SEE NOTE 18
2.218 REF
1.550 REF
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
SEE NOTE 12
1.719 REF
POWER SUPPLIES
SIGNAL CONDITIONER
1007525 [ ] REV [ ]
S/N
APPLICABLE DASH NO.

MARKING VIEWS
SCALE 2/1

			☒		REF	1010120	SCHEMATIC
			~~+~~		~~39~~	~~1008540-16~~	~~GASKET, CONNECTOR MINIATURE~~
			1		38	1008174	INSULATOR
			~~+~~		~~37~~	~~1008173~~	~~INSULATOR~~
			1		36	1008025-2	INSULATOR, BUSHING
			1		35	1008025-1	INSULATOR BUSHING
			1		34	MS 20341-10B	NUT, HEX
			1		33	1008071-2	WASHER, FLAT
			2		32	1008024-1	WASHER, INSULATOR
			1		31	1008021-1	BUSHING, INSULATOR
			AR		30	MIL-I-15126	INSUL TAPE TYPE MFT2.5, ½ WIDE
			AR		29	1006776-22	INSULATION SLEEVING
			AR		28	1006757-1	WIRE, ELECTRICAL
			AR		27	1006787-2	WIRE, ELECTRICAL
			15		26	1006775	INSULATOR, WRAPOST-MALE, MINAT
			15		25	1006782-5	CONTACT, WRAPOST-MALE, MINAT
			2		24	1000170-6	FUSE
			1		23	1000170-4	FUSE
			1		22	1000170-2	FUSE
			1		21	1010751	TRANSFORMER
			1		20	1010398-1	TRANSISTOR
			1		19	1010269-1	TRANSISTOR
			1		18	1010633-1	TRANSISTOR
			1		17	1010829-25	DIODE
			1		16	1010259	DIODE
			1		15	1010372-24	DIODE
			6		14	1010362-001	DIODE
			3		13	1006789-002	CAPACITOR
			1		12	1006750-49	RESISTOR
			2		11	1006750-56	RESISTOR
			2		10	1006750-43	RESISTOR
			1		9	1010369-141	RESISTOR
			1		8	1010389-50	RESISTOR
			1		7	1010364-225	RESISTOR
			1		6	1010364 - SEE NOTE 11	RESISTOR
			1		5	1010267 - SEE NOTE 10	RESISTOR
			1		4	1010364-353	RESISTOR
			2		3	1010389-39	RESISTOR
			1		2	1010452-129	RESISTOR
			1		1	1008180	HEATSINK
			011	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007460		
1007580		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —//—
HEAT TREATMENT —//—
FINAL FINISH —//—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO CONTRACT
DRAWN S. Agne DATE 21 AUG 64
CHECKED A. Udnaich 28 AUG 64
APPROVAL
APPROVAL 10-6-64
NASA APPROVAL 10-6-64
MIT APPROVAL 6 Oct 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLIES MODULE ASSEMBLY - SIGNAL CONDITIONER

CODE IDENT NO. 80230 SIZE J NASA DRAWING NO. 1007525
SCALE 5/1 WT SHEET 1 OF 1

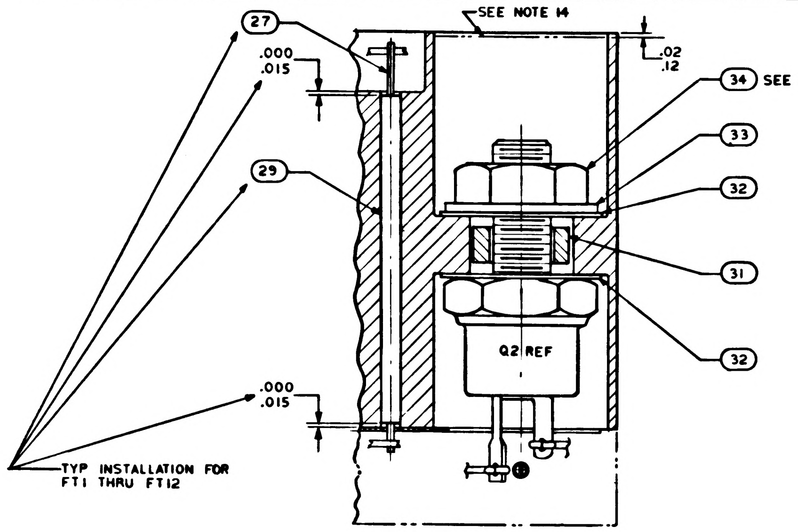
1007525 D

2M

007525 REV LTR D SH NO. 1 OF 1

2/1007525

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

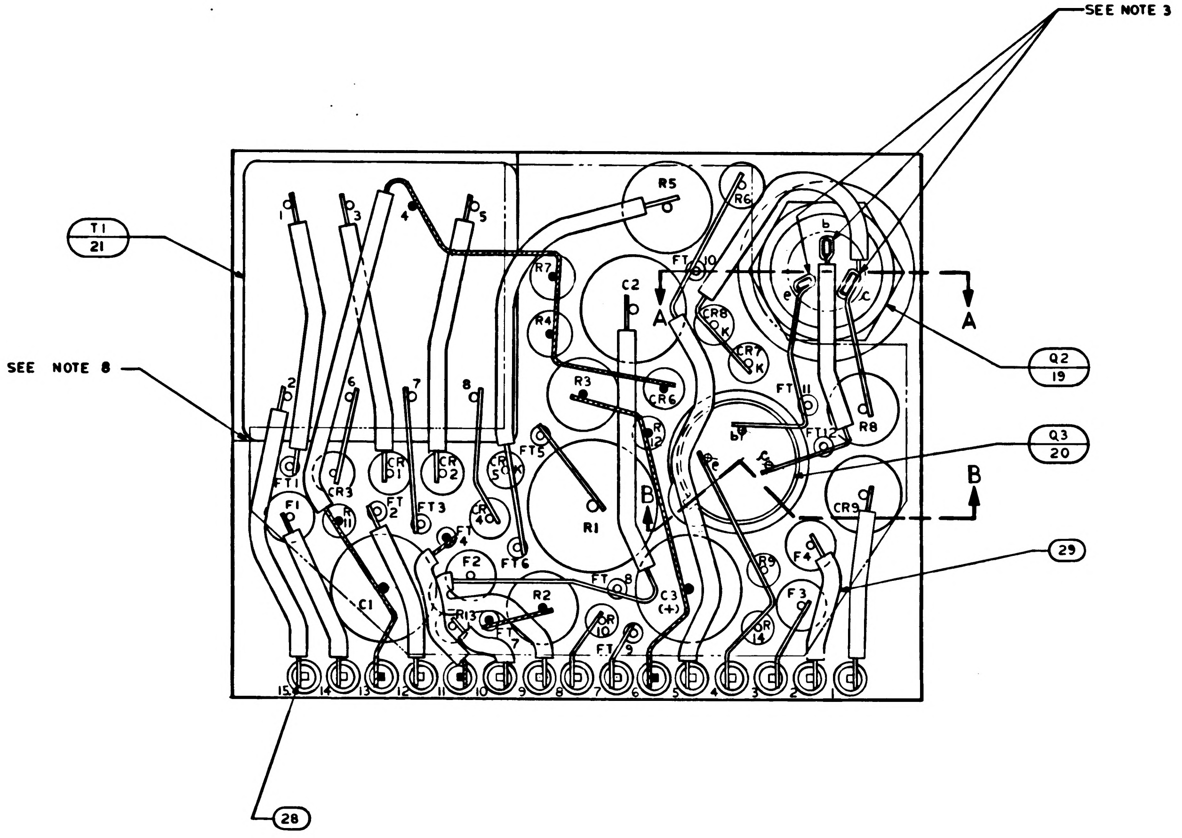


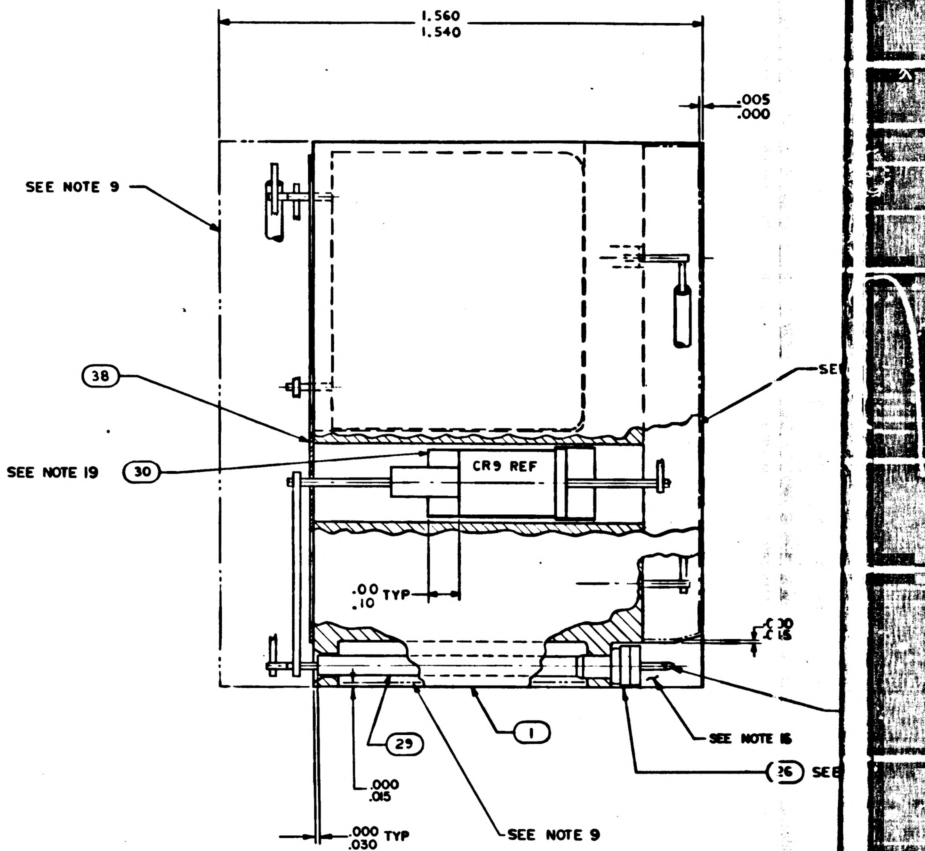
PARTIAL SECTION A-A

TABLE I

~~CONFIGURATION~~	~~BOND BETWEEN WAFER AND HEATSINK~~	~~TOP OF WAFER~~	~~HEATSINK- FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE~~
~~WAFER AND FLAT HEATSINK~~	~~100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~WAFER AND ADJACENT VERTICAL HEATSINK SURFACE~~	~~CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~HEATSINK FOAM CONTACT SURFACE PERIMETER~~	~~N/A~~	~~N/A~~	~~.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE~~

24. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION
25. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4; CURE AT 140°F FOR EIGHT HOURS, CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.





NOTES:
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2. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005
3. SOLDER PER ND1002071
4. ASSEMBLE FIND NO. 25 AND FIND NO 26 PER ND1002136.
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. STAKE ALL ELECTRICAL COMPONENTS, FIND NO. 35 AND FIND NO. 36 PER ND1002009 METHOD H AND CENTRALIZE
8. BOND ALL MATING SURFACES OF FIND NO. 21 TO FIND NO. 1 PER ND 1002004 TYPE I
9. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
10. VALUE TO BE DETERMINED BY ELECTRICAL TEST, FIND NO. 5 TO BE SELECTED FROM CHART A PER ATP 1007125
11. VALUE TO BE DETERMINED BY ELECTRICAL TEST. FIND NO. 6 TO BE SELECTED FROM CHART B PER ATP 1007125
12. MARK PIN NUMBERS $\frac{.100}{.080}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
13. MOUNTING TORQUE FOR FIND NO. 34 TO BE 12 TO 14 INCH POUNDS
14. FILL PER ND1002117
15. AR DENOTES AS REQUIRED

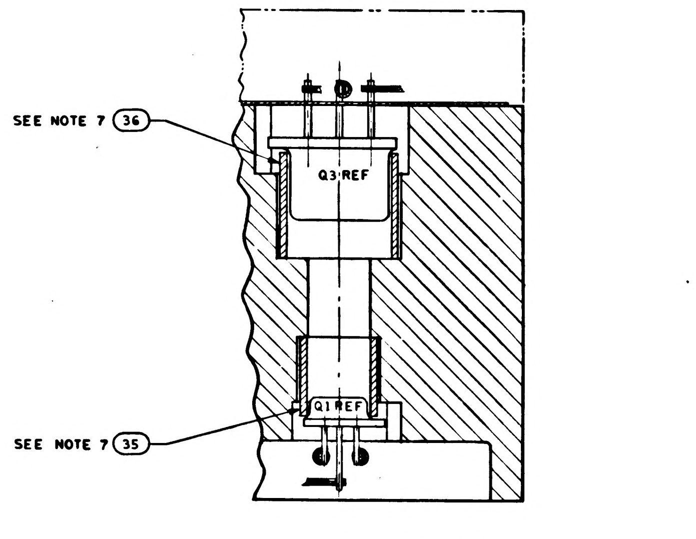
16. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
17. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
18. BOND FIND NO. 39 TO FIND NO. 26 PER ND 1002237
19. BOND FIND NO. 30 TO FIND NO. 17 CURE AT AIR TEMP. BEFORE ASSEMBLING TO FIND NO. 1
20. ON ITEM FIND NO'S. 37 AND 38:
    BROKEN PATHS INDICATE INSULATION SLEEVING
    FT DENOTES FEED THRU
    K DENOTES CATHODE SIDE OF DIODE
    + DENOTES POSITIVE SIDE OF CAPACITOR
    C INDICATES COLLECTER LEAD OF TRANSISTOR
    E INDICATES EMITTER LEAD OF TRANSISTOR
    B INDICATES BASE LEAD OF TRANSISTOR
21. PROCURE PER PS-1007125
~~22. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
~~23. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~

CHART A
(R5, FIND NO. 5 — REF)

PART NUMBER	VALUE OHMS
1010267 — 171	1470
1010267 — 172	1500
1010267 — 173	1540
1010267 — 174	1580
1010267 — 175	1620
1010267 — 176	1650
1010267 — 177	1690

CHART B
(R6, FIND NO. 6 — REF)

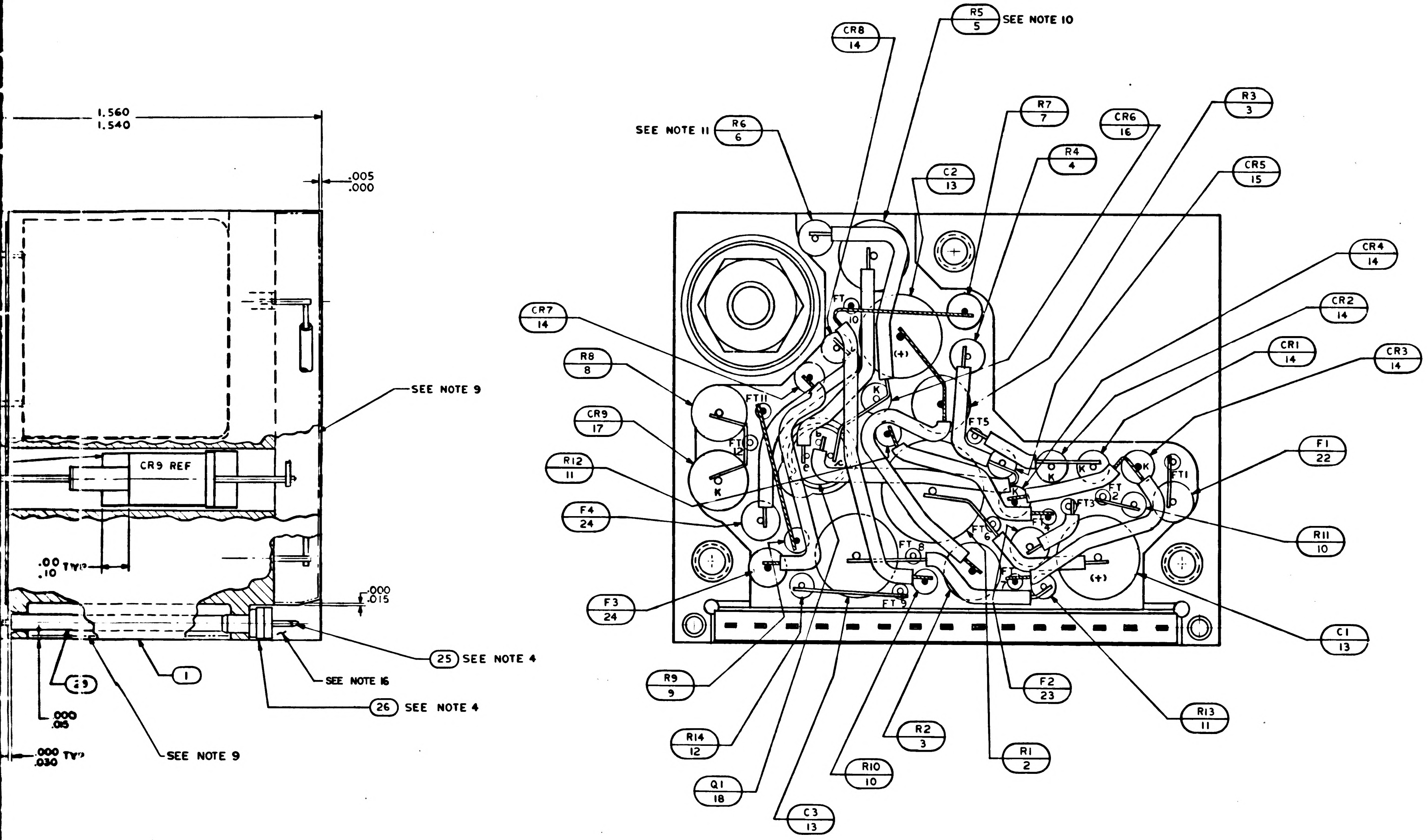
PART NUMBER	VALUE OHMS
1010364 — 255	1050
1010364 — 257	1070
1010364 — 259	1100
1010364 — 261	1130
1010364 — 263	1150
1010364 — 265	1180



PARTIAL SECTION B-B

1007525	REV LTR	SH NO.
	D	1 OF 1

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16834	5 MAR 65	R.H.
B	REVISED PER TDRR [illegible]303	[illegible]	[illegible]
C	REVISED PER TDRR 19452	JUN 65	[illegible]
D	REVISED PER TDRR 19501	7 JUN 65	JKF
E	REVISED PER TDRR 20[illegible]43	[illegible] 65	[illegible]


1.560
1.540
.005
.000
SEE NOTE 9
CR9 REF
.00 TYP
.10
.000
.015
25 SEE NOTE 4
SEE NOTE 16
26 SEE NOTE 4
1
29
.000
.015
.000 TYP
.030
SEE NOTE 9
CR8 14
R5 5 SEE NOTE 10
SEE NOTE 11 R6 6
R7 7
CR6 16
R3 3
C2 13
R4 4
CR5 15
CR4 14
CR7 14
CR2 14
R8 8
CR1 14
CR3 14
CR9 17
F1 22
R12 11
F4 24
R11 10
F3 24
C1 13
R9 9
F2 23
R13 11
R14 12
R2 3
R1 2
Q1 18
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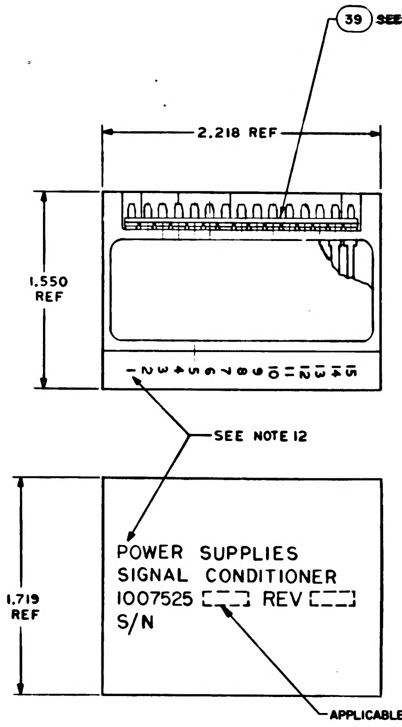
39 ~~SEE NOTE 18~~
2.218 REF
1.550 REF
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
SEE NOTE 12
1.719 REF
APPLICABLE DASH NO.

POWER SUPPLIES
SIGNAL CONDITIONER
1007525 [ ] REV [ ]
S/N

MARKING VIEWS
SCALE 2/1

			☒		REF	1010120	SCHEMATIC
			~~1~~		~~39~~	~~1008540-18~~	~~GASKET, CONNECTOR MINIATURE~~
			1		38	1008174	INSULATOR
			~~1~~		~~37~~	~~1008173~~	~~INSULATOR~~
			1		36	1008025-2	INSULATOR, BUSHING
			1		35	1008025-1	INSULATOR BUSHING
			1		34	MS 20341-10B	NUT, HEX
			1		33	1008071-2	WASHER, FLAT
			2		32	1008024-1	WASHER, INSULATOR
			1		31	1008021-1	BUSHING, INSULATOR
			AR		30	MIL-I-15126	INSUL TAPE TYPE MFT2.5, ½ WIDE
			AR		29	1006776-22	INSULATION SLEEVING
			AR		28	1006757-1	WIRE, ELECTRICAL
			AR		27	1006787-2	WIRE, ELECTRICAL
			15		26	1006775	INSULATOR, WRAPOST-MALE, MINAT
			15		25	1006782-5	CONTACT, WRAPOST-MALE, MINAT
			2		24	1000170-6	FUSE
			1		23	1000170-4	FUSE
			1		22	1000170-2	FUSE
			1		21	1010751	TRANSFORMER
			1		20	1010398-1	TRANSISTOR
			1		19	1010269-1	TRANSISTOR
			1		18	1010633-1	TRANSISTOR
			1		17	1010829-25	DIODE
			1		16	1010259	DIODE
			1		15	1010372-24	DIODE
			6		14	1010362-001	DIODE
			3		13	1006789-002	CAPACITOR
			1		12	1006750-49	RESISTOR
			2		11	1006750-56	RESISTOR
			2		10	1006750-43	RESISTOR
			1		9	1010369-141	RESISTOR
			1		8	1010389-50	RESISTOR
			1		7	1010364-225	RESISTOR
			1		6	1010364 - SEE NOTE 11	RESISTOR
			1		5	1010267 - SEE NOTE 10	RESISTOR
			1		4	1010364-353	RESISTOR
			2		3	1010389-39	RESISTOR
			1		2	1010452-129	RESISTOR
			1		1	1008180	HEATSINK
			011	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007460		
1007580		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN S. Agne DATE 21AUG64
CHECKED A. Udovich 28AUG64
APPROVAL
APPROVAL 10-6-64
NASA APPROVAL 10-6-64
MIT APPROVAL 6Oct64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLIES MODULE ASSEMBLY - SIGNAL CONDITIONER

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007525
SCALE 5/1
WT
SHEET 1 OF 1

1007525

(2H)

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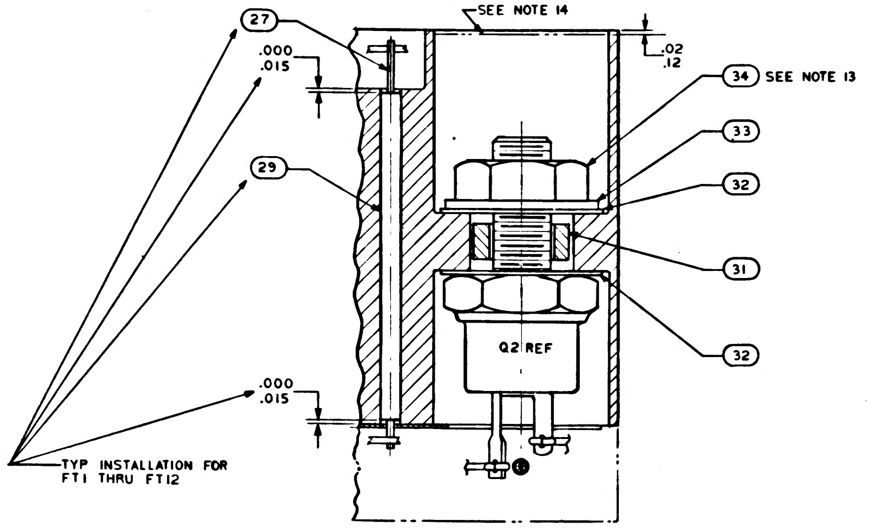
1007525

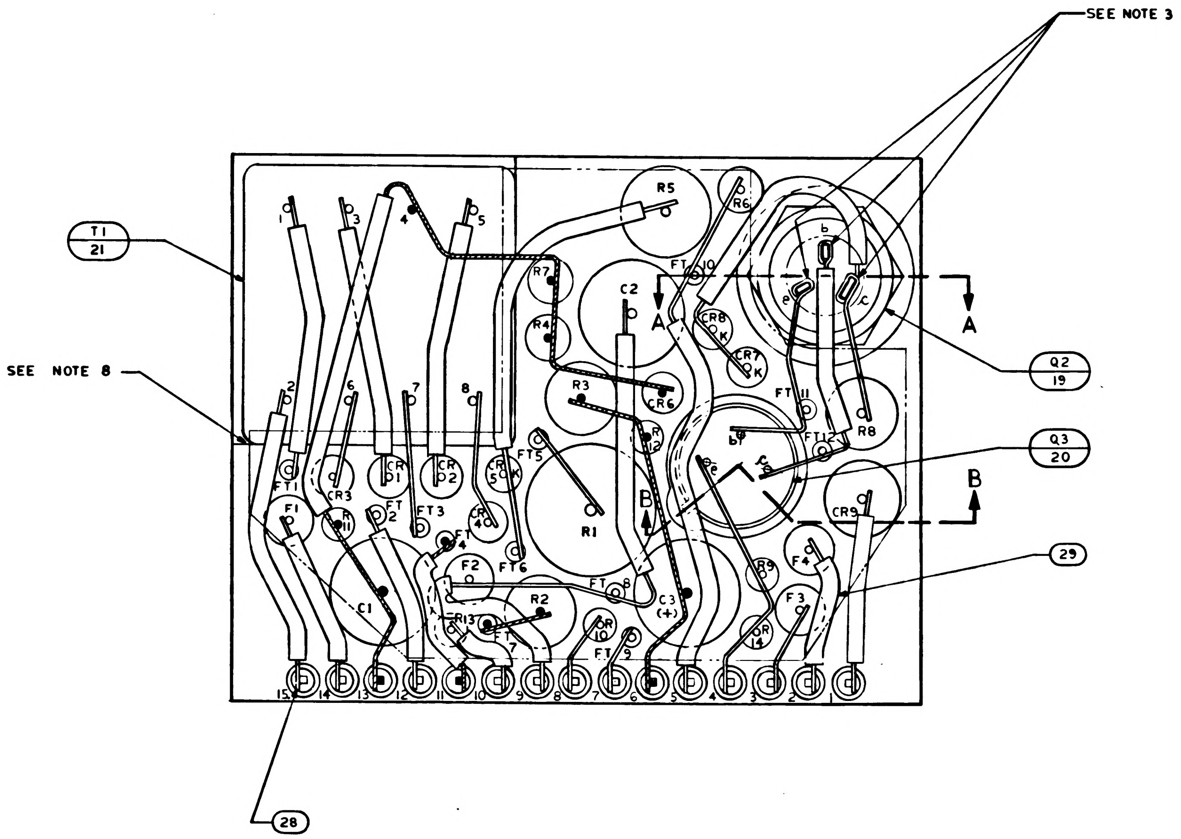


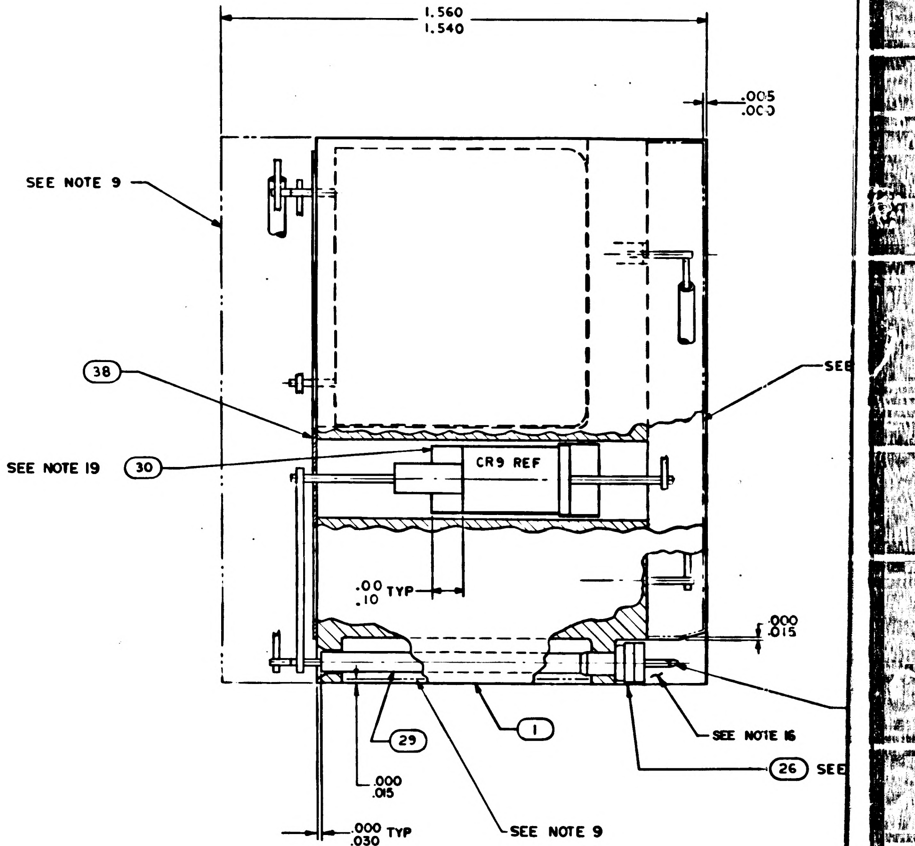
PARTIAL SECTION A-A

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK- FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

24. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION
25. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140 °F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.





NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005
3. SOLDER PER ND1002071
4. ASSEMBLE FIND NO. 25 AND FIND NO 26 PER ND1002136.
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. STAKE ALL ELECTRICAL COMPONENTS, FIND NO. 35 AND FIND NO. 36 PER ND1002009 METHOD H AND CENTRALIZE
8. BOND ALL MATING SURFACES OF FIND NO. 21 TO FIND NO. 1 PER ND 1002004 TYPE I
9. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
10. VALUE TO BE DETERMINED BY ELECTRICAL TEST, FIND NO. 5 TO BE SELECTED FROM CHART A PER ATP 1007125
11. VALUE TO BE DETERMINED BY ELECTRICAL TEST. FIND NO. 6 TO BE SELECTED FROM CHART B PER ATP 1007125
12. MARK PIN NUMBERS $\genfrac{}{}{0pt}{}{.100}{.080}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\genfrac{}{}{0pt}{}{.140}{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
13. MOUNTING TORQUE FOR FIND NO. 34 TO BE 12 TO 14 INCH POUNDS
14. FILL PER ND1002117
15. AR DENOTES AS REQUIRED

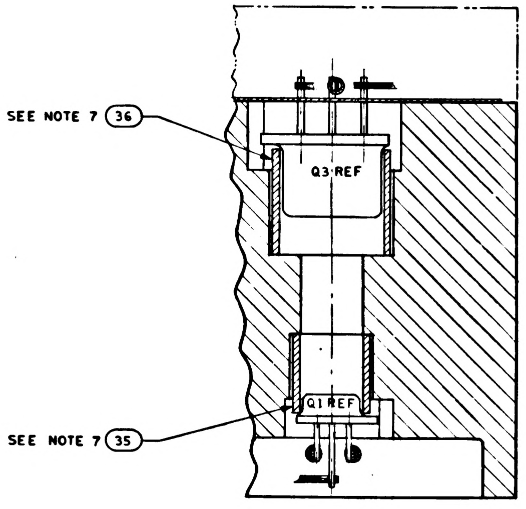
16. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
17. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
~~18. BOND FIND NO. 38 TO FIND NO. 28 PER ND 1002237~~
19. BOND FIND NO. 30 TO FIND NO. 17 CURE AT AIR TEMP. BEFORE ASSEMBLING TO FIND NO. 1
20. ON ITEM FIND NO'S. 37 AND 38 :
    - BROKEN PATHS INDICATE INSULATION SLEEVING
    - FT DENOTES FEED THRU
    - K DENOTES CATHODE SIDE OF DIODE
    - + DENOTES POSITIVE SIDE OF CAPACITOR
    - C INDICATES COLLECTER LEAD OF TRANSISTOR
    - E INDICATES EMITTER LEAD OF TRANSISTOR
    - B INDICATES BASE LEAD OF TRANSISTOR
21. PROCURE PER PS-1007125
~~22. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002107 TYPE I.~~
~~23. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002107 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~

CHART A
(R5, FIND NO. 5 – REF)

PART NUMBER	VALUE OHMS
1010267 – 171	1470
1010267 – 172	1500
1010267 – 173	1540
1010267 – 174	1580
1010267 – 175	1620
1010267 – 176	1650
1010267 – 177	1690

CHART B
(R6, FIND NO. 6 – REF)

PART NUMBER	VALUE OHMS
1010364 – 255	1050
1010364 – 257	1070
1010364 – 259	1100
1010364 – 261	1130
1010364 – 263	1150
1010364 – 265	1180



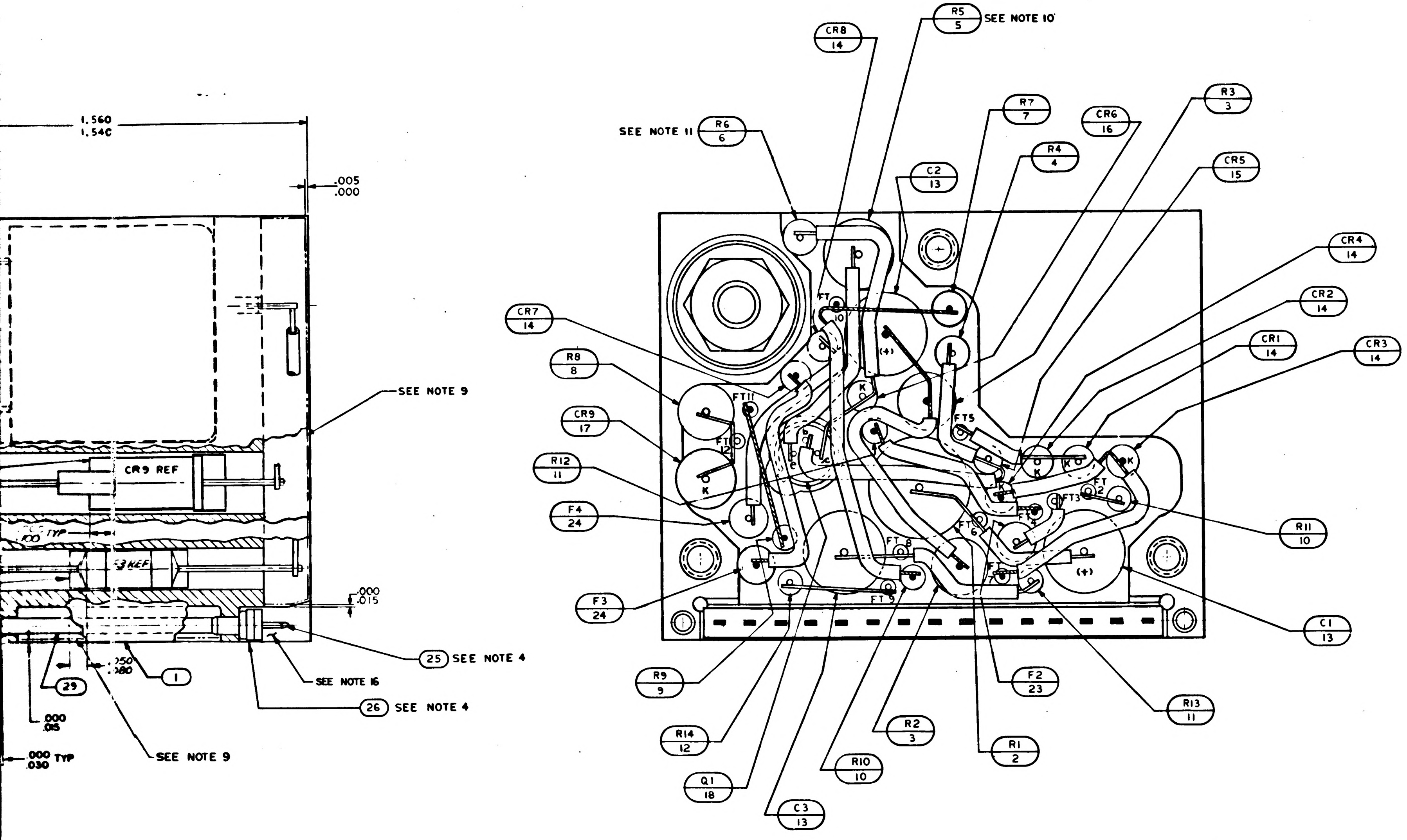
PARTIAL SECTION B-B

1007525	REV LTR E	SH NO. 1 OF 1

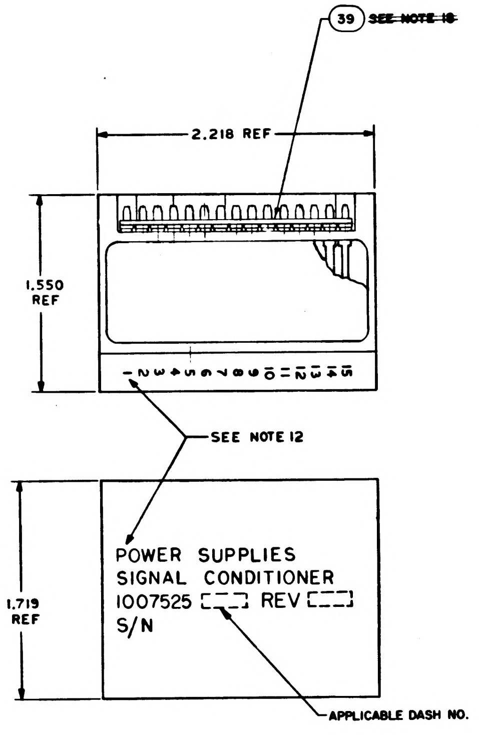
1/1007525

1007525 F

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16834	5 MAR 65	
B	REVISED PER TDRR 17303	12 MAR	
C	REVISED PER TDRR 19452	JUN 65	
D	REVISED PER TDRR 19501	7 JUN 65	
E	REVISED PER TDRR 20 43	65	
F	REVISED PER TDRR 20430	3 65	


1.560
1.540
.005
.000
CR9 REF
TYP
REF
SEE NOTE 9
.000
.015
.250
.380
25 SEE NOTE 4
SEE NOTE 16
26 SEE NOTE 4
29
1
.000
.015
.000 TYP
.030
SEE NOTE 9
R5 5 SEE NOTE 10
CR8 14
SEE NOTE 11 R6 6
C2 13
R7 7
CR6 16
R4 4
R3 3
CR5 15
CR4 14
CR2 14
CR1 14
CR3 14
CR7 14
R8 8
CR9 17
R12 11
F4 24
F3 24
R9 9
R14 12
Q1 18
C3 13
R10 10
R2 3
R1 2
F2 23
R13 11
C1 13
R11 10
FT1 FT2 FT3 FT5 FT6 FT8 FT9 FT10 FT11 FT12
K
(+)

39 ~~SEE NOTE 18~~


2.218 REF
1.550 REF
1.719 REF
SEE NOTE 12
POWER SUPPLIES
SIGNAL CONDITIONER
1007525 REV
S/N
APPLICABLE DASH NO.

MARKING VIEWS
SCALE 2/1

QUANTITY REQUIRED			011	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
					REF	1009571	SCHEMATIC
			~~1~~		~~39~~	~~1008540-15~~	~~GASKET, CONNECTOR MINIATURE~~
			1		38	1008174	INSULATOR
			~~1~~		~~37~~	~~1008173~~	~~INSULATOR~~
			1		36	1008025-2	INSULATOR, BUSHING
			1		35	1008025-1	INSULATOR BUSHING
			1		34	MS 20341-10B	NUT, HEX
			1		33	1008071-2	WASHER, FLAT
			2		32	1008024-1	WASHER, INSULATOR
			1		31	1008021-1	BUSHING, INSULATOR
			AR		30	MIL-I-15126	INSUL TAPE TYPE MFT2.5, 1/2 WIDE
			AR		29	1006776-22	INSULATION SLEEVING
			AR		28	1006757-1	WIRE, ELECTRICAL
			AR		27	1006787-2	WIRE, ELECTRICAL
			15		26	1006775	INSULATOR, WRAPOST-MALE, MINAT
			15		25	1006782-5	CONTACT, WRAPOST-MALE, MINAT
			2		24	1000170-6	FUSE
			1		23	1000170-4	FUSE
			~~1~~		~~22~~	~~1000170-2~~	~~FUSE~~
			1		21	1010751	TRANSFORMER
			1		20	1010398-1	TRANSISTOR
			1		19	1010269-1	TRANSISTOR
			1		18	1010633-1	TRANSISTOR
			1		17	1010829-25	DIODE
			1		16	1010259	DIODE
			1		15	1010372-24	DIODE
			6		14	1010362-001	DIODE
			3		13	1006789-002	CAPACITOR
			1		12	1006750-49	RESISTOR
			2		11	1006750-56	RESISTOR
			2		10	1006750-43	RESISTOR
			1		9	1010369-141	RESISTOR
			1		8	1010389-50	RESISTOR
			1		7	1010364-225	RESISTOR
			1		6	1010364 - SEE NOTE 11	RESISTOR
			1		5	1010267 - SEE NOTE 10	RESISTOR
			1		4	1010364-353	RESISTOR
			2		3	1010389-39	RESISTOR
			1		2	1010452-129	RESISTOR
			1		1	1008180	HEATSINK

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007460		
1007580		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS .XX ±.02 .XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —//—
HEAT TREATMENT —//—
FINAL FINISH —//—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO CONTRACT
DRAWN S. Agne DATE 21 AUG 64
CHECKED A. Udnaich 28 AUG 64
APPROVAL
APPROVAL 10-6-64
NASA APPROVAL 10-6-64
MIT APPROVAL 6 Oct 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLIES
MODULE ASSEMBLY -
SIGNAL CONDITIONER

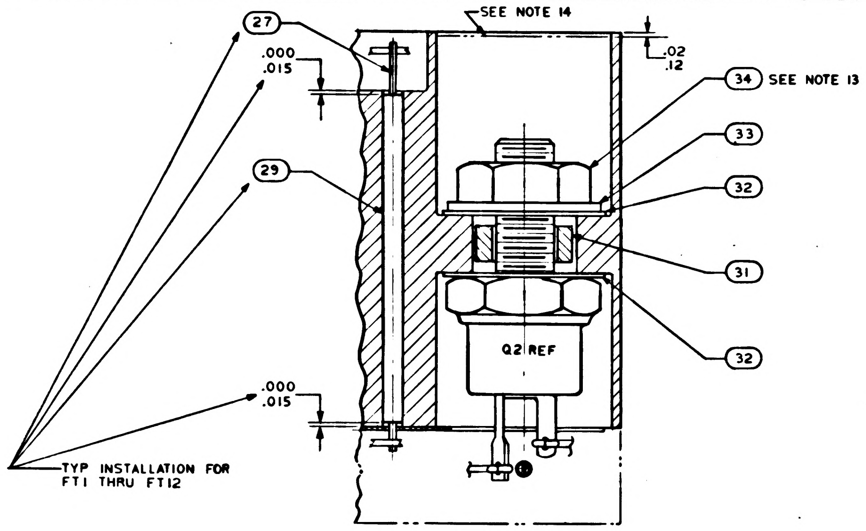
CODE IDENT NO. 80230 SIZE J NASA DRAWING NO. 1007525
SCALE 5/1 WT SHEET 1 OF 1

1007525 F

1007525 REV F SH NO. 1 OF 1

2/1007525

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

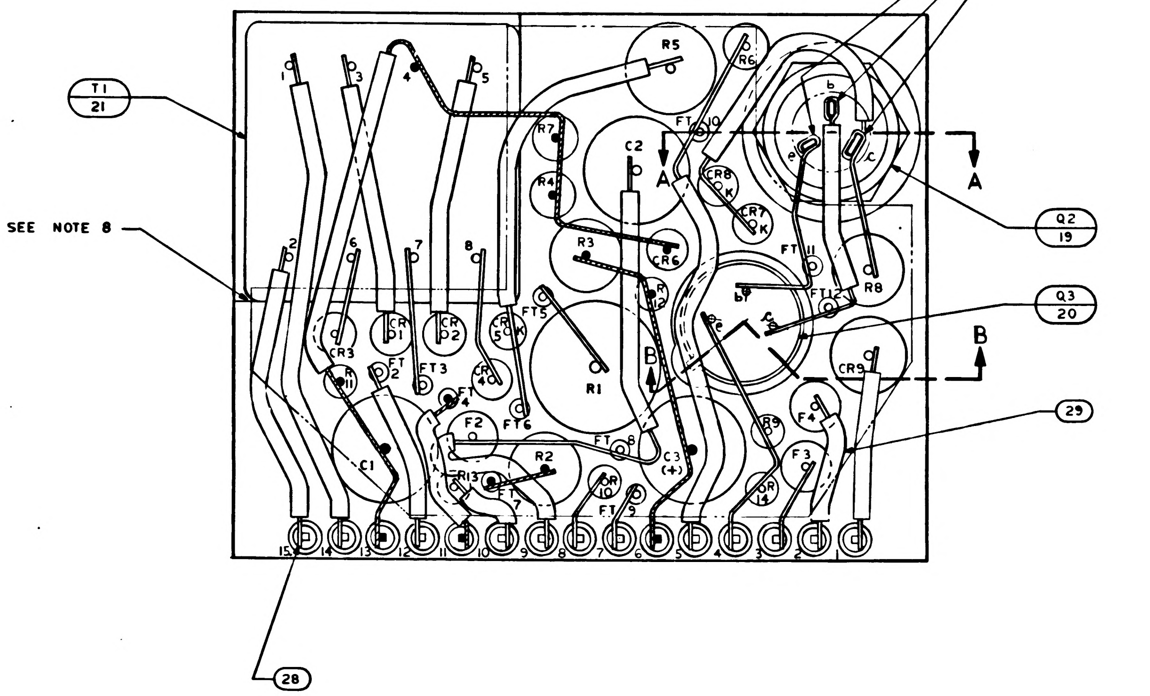


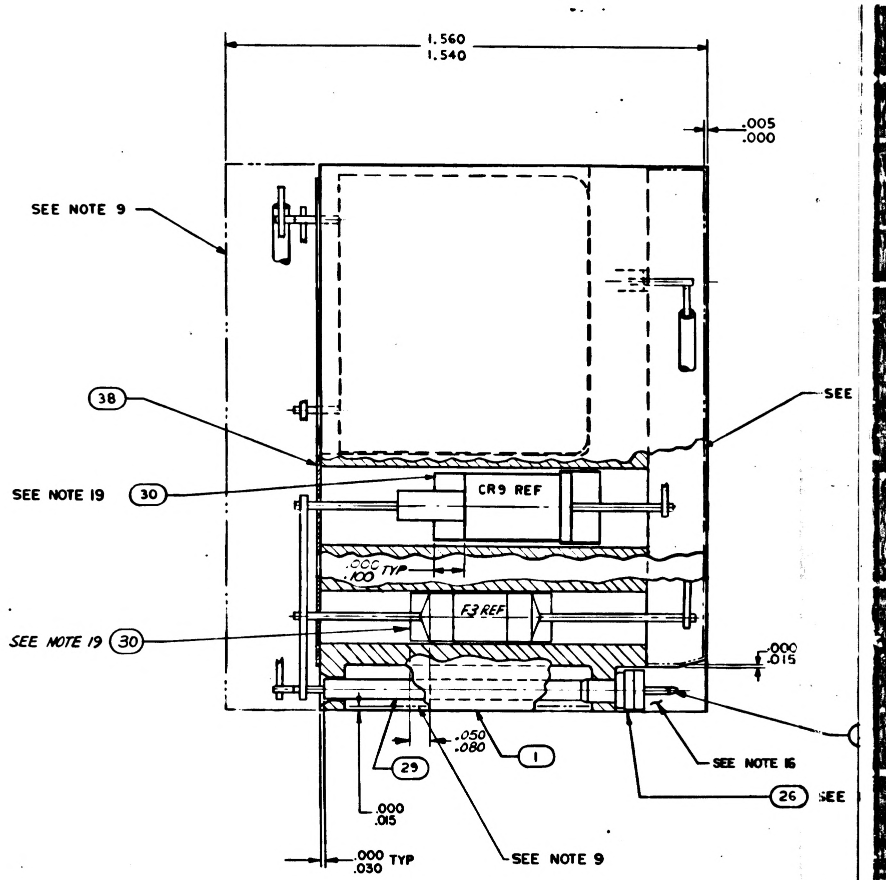
PARTIAL SECTION A-A

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK- FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE

24. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION
25. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140 °F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.





NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005
3. SOLDER PER ND1002071
4. ASSEMBLE FIND NO. 25 AND FIND NO 26 PER ND1002136.
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. STAKE ALL ELECTRICAL COMPONENTS, FIND NO. 35 AND FIND NO. 36 PER ND1002009 METHOD H AND CENTRALIZE
8. BOND ALL MATING SURFACES OF FIND NO. 21 TO FIND NO. 1 PER ND 1002004 TYPE I
9. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
10. VALUE TO BE DETERMINED BY ELECTRICAL TEST, FIND NO. 5 TO BE SELECTED FROM CHART A PER ATP 1007125
11. VALUE TO BE DETERMINED BY ELECTRICAL TEST. FIND NO. 6 TO BE SELECTED FROM CHART B PER ATP 1007125
12. MARK PIN NUMBERS $^{.100}_{.080}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $^{.140}_{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
13. MOUNTING TORQUE FOR FIND NO. 34 TO BE 12 TO 14 INCH POUNDS
14. FILL PER ND1002117
15. AR DENOTES AS REQUIRED

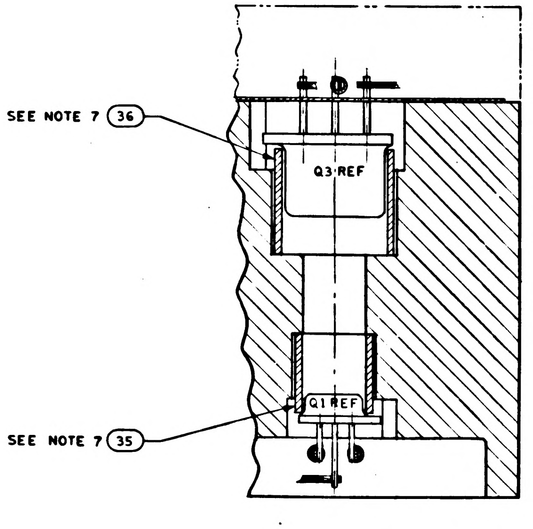
16. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
17. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
~~18. BOND FIND NO. 38 TO FIND NO. 28 PER ND 1002237~~
19. BOND FIND NO. 30 TO FIND NO. 17, 23 AND 24. CURE AT AIR TEMPERATURE BEFORE ASSEMBLING TO FIND NO. 1
20. ON ITEM FIND NO'S. 37 AND 38 :
    - BROKEN PATHS INDICATE INSULATION SLEEVING
    - FT DENOTES FEED THRU
    - K DENOTES CATHODE SIDE OF DIODE
    - + DENOTES POSITIVE SIDE OF CAPACITOR
    - C INDICATES COLLECTER LEAD OF TRANSISTOR
    - E INDICATES EMITTER LEAD OF TRANSISTOR
    - B INDICATES BASE LEAD OF TRANSISTOR
21. PROCURE PER PS-1007125
22. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
23. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~

CHART A
(R5, FIND NO. 5 – REF)

PART NUMBER	VALUE OHMS
1010267 – 171	1470
1010267 – 172	1500
1010267 – 173	1540
1010267 – 174	1580
1010267 – 175	1620
1010267 – 176	1650
1010267 – 177	1690

CHART B
(R6, FIND NO. 6 – REF)

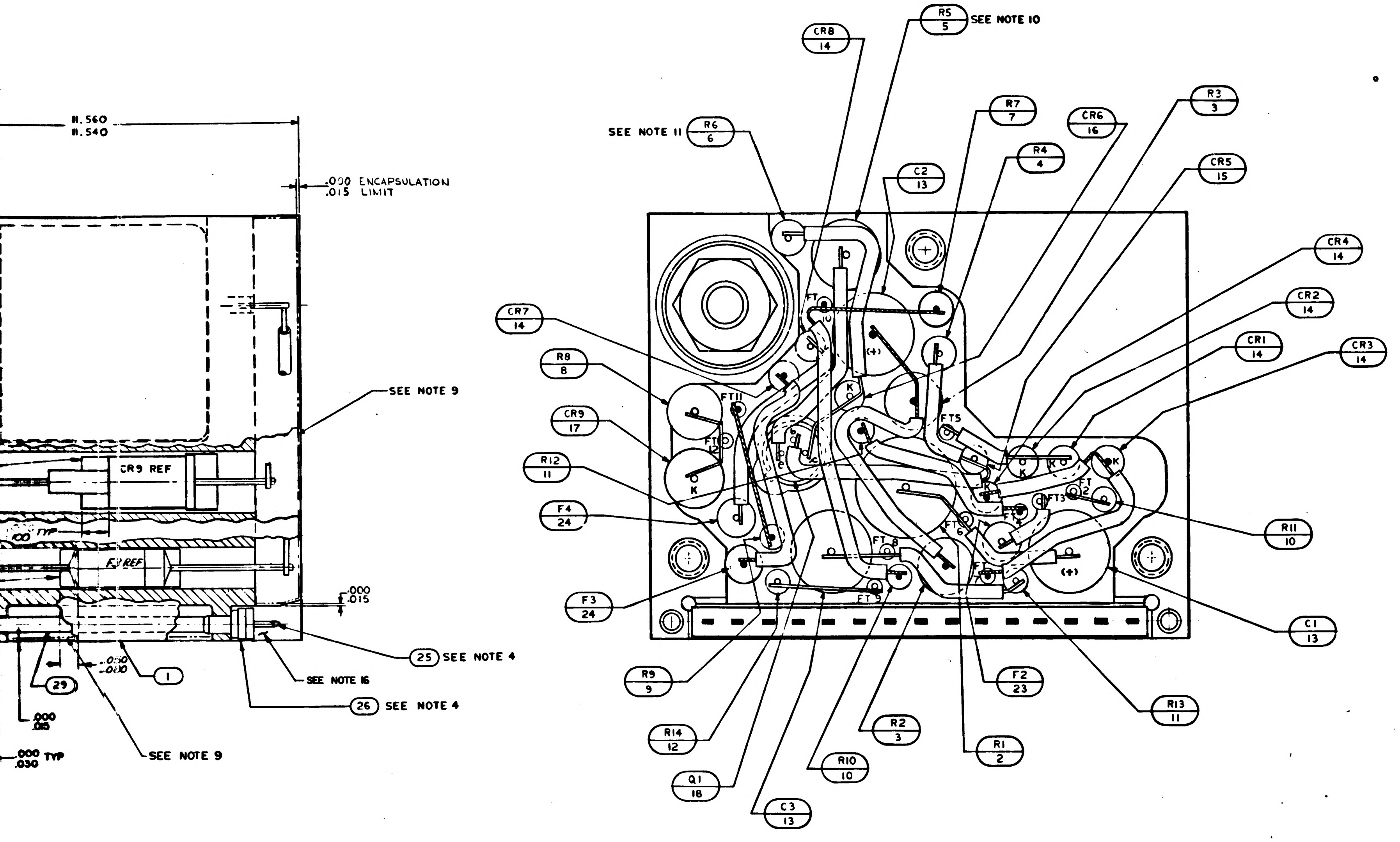
PART NUMBER	VALUE OHMS
1010364 – 255	1050
1010364 – 257	1070
1010364 – 259	1100
1010364 – 261	1130
1010364 – 263	1150
1010364 – 265	1180



PARTIAL SECTION B-B

1007525	REV LTR	SH NO.
	F	1 OF 1

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16834	5 MAR 65	
B	REVISED PER TDRR 17303	12 MAR 65	CP
C	REVISED PER TDRR 19452	1 JUN 65	
D	REVISED PER TDRR 19504	7 Jun 65	JKP
E	REVISED PER TDRR 20143	19 JUN 65	DRO
F	REVISED PER TDRR 20430	3 JUL 65	
G	REVISED PER TDRR 22933	[illegible] 65	


11.560
11.540
.000 ENCAPSULATION
.015 LIMIT
SEE NOTE 9
CR9 REF
.100 TYP
F3 REF
.000
.015
25 SEE NOTE 4
SEE NOTE 16
26 SEE NOTE 4
.030
.000
1
29
.000
.015
.000 TYP
.030
SEE NOTE 9
CR8 14
R5 5 SEE NOTE 10
SEE NOTE 11 R6 6
R7 7
CR6 16
R3 3
R4 4
CR5 15
C2 13
CR4 14
CR2 14
CR7 14
CR1 14
CR3 14
R8 8
CR9 17
R12 11
F4 24
F3 24
R11 10
C1 13
R9 9
F2 23
R13 11
R14 12
R2 3
R1 2
Q1 18
R10 10
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FT 11
FT 12
FT 5
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FT 2
FT 3
FT 6
FT 8
FT 9
FT 1
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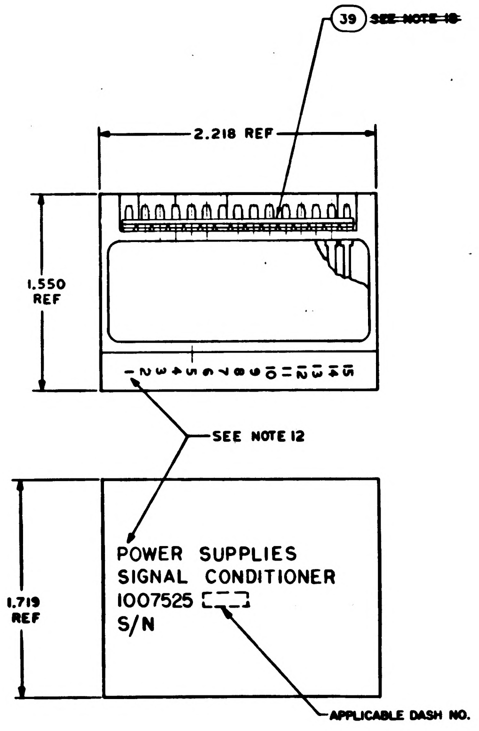

39 ~~SEE NOTE 18~~
2.218 REF
1.550 REF
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
SEE NOTE 12
1.719 REF
POWER SUPPLIES
SIGNAL CONDITIONER
1007525
S/N
APPLICABLE DASH NO.

MARKING VIEWS
SCALE 2/1

					FIND NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
			☒		REF	1009571	SCHEMATIC
			~~1~~		~~39~~	~~1008540-15~~	~~GASKET, CONNECTOR MINIATURE~~
			1		38	1008174	INSULATOR
			~~1~~		~~37~~	~~1008173~~	~~INSULATOR~~
			1		36	1008025 - 2	INSULATOR, BUSHING
			1		35	1008025 - 1	INSULATOR BUSHING
			1		34	MS 20341-10B	NUT, HEX
			1		33	1008071 - 2	WASHER, FLAT
			2		32	1008024 - 1	WASHER, INSULATOR
			1		31	1008021 - 1	BUSHING, INSULATOR
			AR		30	MIL-I-15126	INSUL TAPE TYPE MFT2.5, 1/2 WIDE
			AR		29	1006776 - 22	INSULATION SLEEVING
			AR		28	1006757 - 1	WIRE, ELECTRICAL
			AR		27	1006787 - 2	WIRE, ELECTRICAL
			15		26	1006775	INSULATOR, WRAPOST-MALE, MINAT
			15		25	1006782 - 5	CONTACT, WRAPOST-MALE, MINAT
			2		24	1000170 - 6	FUSE
			1		23	1000170 - 4	FUSE
			~~1~~		~~22~~	~~1000170 - 2~~	~~FUSE~~
			1		21	1010751	TRANSFORMER
			1		20	1010398 - 1	TRANSISTOR
			1		19	1010269 - 1	TRANSISTOR
			1		18	1010633 - 1	TRANSISTOR
			1		17	1010829 - 25	DIODE
			1		16	1010259	DIODE
			1		15	1010372 - 24	DIODE
			6		14	1010362 - 001	DIODE
			3		13	1006789 - 002	CAPACITOR
			1		12	1006750 - 49	RESISTOR
			2		11	1006750 - 56	RESISTOR
			2		10	1006750 - 43	RESISTOR
			1		9	1010369 - 141	RESISTOR
			1		8	1010389 - 50	RESISTOR
			1		7	1010364 - 225	RESISTOR
			1		6	1010364 - SEE NOTE 11	RESISTOR
			1		5	1010267 - SEE NOTE 10	RESISTOR
			1		4	1010364 - 353	RESISTOR
			2		3	1010389 - 39	RESISTOR
			1		2	1010452 - 129	RESISTOR
			1		1	1008180	HEATSINK
			011	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007460		
1007580		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —//—
HEAT TREATMENT —//—
FINAL FINISH —//—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DRAWN S. Agna DATE 21 AUG 64
CHECKED A. Udnaich 28 AUG 64
APPROVAL
APPROVAL 10-6-64
NASA APPROVAL 10-6-64
MIT APPROVAL 6 Oct 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLIES
MODULE ASSEMBLY -
SIGNAL CONDITIONER

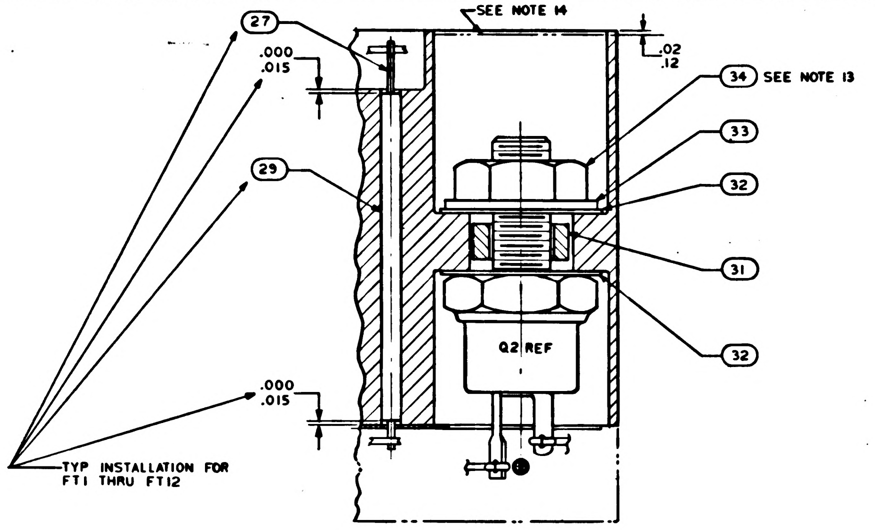
CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007525
SCALE 5/1
WT
SHEET 1 OF 1

1007525 G

1007525 REV LTR G SH NO. 1 OF 1

2-1007525

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO


27
29
SEE NOTE 14
.02
.12
34 SEE NOTE 13
33
32
31
32
Q2 REF
.000
.015
.000
.015
TYP INSTALLATION FOR FT1 THRU FT12

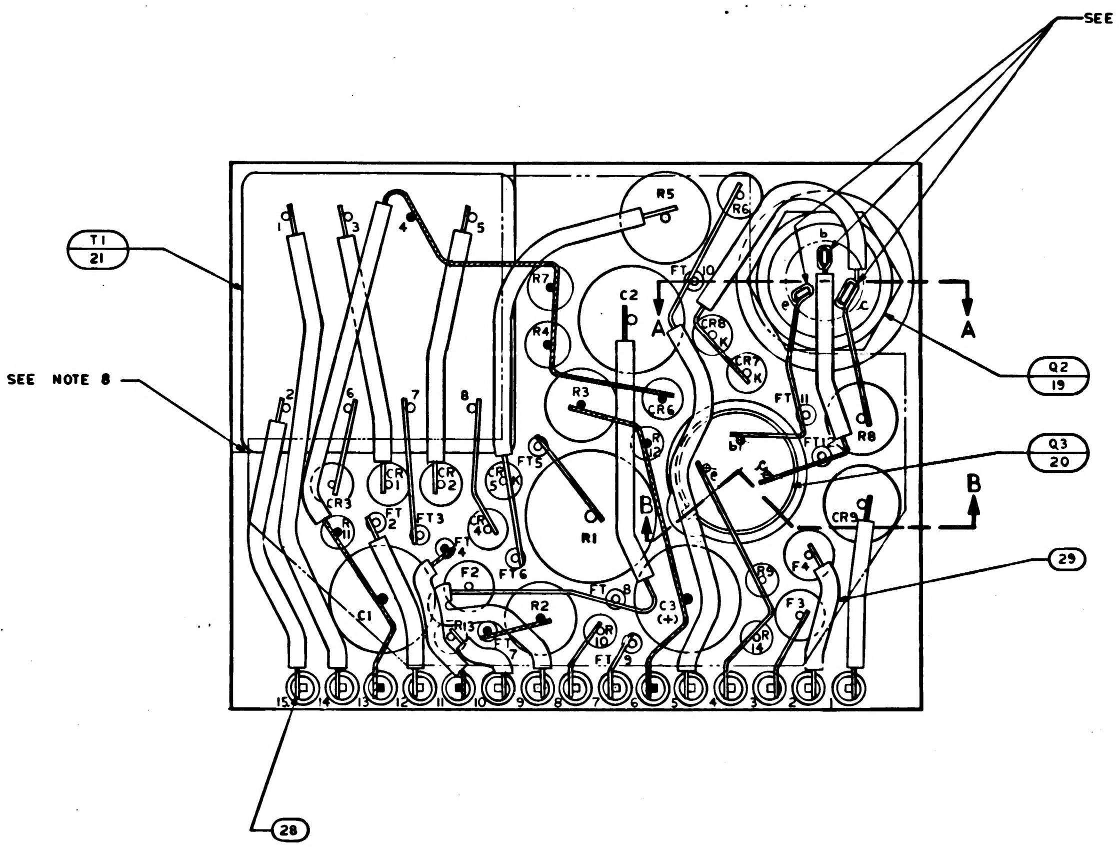
PARTIAL SECTION A-A

~~TABLE I~~

~~CONFIGURATION~~	~~BOND BETWEEN WAFER AND HEATSINK~~	~~TOP OF WAFER~~	~~HEATSINK- FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE~~
~~WAFER AND FLAT HEATSINK~~	~~100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~WAFER AND ADJACENT VERTICAL HEATSINK SURFACE~~	~~CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~HEATSINK FOAM CONTACT SURFACE PERIMETER~~	~~N/A~~	~~N/A~~	~~.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE~~

24 CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION

25. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.


SEE NOTE 3
T1
21
SEE NOTE 8
R5
R6
R7
R4
C2
R3
CR6
CR8
CR7
FT10
FT11
FT12
Q2
19
Q3
20
A
A
B
B
R8
R1
CR9
CR3
CR1
CP1
CP2
CR5
CR4
FT1
FT2
FT3
FT4
FT5
FT6
FT7
FT8
F2
R2
R13
C1
C3
(+)
R9
F4
F3
CR10
CR2
29
28
1
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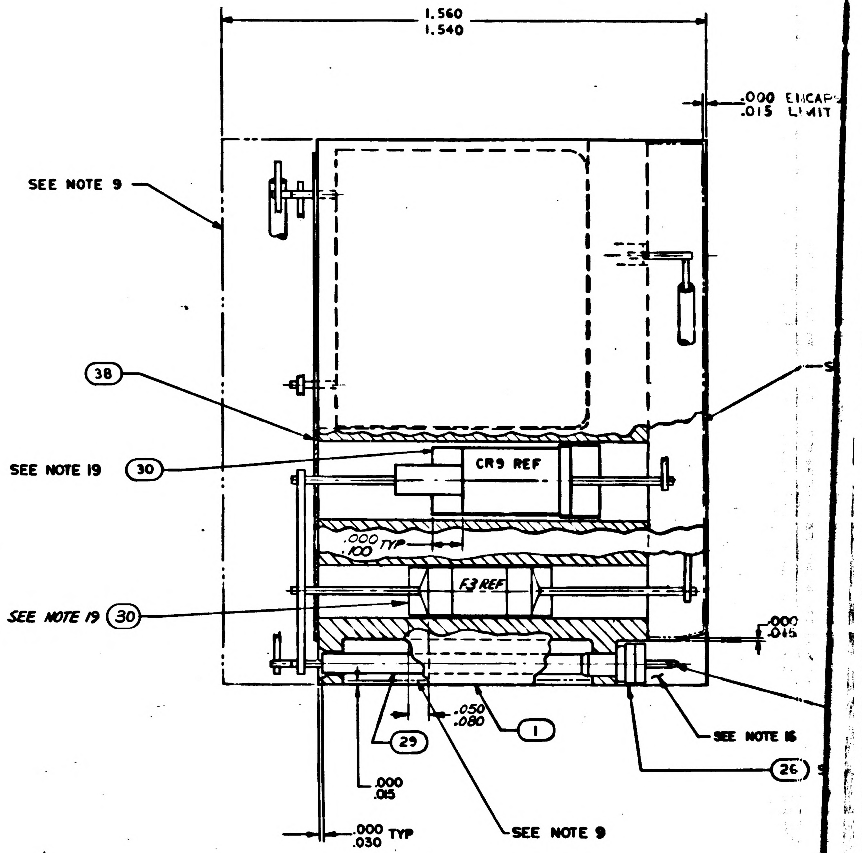
9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.015 LIMIT
SEE NOTE 9
38
CR9 REF
SEE NOTE 19
30
.000 TYP
.100
F3 REF
SEE NOTE 19
30
.000
.015
.050
.080
1
29
.000
.015
.000 TYP
.030
SEE NOTE 9
SEE NOTE 16
26

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005
3. SOLDER PER ND1002071
4. ASSEMBLE FIND NO. 25 AND FIND NO 26 PER ND1002136.
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. STAKE ALL ELECTRICAL COMPONENTS, FIND NO. 35 AND FIND NO. 36 PER ND1002009 METHOD J AND CENTRALIZE
8. BOND ALL MATING SURFACES OF FIND NO. 21 TO FIND NO. 1 PER ND 1002004 TYPE I
9. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
10. VALUE TO BE DETERMINED BY ELECTRICAL TEST, FIND NO. 5 TO BE SELECTED FROM CHART A PER ATP 1007125
11. VALUE TO BE DETERMINED BY ELECTRICAL TEST. FIND NO. 6 TO BE SELECTED FROM CHART B PER ATP 1007125
12. MARK PIN NUMBERS $\frac{.100}{.080}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
13. MOUNTING TORQUE FOR FIND NO. 34 TO BE 12 TO 14 INCH POUNDS
14. FILL PER ND1002117
15. AR DENOTES AS REQUIRED

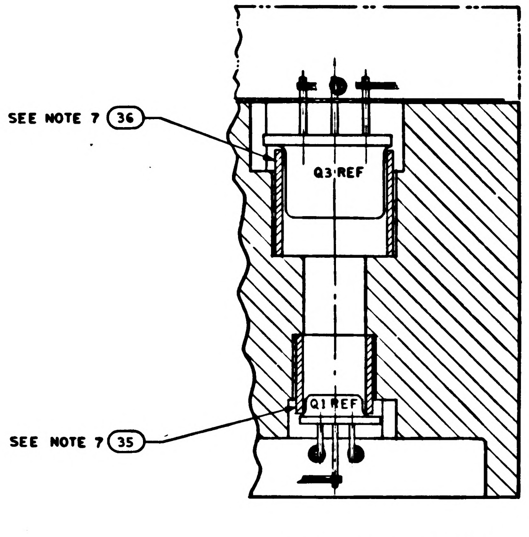
16. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
17. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
~~18. BOND FIND NO. 38 TO FIND NO. 28 PER ND 1002237~~
19. BOND FIND NO. 30 TO FIND NO 17, 23 AND 24. CURE AT AIR TEMPERATURE BEFORE ASSEMBLING TO FIND NO. 1
20. ON ITEM FIND NO'S. 37 AND 38 :
    BROKEN PATHS INDICATE INSULATION SLEEVING
    FT DENOTES FEED THRU
    K DENOTES CATHODE SIDE OF DIODE
    + DENOTES POSITIVE SIDE OF CAPACITOR
    C INDICATES COLLECTER LEAD OF TRANSISTOR
    E INDICATES EMITTER LEAD OF TRANSISTOR
    B INDICATES BASE LEAD OF TRANSISTOR
21. PROCURE PER PS-1007125
~~22. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
~~23. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~

CHART A
(R5, FIND NO. 5 – REF)

PART NUMBER	VALUE OHMS
1010267 – 171	1470
1010267 – 172	1500
1010267 – 173	1540
1010267 – 174	1580
1010267 – 175	1620
1010267 – 176	1650
1010267 – 177	1690

CHART B
(R6, FIND NO. 6 – REF)

PART NUMBER	VALUE OHMS
1010364 – 255	1050
1010364 – 257	1070
1010364 – 259	1100
1010364 – 261	1130
1010364 – 263	1150
1010364 – 265	1180

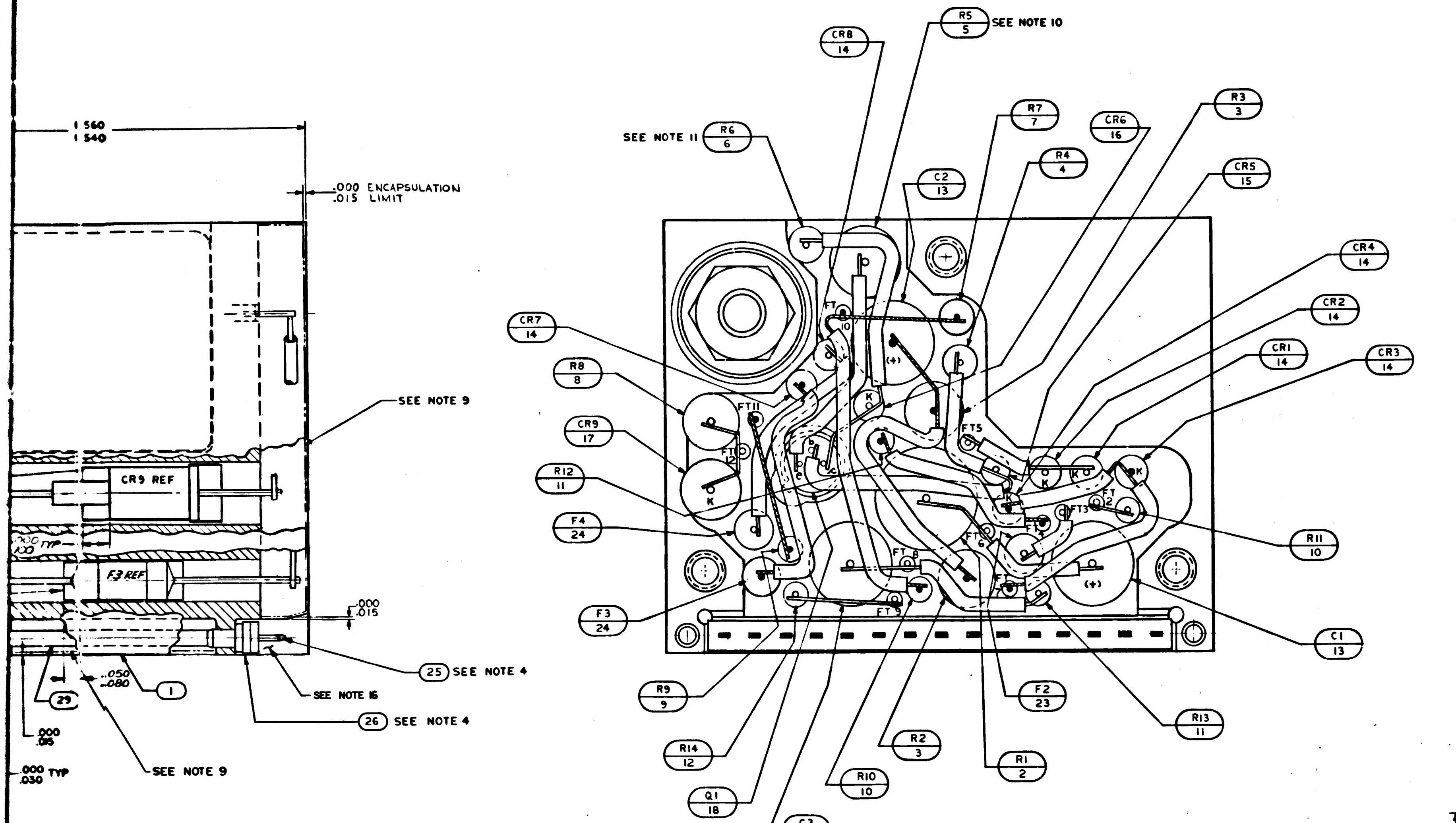

SEE NOTE 7
36
Q3 REF
Q1 REF
SEE NOTE 7
35

PARTIAL SECTION B-B

1007525	REV LTR G	SH NO. 1 OF 1

17-1007525

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16834	5 MAR 65	
B	REVISED PER TDRR 17303	12-MAR-65	CP
C	REVISED PER TDRR 19452	2 JUN 65	EF
D	REVISED PER TDRR 19504	7 JUN 65	JKP
E	REVISED PER TDRR 20143	19 JUN 65	
F	REVISED PER TDRR 20430	3 JUL 65	
G	REVISED PER TDRR 22933	65	
H	REVISED PER TDRR 24293	30 NOV 65	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1.540
.000 ENCAPSULATION
.015 LIMIT
SEE NOTE 9
CR9 REF
.000 TYP
.100
F3 REF
.000
.015
.050
.080
25 SEE NOTE 4
SEE NOTE 16
26 SEE NOTE 4
29
1
.000
.015
.000 TYP
.030
SEE NOTE 9
R5 5 SEE NOTE 10
CR8 14
R7 7
CR6 16
R3 3
SEE NOTE 11 R6 6
R4 4
C2 13
CR5 15
CR4 14
CR2 14
CR7 14
CR1 14
CR3 14
R8 8
CR9 17
R12 11
F4 24
R11 10
F3 24
C1 13
F2 23
R13 11
R9 9
R14 12
R2 3
R1 2
R10 10
Q1 18
C3 13
FT 11
FT 12
FT 10
FT 5
FT 6
FT 2
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FT 9
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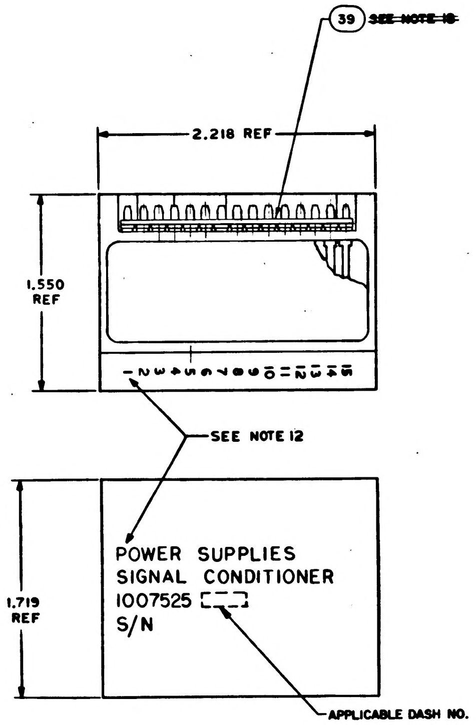

39 ~~SEE NOTE 18~~
2.218 REF
1.550 REF
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
SEE NOTE 12
1.719 REF
POWER SUPPLIES
SIGNAL CONDITIONER
1007525 [ ]
S/N
APPLICABLE DASH NO.

MARKING VIEWS
SCALE 2/1

					FIND NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
					REF	1009571	SCHEMATIC
			AR		40	1010848-2	WIRE, ELECTRICAL
			~~1~~		~~39~~	~~1008540-18~~	~~GASKET, CONNECTOR MINIATURE~~
			1		38	1008174	INSULATOR
			~~1~~		~~37~~	~~1008173~~	~~INSULATOR~~
			1		36	1008025-2	INSULATOR, BUSHING
			1		35	1008025-1	INSULATOR BUSHING
			1		34	MS 20341-10B	NUT, HEX
			1		33	1008071-2	WASHER, FLAT
			2		32	1008024-1	WASHER, INSULATOR
			1		31	1008021-1	BUSHING, INSULATOR
			AR		30	MIL-I-15126	INSUL TAPE TYPE MFT2.5, ½ WIDE
			AR		29	1006776-22	INSULATION SLEEVING
			AR		28	1006757-1	WIRE, ELECTRICAL
			~~AR~~		~~27~~	~~1006787-2~~	~~WIRE, ELECTRICAL~~
			15		26	1006775	INSULATOR, WRAPOST-MALE, MINAT
			15		25	1006782-5	CONTACT, WRAPOST-MALE, MINAT
			2		24	1000170-6	FUSE
			1		23	1000170-4	FUSE
			~~1~~		~~22~~	~~1000170-2~~	~~FUSE~~
			1		21	1010751	TRANSFORMER
			1		20	1010398-1	TRANSISTOR
			1		19	1010269-1	TRANSISTOR
			1		18	1010633-1	TRANSISTOR
			1		17	1010829-25	DIODE
			1		16	1010259	DIODE
			1		15	1010372-24	DIODE
			6		14	1010362-001	DIODE
			3		13	1006789-002	CAPACITOR
			1		12	1006750-49	RESISTOR
			2		11	1006750-56	RESISTOR
			2		10	1006750-43	RESISTOR
			1		9	1010369-141	RESISTOR
			1		8	1010389-50	RESISTOR
			1		7	1010364-225	RESISTOR
			1		6	1010364 - SEE NOTE 11	RESISTOR
			1		5	1010267 - SEE NOTE 10	RESISTOR
			1		4	1010364-353	RESISTOR
			2		3	1010389-39	RESISTOR
			1		2	1010452-129	RESISTOR
			1		1	1008180	HEATSINK
			011	EFFECTIVITY			
QUANTITY REQUIRED					LIST OF MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007460		
1007580		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN S. Agne DATE 21 AUG 64
CHECKED A. Udnaich 28 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL 6 Oct 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLIES
MODULE ASSEMBLY -
SIGNAL CONDITIONER

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007525
SCALE 5/1
WT
SHEET 1 OF 1

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK- FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE

24. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION

25. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005
3. SOLDER PER ND1002071
4. ASSEMBLE FIND NO. 25 AND FIND NO 26 PER ND1002136.
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. STAKE ALL ELECTRICAL COMPONENTS, FIND NO. 35 AND FIND NO. 36 PER ND1002009 METHOD J AND CENTRALIZE
8. BOND ALL MATING SURFACES OF FIND NO. 21 TO FIND NO. 1 PER ND 1002004 TYPE I
9. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
10. VALUE TO BE DETERMINED BY ELECTRICAL TEST, FIND NO. 5 TO BE SELECTED FROM CHART A PER ATP 1007125
11. VALUE TO BE DETERMINED BY ELECTRICAL TEST. FIND NO. 6 TO BE SELECTED FROM CHART B PER ATP 1007125
12. MARK PIN NUMBERS $\substack{.100 \\ .080}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\substack{.140 \\ .100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
13. MOUNTING TORQUE FOR FIND NO. 34 TO BE 12 TO 14 INCH POUNDS
14. FILL PER ND1002117
15. AR DENOTES AS REQUIRED

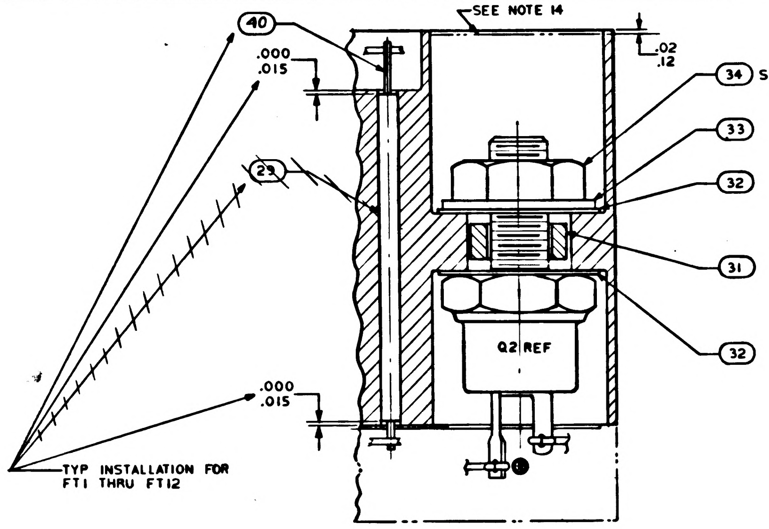
16. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
17. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
18. ~~BOND FIND NO. 39 TO FIND NO. 28 PER ND 1002237~~
19. BOND FIND NO. 30 TO FIND NO. 17, 23 AND 24. CURE AT AIR TEMPERATURE BEFORE ASSEMBLING TO FIND NO. 1
20. ON ITEM FIND NO'S. 37 AND 38 :
    - BROKEN PATHS INDICATE INSULATION SLEEVING
    - FT DENOTES FEED THRU
    - K DENOTES CATHODE SIDE OF DIODE
    - + DENOTES POSITIVE SIDE OF CAPACITOR
    - C INDICATES COLLECTER LEAD OF TRANSISTOR
    - E INDICATES EMITTER LEAD OF TRANSISTOR
    - B INDICATES BASE LEAD OF TRANSISTOR
21. PROCURE PER PS-1007125
22. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
23. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~

CHART A
(R5, FIND NO. 5 – REF)

PART NUMBER	VALUE OHMS
1010267 – 171	1470
1010267 – 172	1500
1010267 – 173	1540
1010267 – 174	1580
1010267 – 175	1620
1010267 – 176	1650
1010267 – 177	1690

CHART B
(R6, FIND NO. 6 – REF)

PART NUMBER	VALUE OHMS
1010364 – 255	1050
1010364 – 257	1070
1010364 – 259	1100
1010364 – 261	1130
1010364 – 263	1150
1010364 – 265	1180


40
SEE NOTE 14
.02
.12
34 SEE NOTE 13
33
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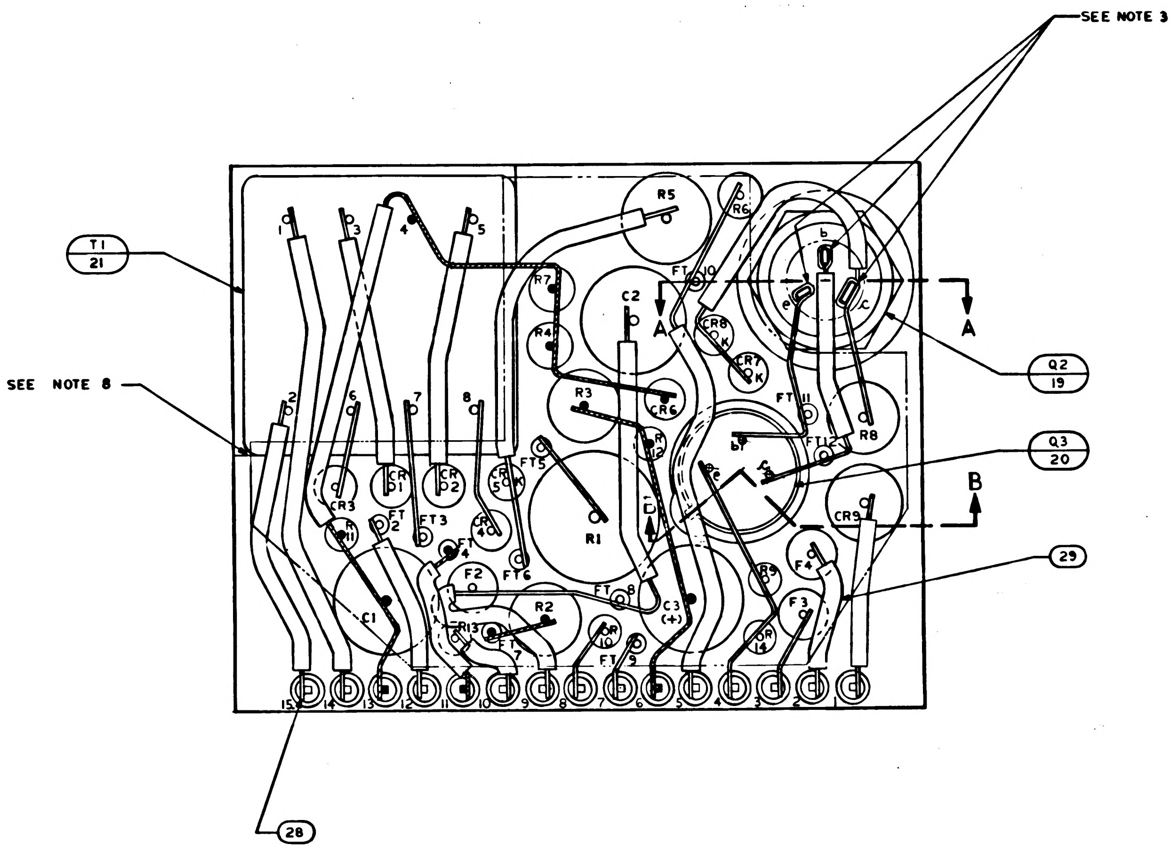
.015
Q2 REF
.000
.015
TYP INSTALLATION FOR
FT1 THRU FT12

PARTIAL SECTION A-A


SEE NOTE 3
T1
21
SEE NOTE 8
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R7
R4
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CR8
CR7
R1
R2
R8
CR9
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CR3
CR1
CR2
CR4
CR5
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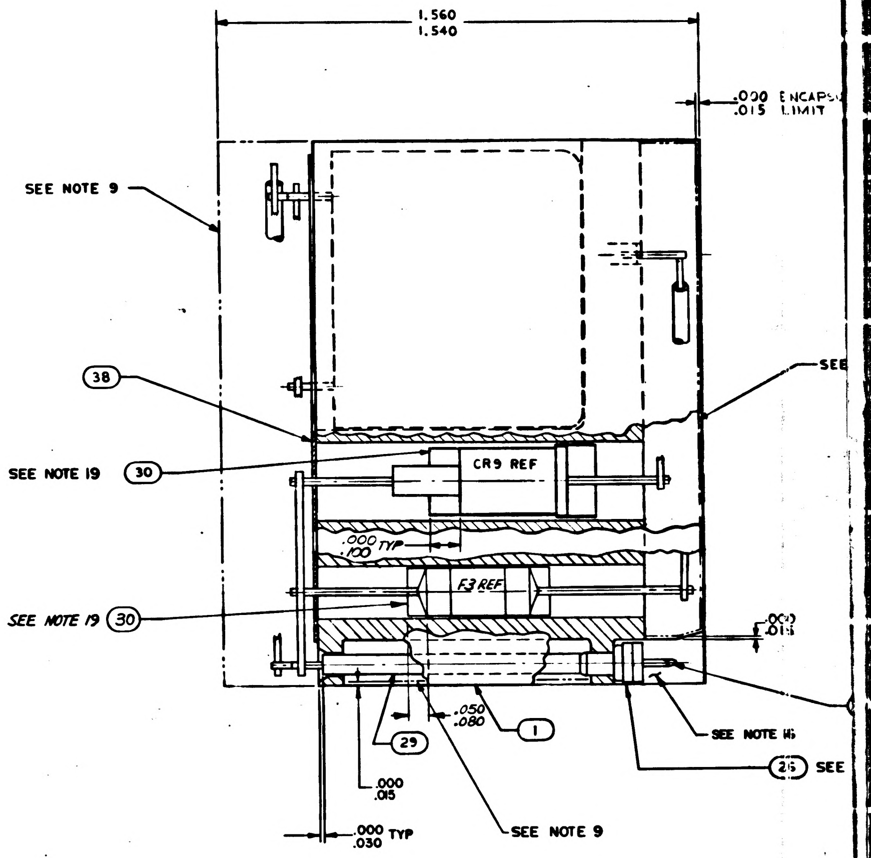
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.015 LIMIT
SEE NOTE 9
38
SEE
SEE NOTE 19
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CR9 REF
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.100 TYP
F3 REF
SEE NOTE 19
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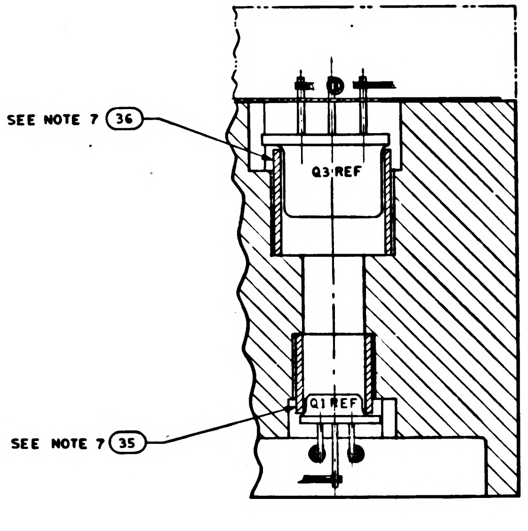
1
29
SEE NOTE 16
25 SEE
.000
.015
.000 TYP
.030
SEE NOTE 9

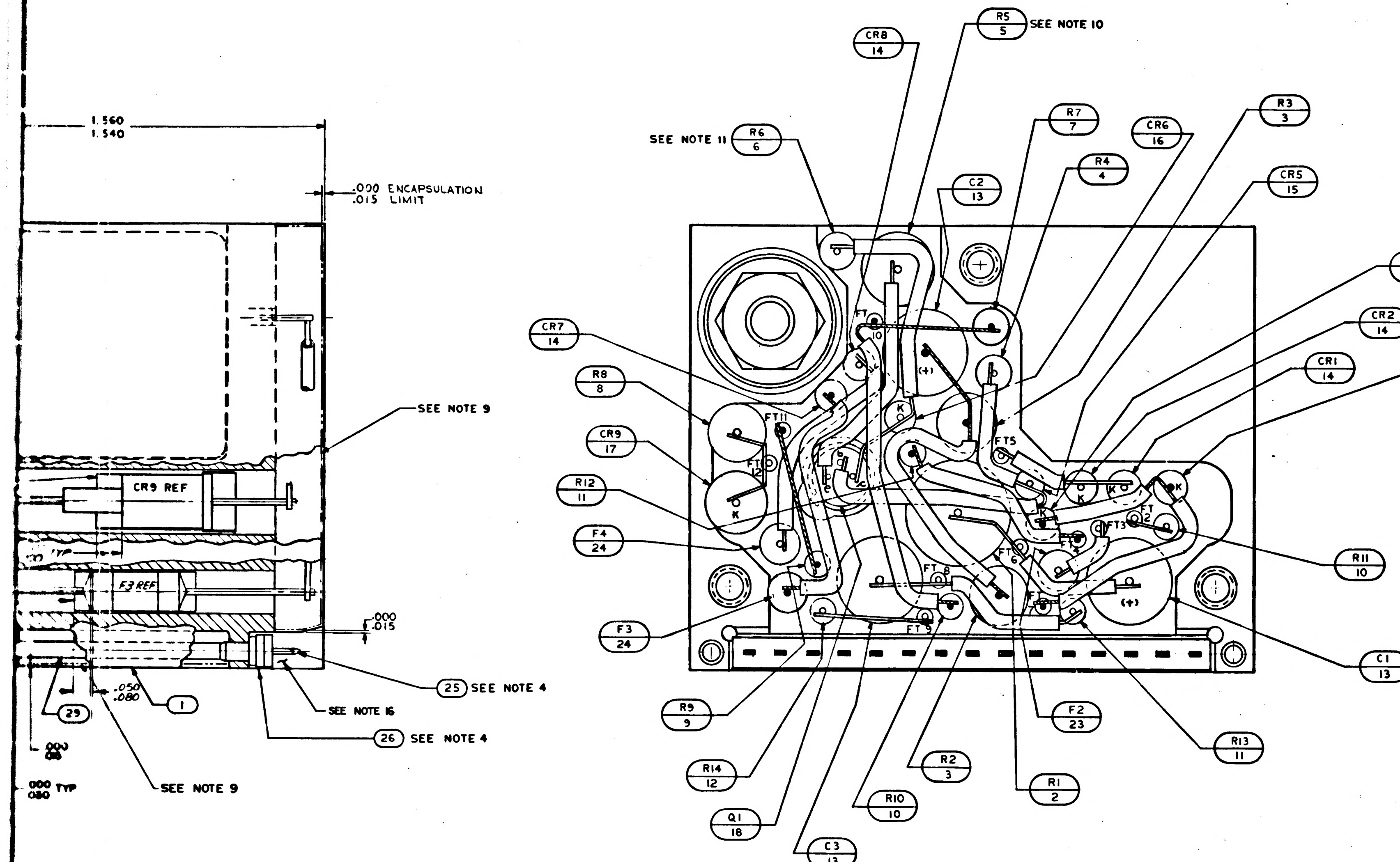

SEE NOTE 7
36
Q3 REF
SEE NOTE 7
35
Q1 REF

PARTIAL SECTION B-B

1007525	REV LTR H	SH NO. 1 OF 1

1007525 J

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16834	5 MAR 65	
B	REVISED PER TDRR 17303	12-MAR-65	CP
C	REVISED PER TDRR 19452	2 JUN 65	
D	REVISED PER TDRR 19504	7 Jun 65	JKP
E	REVISED PER TDRR 20143	19 JUN 65	DRD
F	REVISED PER TDRR 20430	3 JUL 65	RLP
G	REVISED PER TDRR 22933	12 OCT 65	J.K
H	REVISED PER TDRR 24293	30 NOV 65	JK
J	REVISED PER TDRR 26035	15 FEB 66	CP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SEE NOTE 9
CR9 REF
F3 REF
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.015
25 SEE NOTE 4
SEE NOTE 16
26 SEE NOTE 4
.050
.080
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29
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.015
.000
.080 TYP
SEE NOTE 9
R5 5 SEE NOTE 10
CR8 14
SEE NOTE 11 R6 6
R7 7
CR6 16
R3 3
C2 13
R4 4
CR5 15
CR4 14
CR2 14
CR7 14
R8 8
CR1 14
CR3 14
CR9 17
R12 11
F4 24
R11 10
F3 24
C1 13
R9 9
F2 23
R13 11
R14 12
R2 3
R1 2
R10 10
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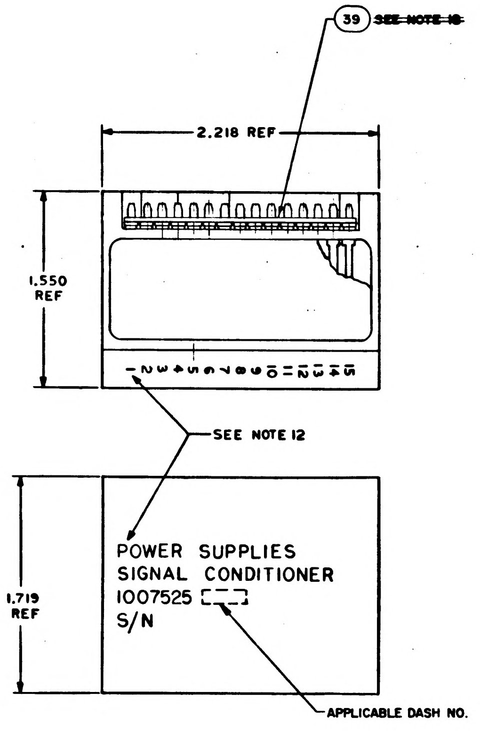

39 ~~SEE NOTE 18~~
2.218 REF
1.550 REF
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
SEE NOTE 12
1.719 REF
POWER SUPPLIES
SIGNAL CONDITIONER
1007525
S/N
APPLICABLE DASH NO.

MARKING VIEWS
SCALE 2/1

			QTY	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
					REF	1009571	SCHEMATIC
			AR		40	1010848-2	WIRE, ELECTRICAL
			1		39	1008540-15	GASKET, CONNECTOR MINIATURE
			1		38	1008174	INSULATOR
			~~1~~		~~37~~	~~1008173~~	~~INSULATOR~~
			1		36	1008025-2	INSULATOR, BUSHING
			1		35	1008025-1	INSULATOR BUSHING
			1		34	MS 20341-10B	NUT, HEX
			1		33	1008071-2	WASHER, FLAT
			2		32	1008024-1	WASHER, INSULATOR
			1		31	1008021-1	BUSHING, INSULATOR
			AR		30	MIL-I-15126	INSUL TAPE TYPE MFT2.5, 1/2 WIDE
			AR		29	1006776-22	INSULATION SLEEVING
			AR		28	1006757-1	WIRE, ELECTRICAL
			~~AR~~		~~27~~	~~1006787-2~~	~~WIRE, ELECTRICAL~~
			15		26	1006775	INSULATOR, WRAPOST-MALE, MINAT
			15		25	1006782-5	CONTACT, WRAPOST-MALE, MINAT
			2		24	1000170-6	FUSE
			1		23	1000170-4	FUSE
			~~1~~		~~22~~	~~1000170-2~~	~~FUSE~~
			1		21	1010751	TRANSFORMER
			1		20	1010398-1	TRANSISTOR
			1		19	1010269-1	TRANSISTOR
			1		18	1010633-1	TRANSISTOR
			1		17	1010829-25	DIODE
			1		16	1010259	DIODE
			1		15	1010372-24	DIODE
			6		14	1010362-001	DIODE
			3		13	1006789-002	CAPACITOR
			1		12	1006750-49	RESISTOR
			2		11	1006750-56	RESISTOR
			2		10	1006750-43	RESISTOR
			1		9	1010369-141	RESISTOR
			1		8	1010389-50	RESISTOR
			1		7	1010364-225	RESISTOR
			1		6	1010364 - SEE NOTE 11	RESISTOR
			1		5	1010267 - SEE NOTE 10	RESISTOR
			1		4	1010364-353	RESISTOR
			2		3	1010389-39	RESISTOR
			1		2	1010452-129	RESISTOR
			1		1	1008180	HEATSINK
			011				
QUANTITY REQUIRED						LIST OF MATERIALS	

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007460		
1007580		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —//—
HEAT TREATMENT —//—
FINAL FINISH —//—

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN S. Agne DATE 21 AUG 64
CHECKED A. Udnaick 28 AUG 64
APPROVAL
APPROVAL 10-6-64
NASA APPROVAL 10-6-64
MIT APPROVAL 6 Oct 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLIES
MODULE ASSEMBLY -
SIGNAL CONDITIONER

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007525
SCALE 5/1
WT
SHEET 1 OF 1

1007525

007525 REV J SHEET 1 OF 1

2/1007525

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK- FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

24. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION
25. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

NOTES:

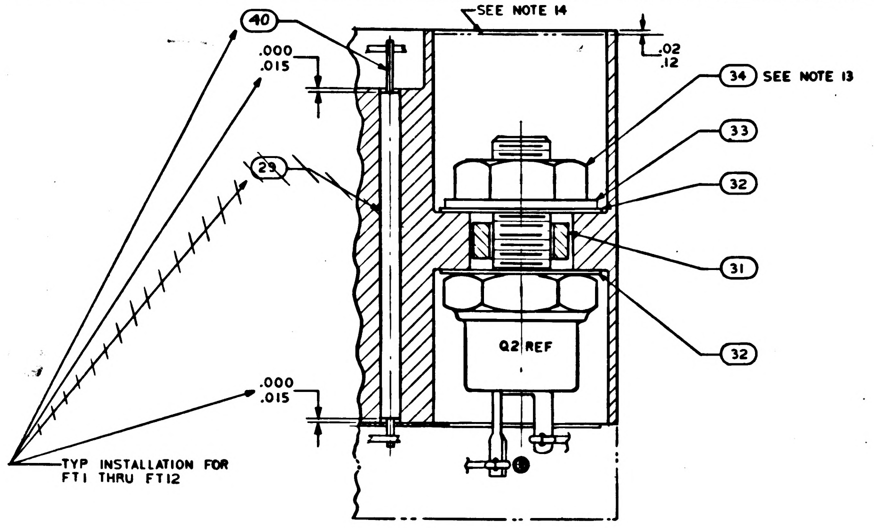
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005
3. SOLDER PER ND1002071
4. ASSEMBLE FIND NO. 25 AND FIND NO 26 PER ND1002136.
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. STAKE ALL ELECTRICAL COMPONENTS, FIND NO. 35 AND FIND NO. 36 PER ND1002009 METHOD J AND CENTRALIZE
8. BOND ALL MATING SURFACES OF FIND NO. 21 TO FIND NO. 1 PER ND 1002004 TYPE I
9. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
10. VALUE TO BE DETERMINED BY ELECTRICAL TEST, FIND NO. 5 TO BE SELECTED FROM CHART A PER ATP 1007125
11. VALUE TO BE DETERMINED BY ELECTRICAL TEST. FIND NO. 6 TO BE SELECTED FROM CHART B PER ATP 1007125
12. MARK PIN NUMBERS $\frac{.100}{.080}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
13. MOUNTING TORQUE FOR FIND NO. 34 TO BE 12 TO 14 INCH POUNDS
14. FILL PER ND1002117
15. AR DENOTES AS REQUIRED
16. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
17. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
18. ~~BOND FIND NO. 39 TO FIND NO. 28 PER ND 1002237~~
19. BOND FIND NO. 30 TO FIND NO 17, 23 AND 24. CURE AT AIR TEMPERATURE BEFORE ASSEMBLING TO FIND NO. 1
20. ON ITEM FIND NO'S. 37 AND 38 :
    - BROKEN PATHS INDICATE INSULATION SLEEVING
    - FT DENOTES FEED THRU
    - K DENOTES CATHODE SIDE OF DIODE
    - + DENOTES POSITIVE SIDE OF CAPACITOR
    - C INDICATES COLLECTER LEAD OF TRANSISTOR
    - E INDICATES EMITTER LEAD OF TRANSISTOR
    - B INDICATES BASE LEAD OF TRANSISTOR
21. PROCURE PER PS-1007125
22. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
23. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~

CHART A
(R5, FIND NO. 5 — REF)

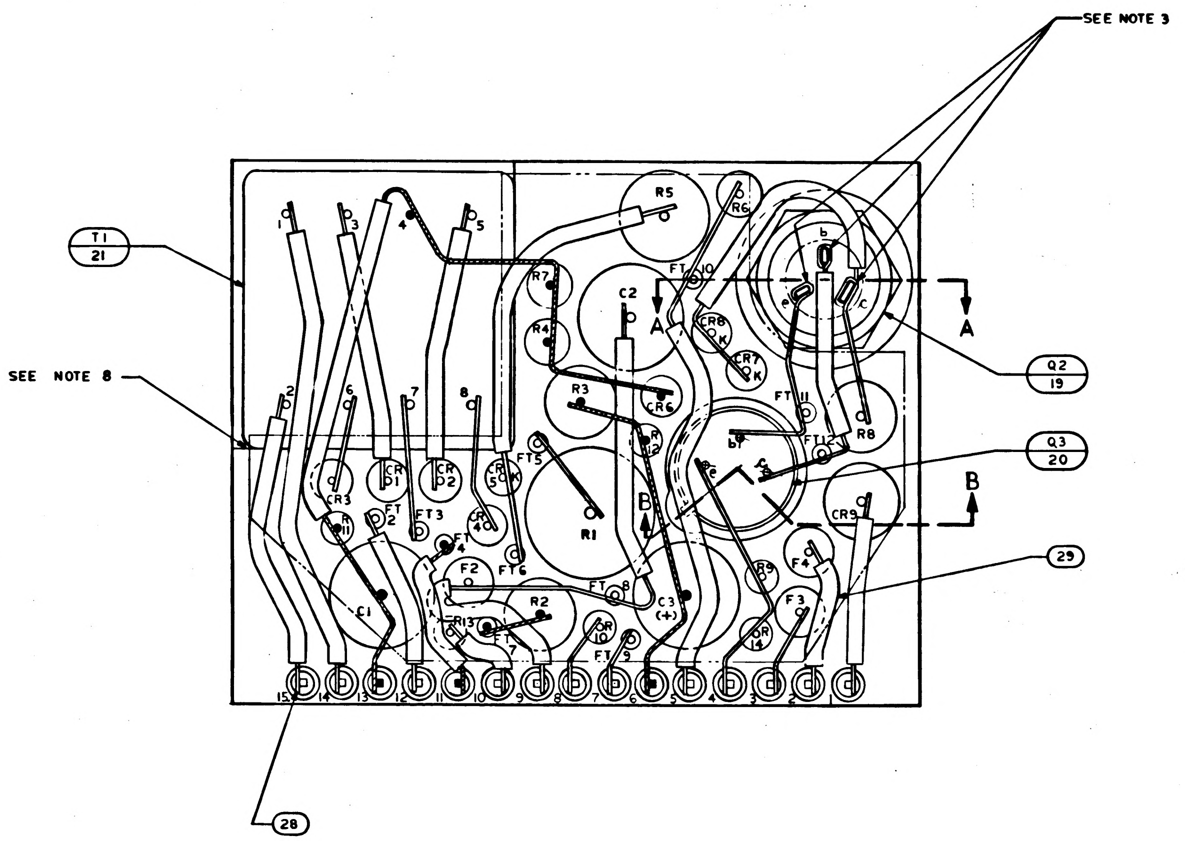
PART NUMBER	VALUE OHMS
1010267 — 171	1470
1010267 — 172	1500
1010267 — 173	1540
1010267 — 174	1580
1010267 — 175	1620
1010267 — 176	1650
1010267 — 177	1690

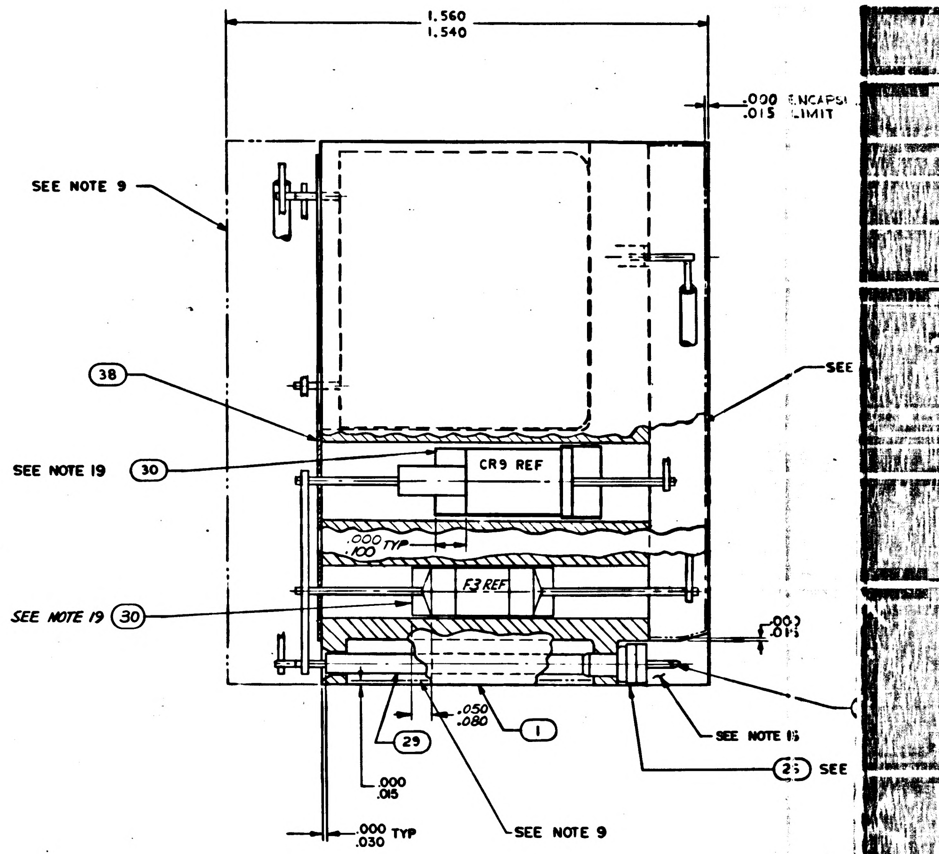
CHART B
(R6, FIND NO. 6 — REF)

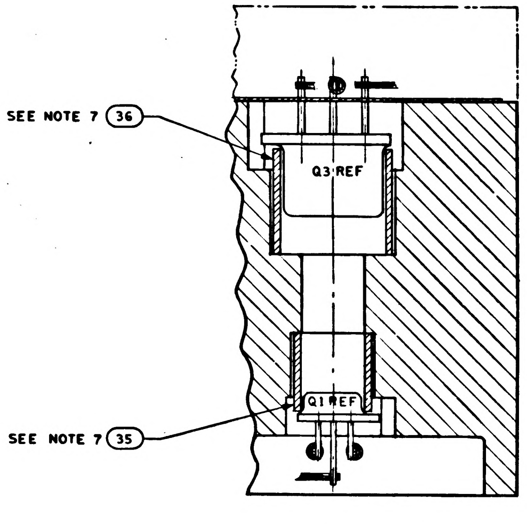
PART NUMBER	VALUE OHMS
1010364 — 255	1050
1010364 — 257	1070
1010364 — 259	1100
1010364 — 261	1130
1010364 — 263	1150
1010364 — 265	1180



PARTIAL SECTION A-A



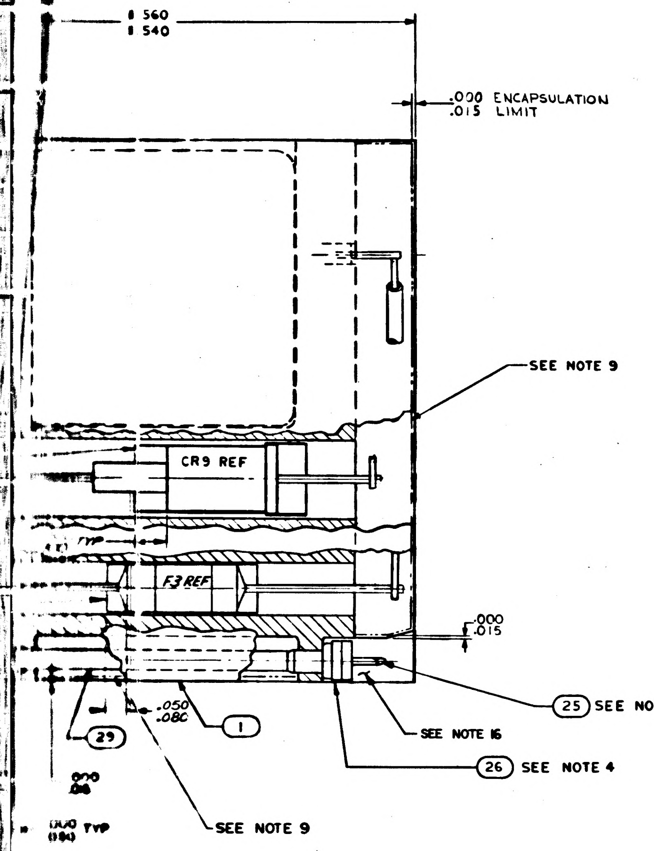


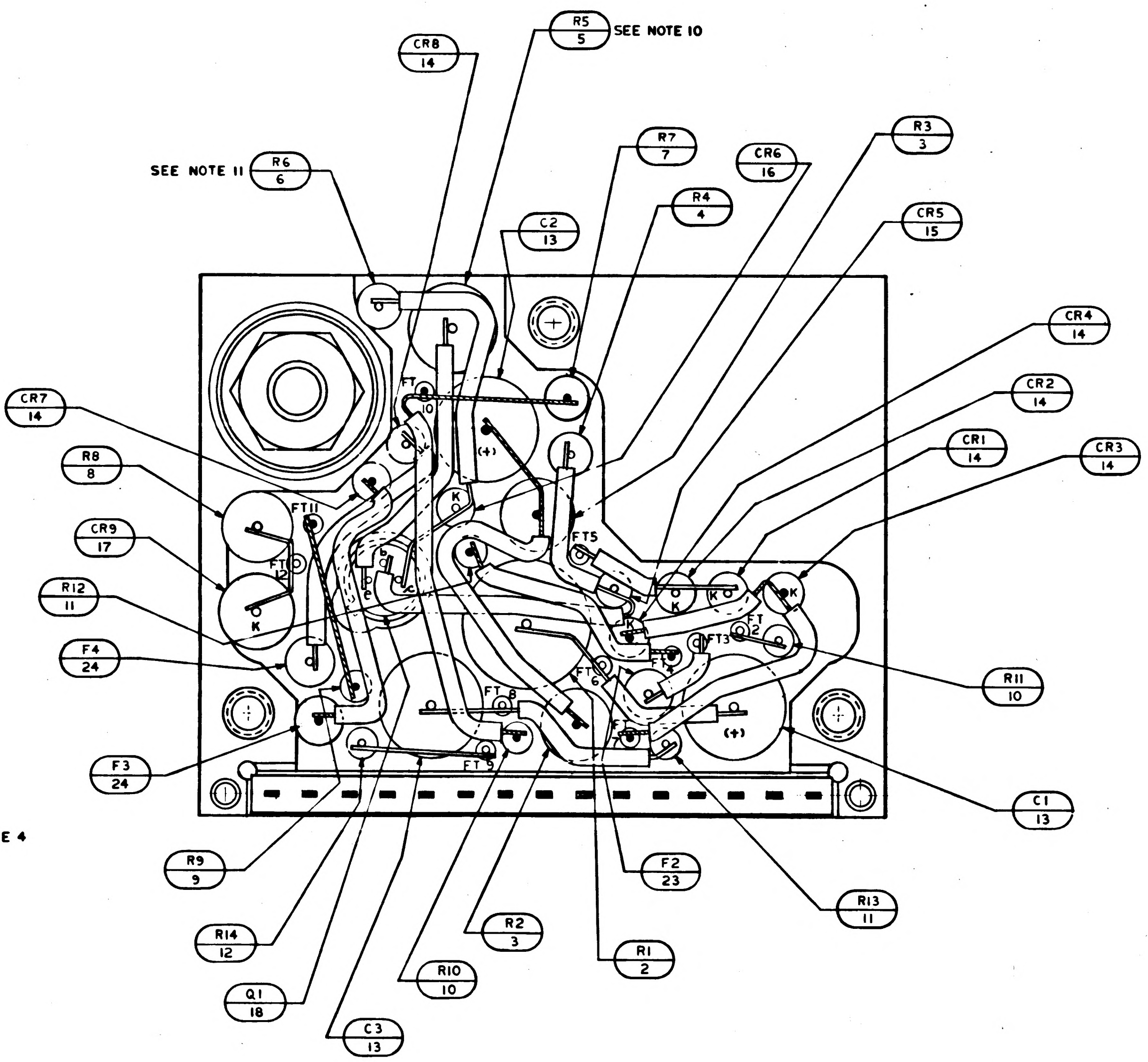


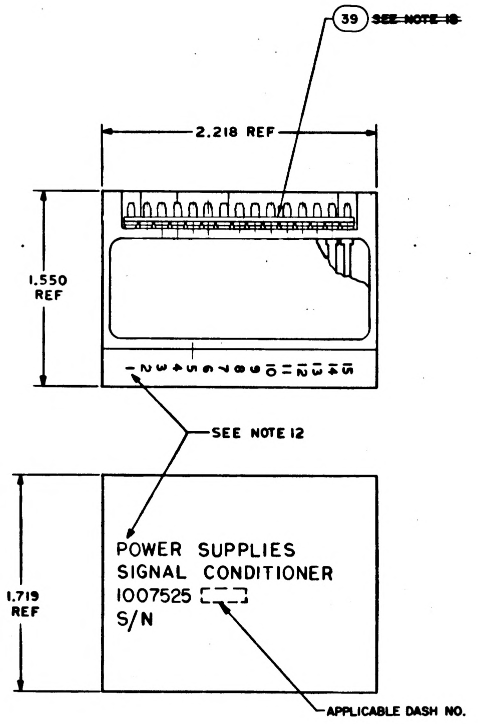
PARTIAL SECTION B-B

1007525	REV LTR H	SH NO. 1 OF 1

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16834	5 MAR 65	
B	REVISED PER TDRR 17303	12 MAR 65	CP
C	REVISED PER TDRR 19452	2 JUN 65	
D	REVISED PER TDRR 19504	7 JUN 65	JKP
E	REVISED PER TDRR 20143	19 JUN 65	DRO
F	REVISED PER TDRR 20430	3 JUL 65	RLP
G	REVISED PER TDRR 22933	12 OCT 65	J.K.
H	REVISED PER TDRR 24293	30 NOV 65	LK
J	REVISED PER TDRR 26035	15 FEB 66	CP
K	REVISED PER TDRR 26397	28 FEB 66	RP


.560
.540
.000 ENCAPSULATION
.015 LIMIT
SEE NOTE 9
CR9 REF
TYP
F3 REF
.000
.015
25 SEE NOTE 4
SEE NOTE 16
26 SEE NOTE 4
1
29
.050
.080
.000
.06
.000 TYP
SEE NOTE 9


CR8 14
R5 5 SEE NOTE 10
SEE NOTE 11 R6 6
R7 7
CR6 16
R3 3
R4 4
C2 13
CR5 15
CR4 14
CR2 14
CR1 14
CR3 14
CR7 14
R8 8
CR9 17
R12 11
F4 24
F3 24
R9 9
R14 12
Q1 18
C3 13
R10 10
R2 3
R1 2
F2 23
R13 11
C1 13
R11 10
FT1
FT2
FT3
FT5
FT6
FT8
FT9
FT11
FT12
K
(+)


39 ~~SEE NOTE 18~~
2.218 REF
1.550 REF
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
SEE NOTE 12
1.719 REF
POWER SUPPLIES
SIGNAL CONDITIONER
1007525
S/N
APPLICABLE DASH NO.

MARKING VIEWS
SCALE 2/1

021	011	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
			REF	1009571	SCHEMATIC
AR	—		41	SEE NOTE 26	MOISTUREPROOFING
AR	AR		40	1010848-2	WIRE, ELECTRICAL
1	1		39	1008540-15	GASKET, CONNECTOR MINIATURE
1	1		38	1008174	INSULATOR
	~~1~~		~~37~~	~~1008173~~	~~INSULATOR~~
1	1		36	1008025-2	INSULATOR, BUSHING
1	1		35	1008025-1	INSULATOR BUSHING
1	1		34	MS 20341-10B	NUT, HEX
1	1		33	1008071-2	WASHER, FLAT
2	2		32	1008024-1	WASHER, INSULATOR
1	1		31	1008021-1	BUSHING, INSULATOR
AR	AR		30	MIL-I-15126	INSUL TAPE TYPE MFT2.5, 1/2 WIDE
AR	AR		29	1006776-22	INSULATION SLEEVING
AR	AR		28	1006757-1	WIRE, ELECTRICAL
	~~AR~~		~~27~~	~~1006787-2~~	~~WIRE, ELECTRICAL~~
15	15		26	1006775	INSULATOR, WRAPOST-MALE, MINAT
15	15		25	1006782-5	CONTACT, WRAPOST-MALE, MINAT
2	2		24	1000170-6	FUSE
1	1		23	1000170-4	FUSE
	~~1~~		~~22~~	~~1000170-2~~	~~FUSE~~
1	1		21	1010751	TRANSFORMER
1	1		20	1010398-1	TRANSISTOR
1	1		19	1010269-1	TRANSISTOR
1	1		18	1010633-1	TRANSISTOR
1	1		17	1010829-25	DIODE
1	1		16	1010259	DIODE
1	1		15	1010372-24	DIODE
6	6		14	1010362-001	DIODE
3	3		13	1006789-002	CAPACITOR
1	1		12	1006750-49	RESISTOR
2	2		11	1006750-56	RESISTOR
2	2		10	1006750-43	RESISTOR
1	1		9	1010369-141	RESISTOR
1	1		8	1010389-50	RESISTOR
1	1		7	1010364-225	RESISTOR
1	1		6	1010364 - SEE NOTE 11	RESISTOR
1	1		5	1010267 - SEE NOTE 10	RESISTOR
1	1		4	1010364-353	RESISTOR
2	2		3	1010389-39	RESISTOR
1	1		2	1010452-129	RESISTOR
1	1		1	1008180	HEATSINK

QUANTITY REQUIRED
LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007460		
1007580		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN S. Agne DATE 21 AUG 64
CHECKED A. Udnaich 28 AUG 64
APPROVAL
APPROVAL 10-6-64
NASA APPROVAL 10-6-64
MIT APPROVAL 6 Oct 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLIES MODULE ASSEMBLY - SIGNAL CONDITIONER

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007525
SCALE 5/1
WT
SHEET 1 OF 1

(2H)

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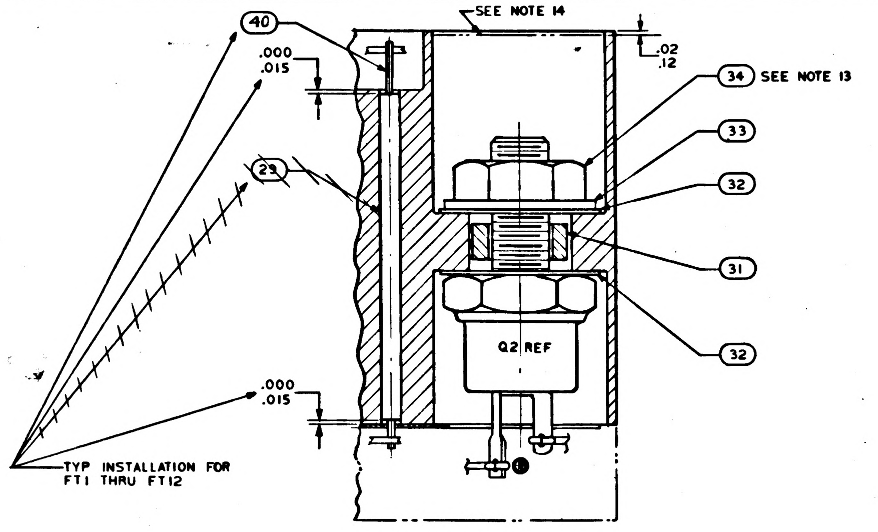


PARTIAL SECTION A-A

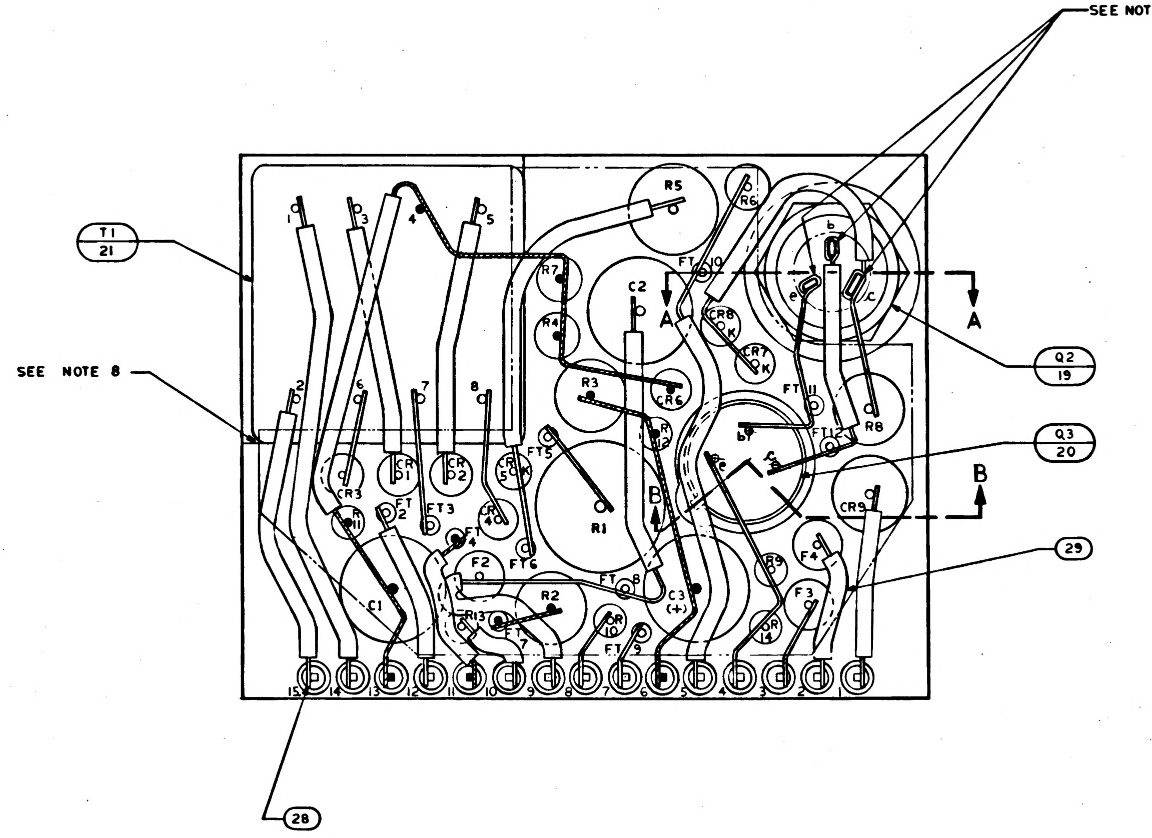
TABLE I

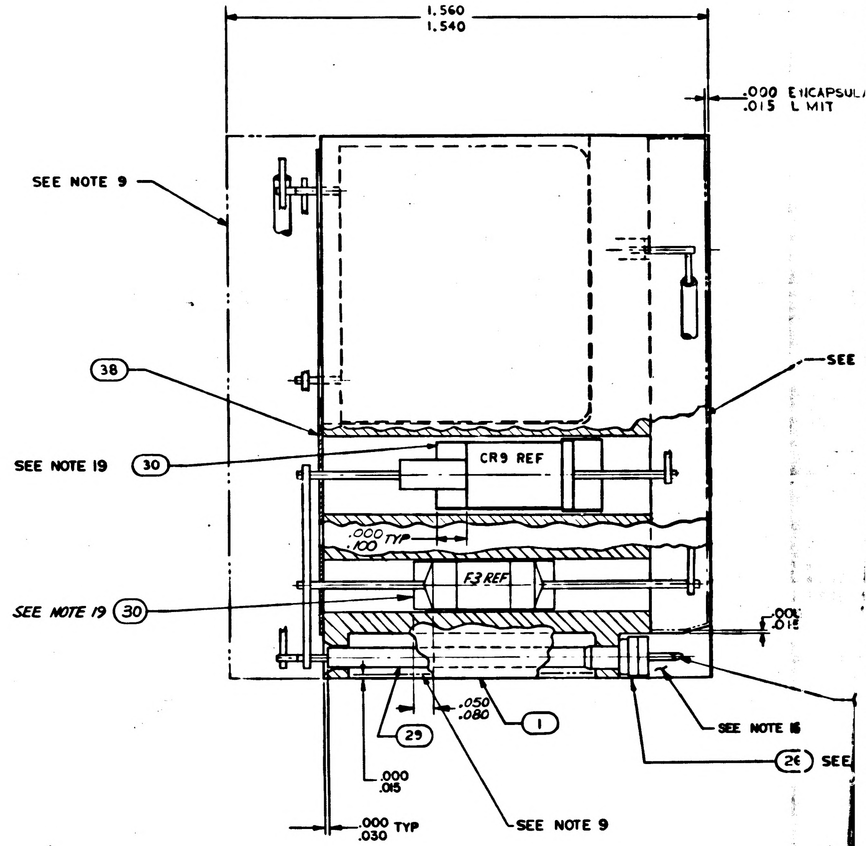
CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK- FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE

24. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION

25. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

26. MOISTUREPROOF PER ND1002292 AS REQUIRED BY FIND NO. (41) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.





NOTES:

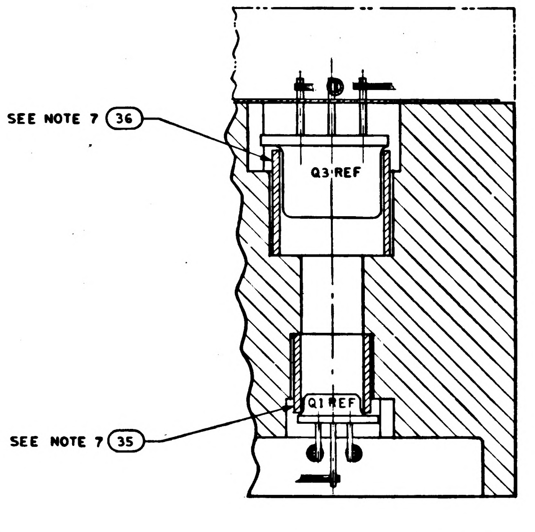
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005
3. SOLDER PER ND1002071
4. ASSEMBLE FIND NO. 25 AND FIND NO 26 PER ND1002136.
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. STAKE ALL ELECTRICAL COMPONENTS, FIND NO. 35 AND FIND NO. 36 PER ND1002009 METHOD J AND CENTRALIZE
8. BOND ALL MATING SURFACES OF FIND NO. 21 TO FIND NO. 1 PER ND 1002004 TYPE I
9. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
10. VALUE TO BE DETERMINED BY ELECTRICAL TEST, FIND NO. 5 TO BE SELECTED FROM CHART A PER ATP 1007125
11. VALUE TO BE DETERMINED BY ELECTRICAL TEST. FIND NO. 6 TO BE SELECTED FROM CHART B PER ATP 1007125
12. MARK PIN NUMBERS $^{.100}_{.080}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $^{.140}_{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
13. MOUNTING TORQUE FOR FIND NO. 34 TO BE 12 TO 14 INCH POUNDS
14. FILL PER ND1002117
15. AR DENOTES AS REQUIRED
16. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
17. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
~~18. BOND FIND NO. 39 TO FIND NO. 28 PER ND 1002237~~
19. BOND FIND NO. 30 TO FIND NO 17, 29 AND 24. CURE AT AIR TEMPERATURE BEFORE ASSEMBLING TO FIND NO. 1
20. ON ITEM FIND NO'S. 37 AND 38 :
    - BROKEN PATHS INDICATE INSULATION SLEEVING
    - FT DENOTES FEED THRU
    - K DENOTES CATHODE SIDE OF DIODE
    - + DENOTES POSITIVE SIDE OF CAPACITOR
    - C INDICATES COLLECTER LEAD OF TRANSISTOR
    - E INDICATES EMITTER LEAD OF TRANSISTOR
    - B INDICATES BASE LEAD OF TRANSISTOR
21. PROCURE PER PS-1007125
~~22. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002107 TYPE I.~~
~~23. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002107 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~

CHART A
(R5, FIND NO. 5 — REF)

PART NUMBER	VALUE OHMS
1010267 — 171	1470
1010267 — 172	1500
1010267 — 173	1540
1010267 — 174	1580
1010267 — 175	1620
1010267 — 176	1650
1010267 — 177	1690

CHART B
(R6, FIND NO. 6 — REF)

PART NUMBER	VALUE OHMS
1010364 — 255	1050
1010364 — 257	1070
1010364 — 259	1100
1010364 — 261	1130
1010364 — 263	1150
1010364 — 265	1180

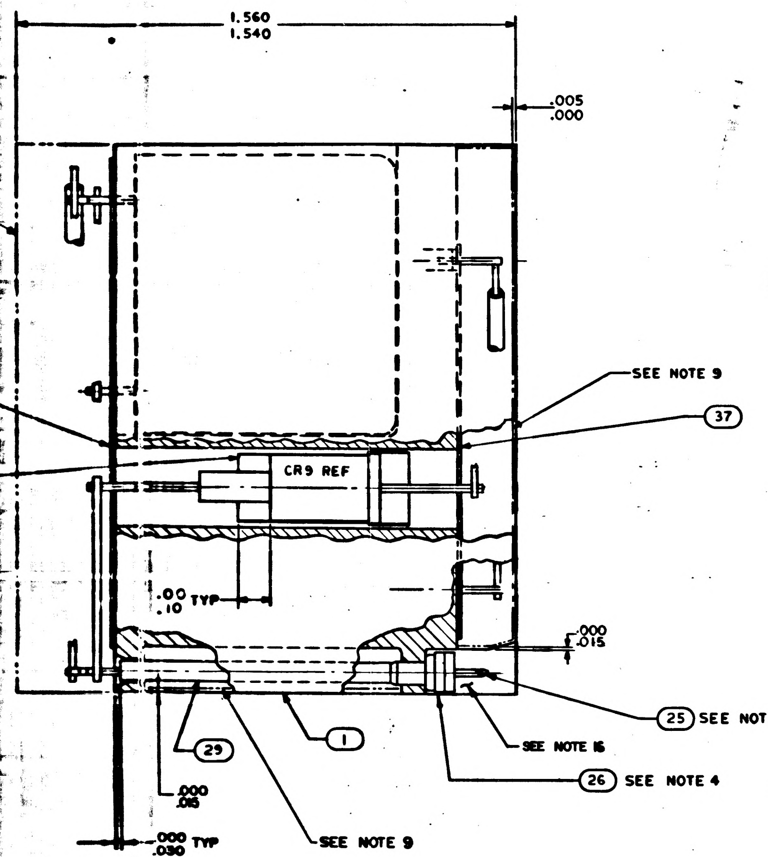


PARTIAL SECTION B-B

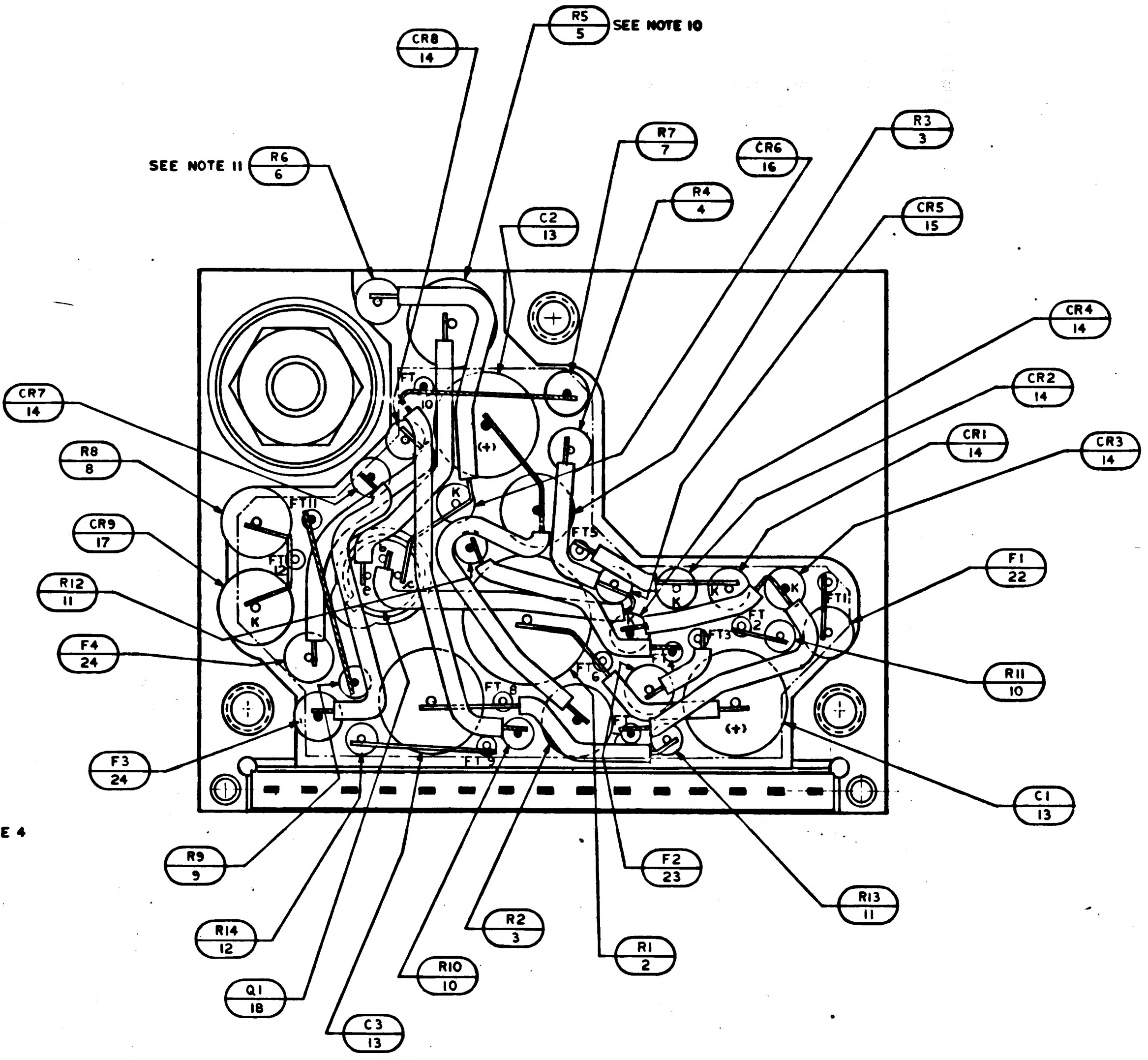
1007525	REV LTR	SH NO.
	K	1 OF 1

1007525

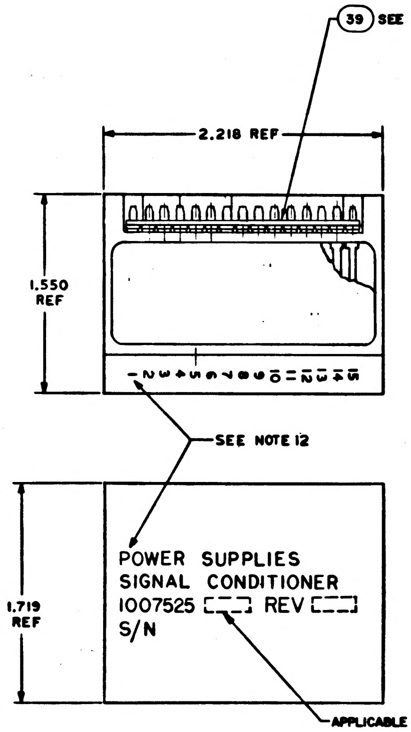
SYM	REVISIONS DESCRIPTION	DATE	APPROVAL



1.560
1.540
.005
.000
SEE NOTE 9
37
CR9 REF
.00
.10 TYP
.000
.015
25 SEE NOTE 4
SEE NOTE 16
29
1
26 SEE NOTE 4
.000
.015
.000
.030 TYP
SEE NOTE 9



CR8 14
R5 5 SEE NOTE 10
SEE NOTE 11 R6 6
R7 7
CR6 16
R3 3
R4 4
C2 13
CR5 15
CR4 14
CR7 14
CR2 14
CR1 14
CR3 14
R8 8
CR9 17
R12 11
F1 22
F4 24
R11 10
C1 13
F3 24
R13 11
F2 23
R9 9
R2 3
R1 2
R14 12
R10 10
Q1 18
C3 13
FT
K
(+)



39 SEE NOTE 18
2.218 REF
1.550 REF
SEE NOTE 12
1.719 REF
POWER SUPPLIES
SIGNAL CONDITIONER
1007525 [ ] REV [ ]
S/N
APPLICABLE DASH NO.

MARKING VIEWS
SCALE 2/1

QUANTITY REQUIRED							LIST OF MATERIALS
			011	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
			☒		REF	1010120	SCHEMATIC
			1		39	1008540-15	GASKET, CONNECTOR MINIATURE
			1		38	1008174	INSULATOR
			1		37	1008173	INSULATOR
			1		36	1008025-2	INSULATOR, BUSHING
			1		35	1008025-1	INSULATOR BUSHING
			1		34	MS 20341-10B	NUT, HEX
			1		33	1008071-2	WASHER, FLAT
			2		32	1008024-1	WASHER, INSULATOR
			1		31	1008021-1	BUSHING, INSULATOR
			AR		30	MIL-I-15126	INSUL TAPE TYPE MFT2.5, 1/2 WIDE
			AR		29	1006776-22	INSULATION SLEEVING
			AR		28	1006757-1	WIRE, ELECTRICAL
			AR		27	1006787-2	WIRE, ELECTRICAL
			15		26	1006775	INSULATOR, WRAPOST-MALE, MINAT
			15		25	1006782-5	CONTACT, WRAPOST-MALE, MINAT
			2		24	1000170-6	FUSE
			1		23	1000170-4	FUSE
			1		22	1000170-2	FUSE
			1		21	1010751	TRANSFORMER
			1		20	1010398-1	TRANSISTOR
			1		19	1010269-1	TRANSISTOR
			1		18	1010633-1	TRANSISTOR
			1		17	1010265-25	DIODE
			1		16	1010259	DIODE
			1		15	1010372-24	DIODE
			6		14	1010362-001	DIODE
			3		13	1006789-002	CAPACITOR
			1		12	1006750-49	RESISTOR
			2		11	1006750-56	RESISTOR
			2		10	1006750-43	RESISTOR
			1		9	1010369-141	RESISTOR
			1		8	1010389-50	RESISTOR
			1		7	1010364-225	RESISTOR
			1		6	1010364 - SEE NOTE 11	RESISTOR
			1		5	1010267 - SEE NOTE 10	RESISTOR
			1		4	1010364-353	RESISTOR
			2		3	1010389-39	RESISTOR
			1		2	1010452-129	RESISTOR
			1		1	1008180	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007460		
1007580		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DRAWN S. Agee DATE 21 AUG 64
CHECKED A. Ulmaich 28 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL 6 Oct 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

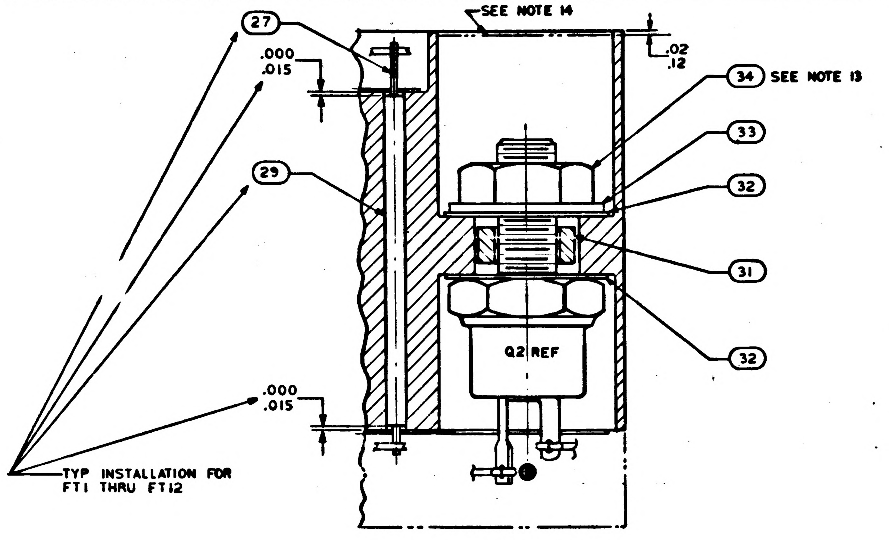
POWER SUPPLIES MODULE ASSEMBLY - SIGNAL CONDITIONER

CODE IDENT NO. SIZE J NASA DRAWING NO. 1007525
SCALE 5/1 WT SHEET 1 OF 1

1007525

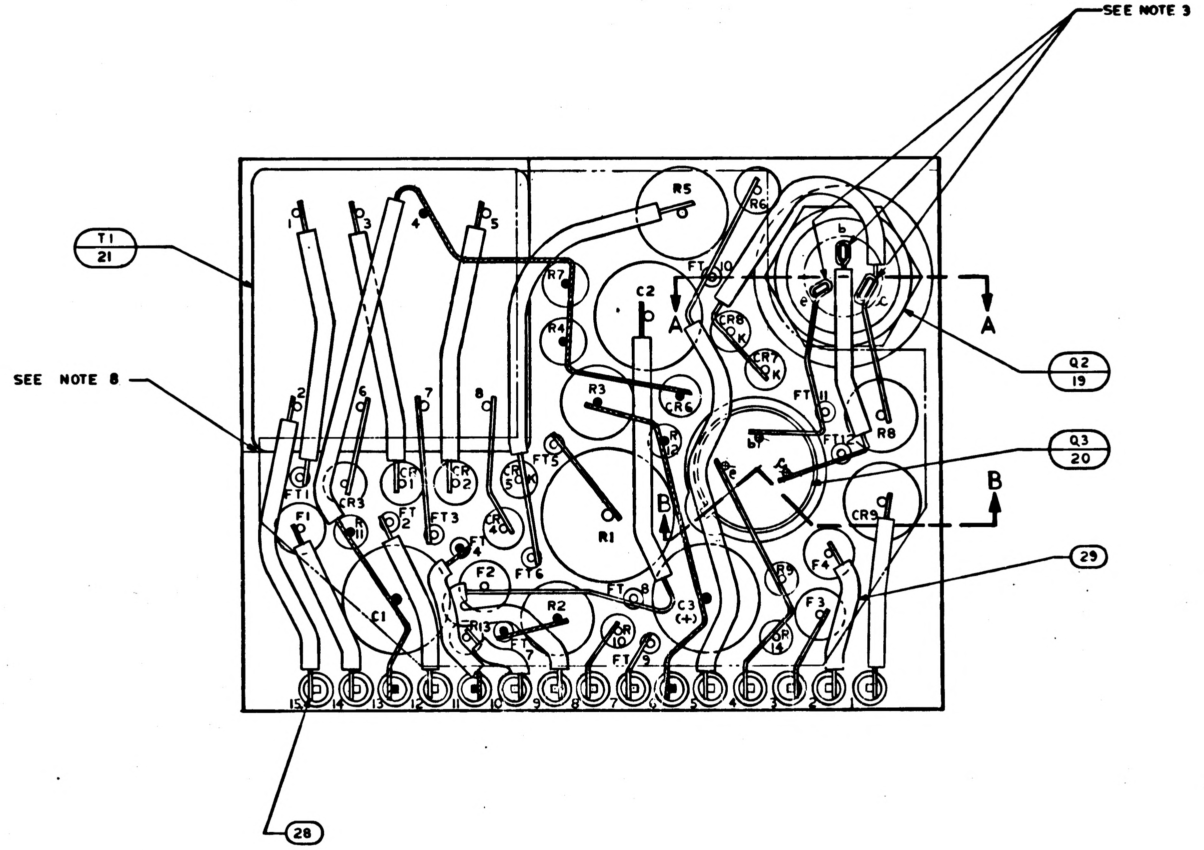
2A

[illegible]



SEE NOTE 14
27
.000
.015
.02
.12
34 SEE NOTE 13
33
32
29
31
32
Q2 REF
.000
.015
TYP INSTALLATION FOR FT1 THRU FT12

PARTIAL SECTION A-A



SEE NOTE 3
T1
21
SEE NOTE 8
R5
R6
R7
R4
C2
A
A
CR8 K
CR7 K
Q2
19
FT 10
FT 11
FT 12
R3
CR6
R8
R12
FT5
R1
CR1
CR2
CR3
CR5 K
CR4
FT1
FT2
FT3
FT4
FT6
FT7
FT8
FT9
F1
F2
F3
F4
R11
R13
R2
C1
C3 (+)
R9
R10
R14
CR9
B
B
Q3
20
29
b
e
c
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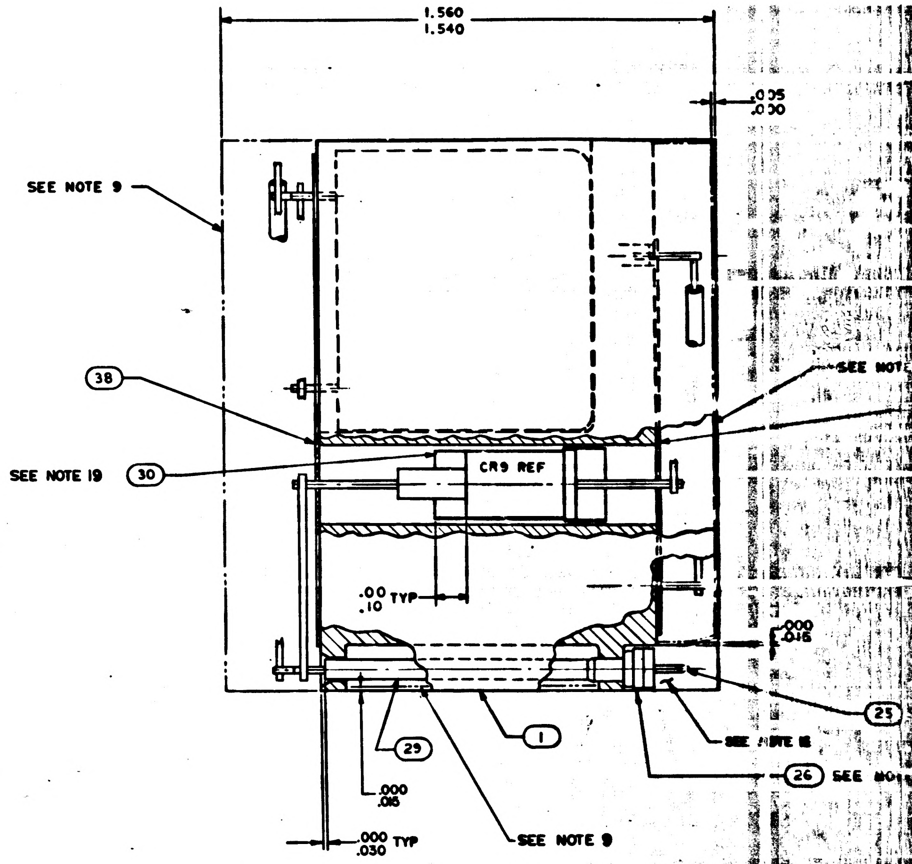
3
4
5
6
7
8
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
28



1.560
1.540
.005
.000
SEE NOTE 9
38
SEE NOTE 19
30
CR9 REF
.00
.10 TYP
.000
.015
25
29
1
.000
.015
.000
.030 TYP
SEE NOTE 9
SEE NOTE 16
26 SEE NO
SEE NOTE

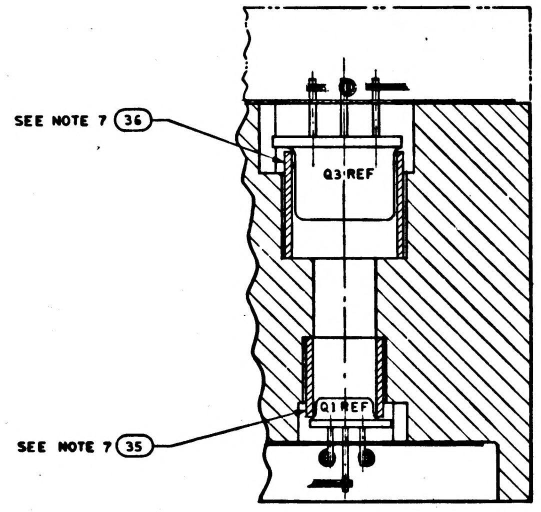
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005
3. SOLDER PER ND1002071
4. ASSEMBLE FIND NO. 25 AND FIND NO 26 PER ND1002136.
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
7. STAKE ALL ELECTRICAL COMPONENTS, FIND NO. 35 AND FIND NO. 36 PER ND1002009 METHOD C AND CENTRALIZE
8. BOND ALL MATING SURFACES OF FIND NO. 21 TO FIND NO. 1 PER ND 1002004 TYPE I
9. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
10. VALUE TO BE DETERMINED BY ELECTRICAL TEST, FIND NO. 5 TO BE SELECTED FROM CHART A PER ATP 1007125
11. VALUE TO BE DETERMINED BY ELECTRICAL TEST. FIND NO. 6 TO BE SELECTED FROM CHART B PER ATP 1007125
12. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
13. MOUNTING TORQUE FOR FIND NO. 34 TO BE 12 TO 14 INCH POUNDS
14. FILL PER ND1002117
15. AR DENOTES AS REQUIRED

16. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
17. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
18. BOND FIND NO. 39 TO FIND NO. 26 PER ND 1002237
19. BOND FIND NO. 30 TO FIND NO. 17 CURE AT AIR TEMP. BEFORE ASSEMBLING TO FIND NO. 1
20. ON ITEM FIND NO'S. 37 AND 38 :
    BROKEN PATHS INDICATE INSULATION SLEEVING
    FT DENOTES FEED THRU
    K DENOTES CATHODE SIDE OF DIODE
    + DENOTES POSITIVE SIDE OF CAPACITOR
    C INDICATES COLLECTER LEAD OF TRANSISTOR
    E INDICATES EMITTER LEAD OF TRANSISTOR
    B INDICATES BASE LEAD OF TRANSISTOR
21. PROCURE PER PS-1007125

CHART A (R5, FIND NO. 5 – REF)	
PART NUMBER	VALUE OHMS
1010267 – 171	1470
1010267 – 172	1500
1010267 – 173	1540
1010267 – 174	1580
1010267 – 175	1620
1010267 – 176	1650
1010267 – 177	1690

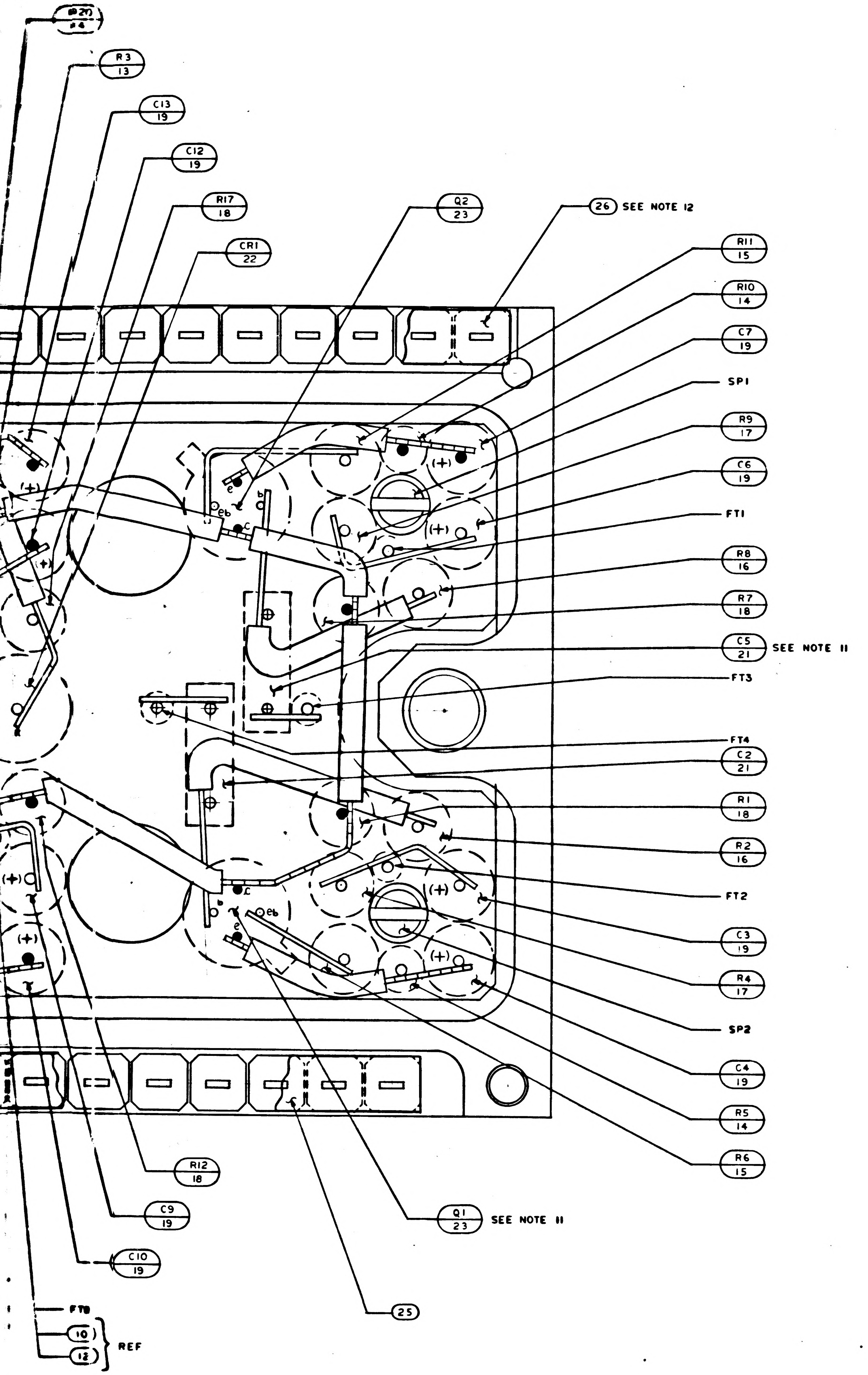
CHART B (R6, FIND NO. 6 – REF)	
PART NUMBER	VALUE OHMS
1010364 – 255	1050
1010364 – 257	1070
1010364 – 259	1100
1010364 – 261	1130
1010364 – 263	1150
1010364 – 265	1180

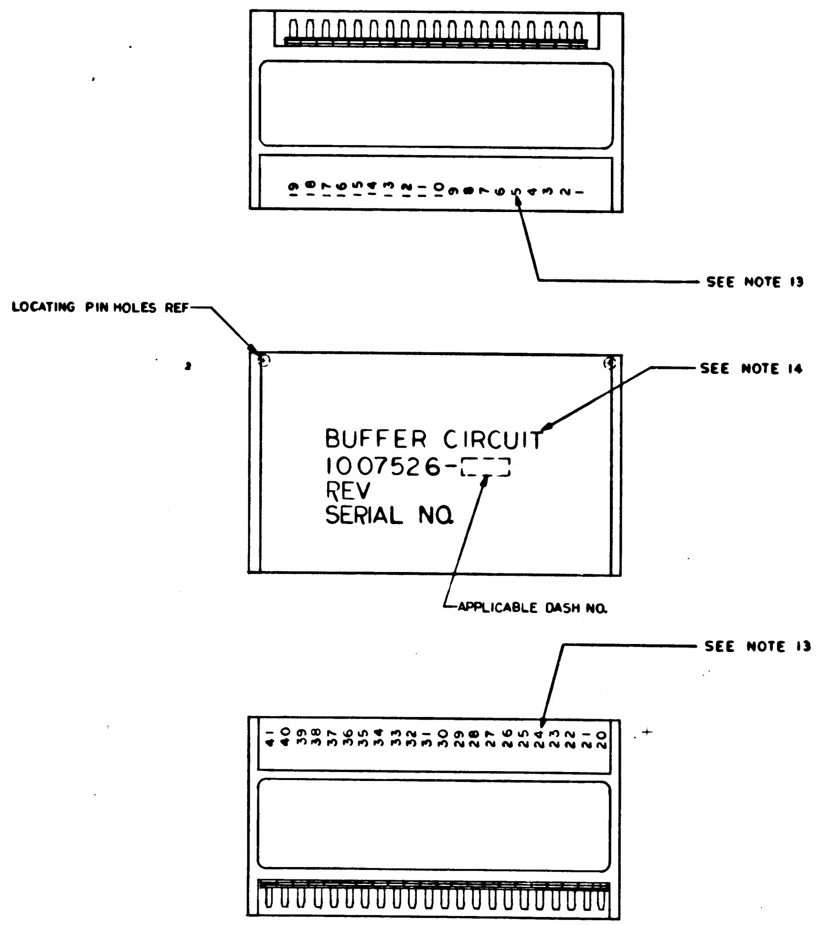


SEE NOTE 7
36
Q3 REF
Q1 REF
SEE NOTE 7
35

PARTIAL SECTION B-B

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16623	24 FEB -65	DAS T.M.


#4
R3 13
C13 19
C12 19
R17 18
CR1 22
Q2 23
26 SEE NOTE 12
R11 15
R10 14
C7 19
SP1
R9 17
C6 19
FT1
R8 16
R7 18
C5 21 SEE NOTE 11
FT3
FT4
C2 21
R1 18
R2 16
FT2
C3 19
R4 17
SP2
C4 19
R5 14
R6 15
R12 18
C9 19
C10 19
Q1 23 SEE NOTE 11
25
FT8
10
12 REF
(+)
e
b
c
eb


LOCATING PIN HOLES REF
SEE NOTE 13
SEE NOTE 14
BUFFER CIRCUIT
1007526-[ ]
REV
SERIAL NO.
APPLICABLE DASH NO.
SEE NOTE 13
19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20

MARKING VIEW
SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1009507	SCHEMATIC	REF
AR	1006776-21	INSULATION SLEEVING	27
3	1008540-11	GASKET, CONNECTOR, MINIATURE	26
1	1008540-8	GASKET CONNECTOR, MINIATURE	25
6	1010759	TRANSFORMER	24
6	1010342	TRANSISTOR	23
1	1010265-13	DIODE	22
6	1010359-29	CAPACITOR	21
1	1006755-84	CAPACITOR	20
12	1006755-69	CAPACITOR	19
6	1010374-29	RESISTOR	18
6	1010374-1	RESISTOR	17
6	1010364-765	RESISTOR	16
6	1010364-719	RESISTOR	15
6	1006750-51	RESISTOR	14
1	1006750-26	RESISTOR	13
AR	1006776-22	INSULATION SLEEVING	12
AR	1006776-20	INSULATION SLEEVING	11
AR	1006757-8	WIRE ELECTRICAL .020 DIA	10
AR	1006757-1	WIRE, ELECTRICAL .010 X.020	9
2	1010485-98	SCREW, FILLISTER HD	8
8	1008161-3	SCREW, CAP SLOTTED HD(SPECIAL)	7
4	1015135-018	SPACER	6
41	1006782-5	CONTACT, WRAPOST MALE MIN	5
41	1006775	INSULATOR, WRAPOST MALE MIN	4
1	1008557	WIRING BOARD, BOTTOM	3
1	1008558	WIRING BOARD, TOP	2
1	1007595	FRAME	1

011 LIST OF MATERIALS

NEXT ASSY	USED ON
1007578	
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ± .005 XX ± .02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN DATE
CHECKED 30 SEP 64
APPROVAL
APPROVAL 10-2-64
NASA APPROVAL 10/14/64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

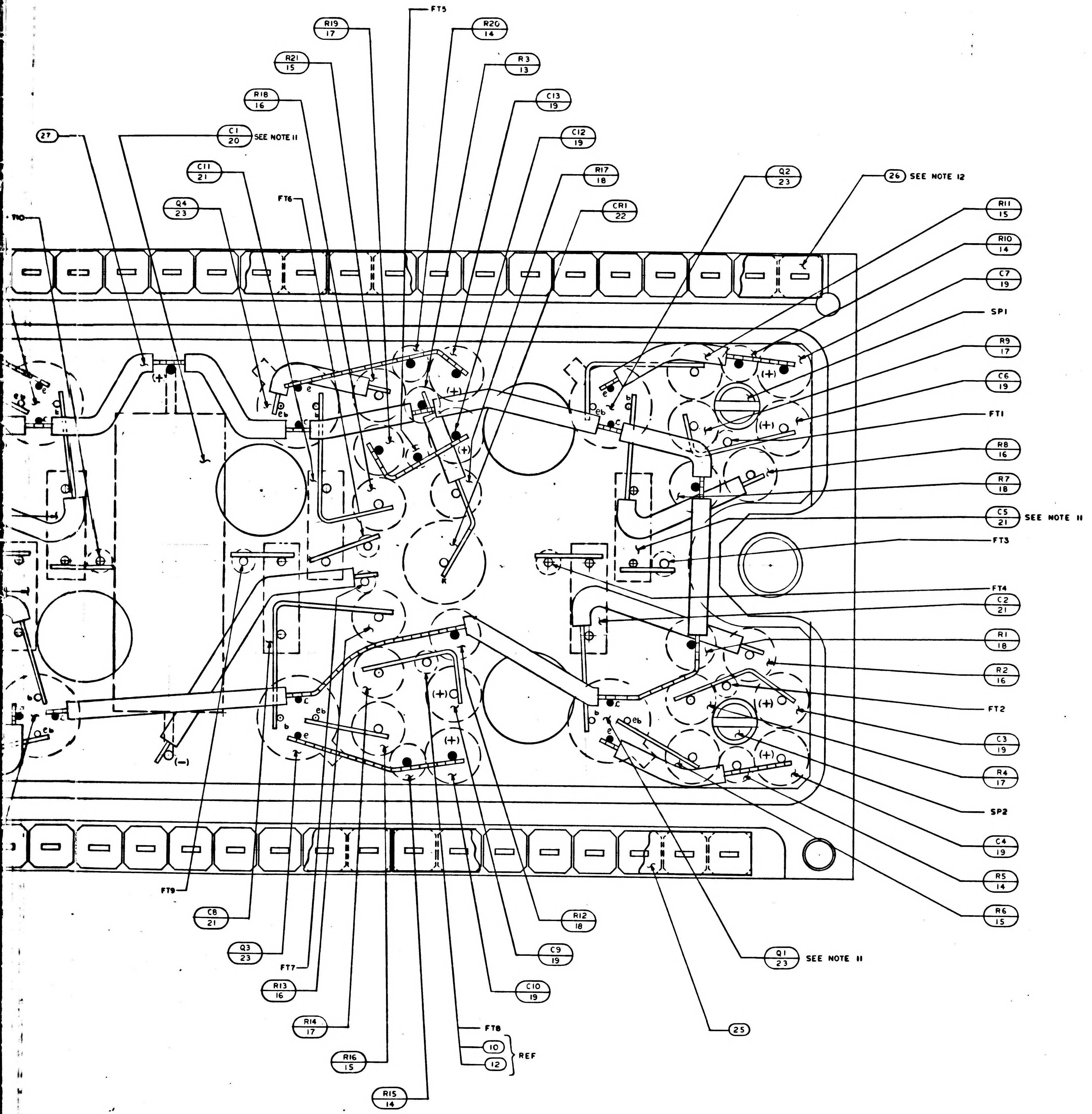
BUFFER CIRCUIT
ASSEMBLY

CODE IDENT NO. SIZE J NASA DRAWING NO. 1007526
SCALE 10/1 WT SHEET 1 OF 1

4H

1007526 A 1

4/1007526


FT5
R19 17
R20 14
R21 15
R3 13
R18 16
C13 19
C1 20 SEE NOTE 11
C12 19
27
C11 21
R17 18
FT6
Q2 23
26 SEE NOTE 12
CR1 22
Q4 23
R10
R11 15
R10 14
C7 19
SP1
R9 17
C6 19
FT1
R8 16
R7 18
C5 21 SEE NOTE 11
FT3
FT4
C2 21
R1 18
R2 16
FT2
C3 19
R4 17
SP2
C4 19
R5 14
R6 15
Q1 23 SEE NOTE 11
25
R12 18
C9 19
C10 19
FT8
10
12
REF
R15 14
R16 15
R14 17
R13 16
FT7
Q3 23
C8 21
FT9
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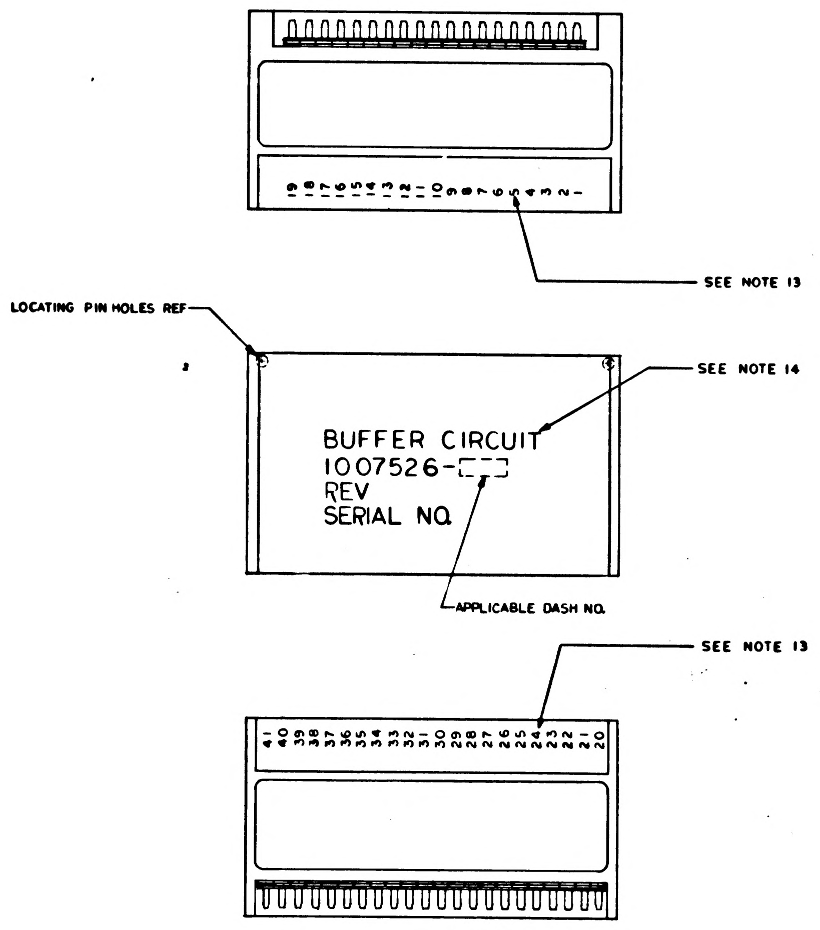

BUFFER CIRCUIT
1007526-
REV
SERIAL NO.
LOCATING PIN HOLES REF
SEE NOTE 13
SEE NOTE 14
APPLICABLE DASH NO.
SEE NOTE 13
19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20

MARKING VIEW
SCALE 2/1

QTY REQD
AR
3
1
6
6
1
6
1
12
6
6
6
6
6
1
AR
AP
AR
AR
2
8
4
41
41
1
1
1

011

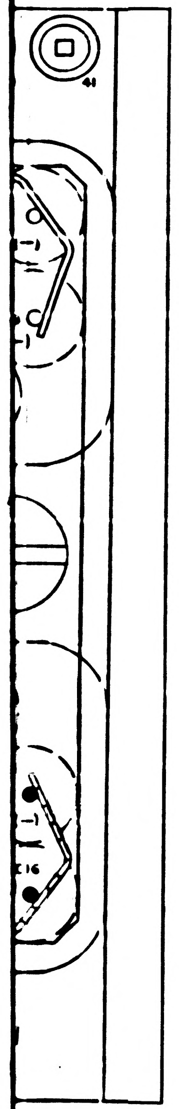
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ± .00 ANGLES ±
XX ± .02
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

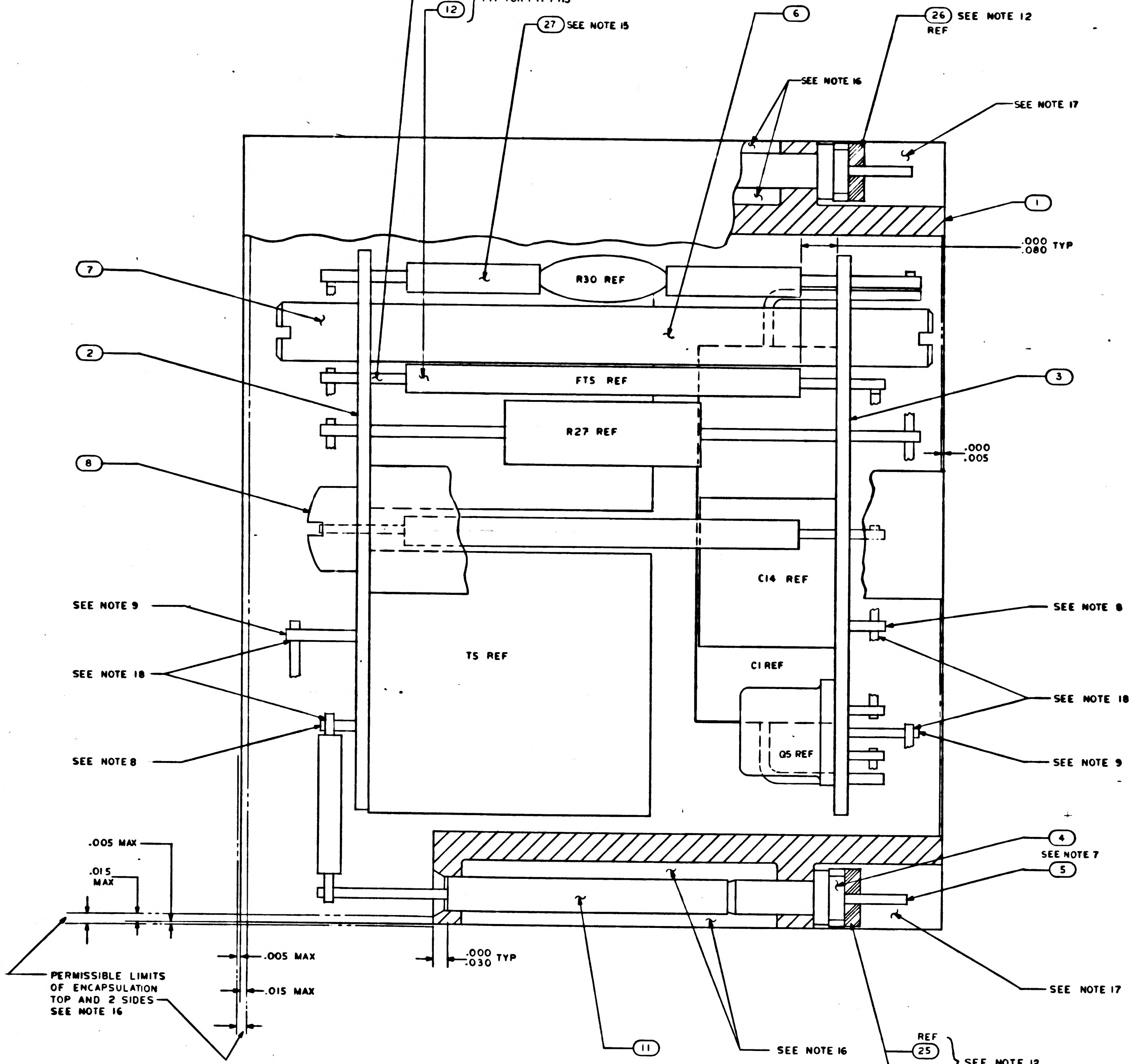
NEXT ASSY	USED ON
1007578	
1007579	
APPLICATION	

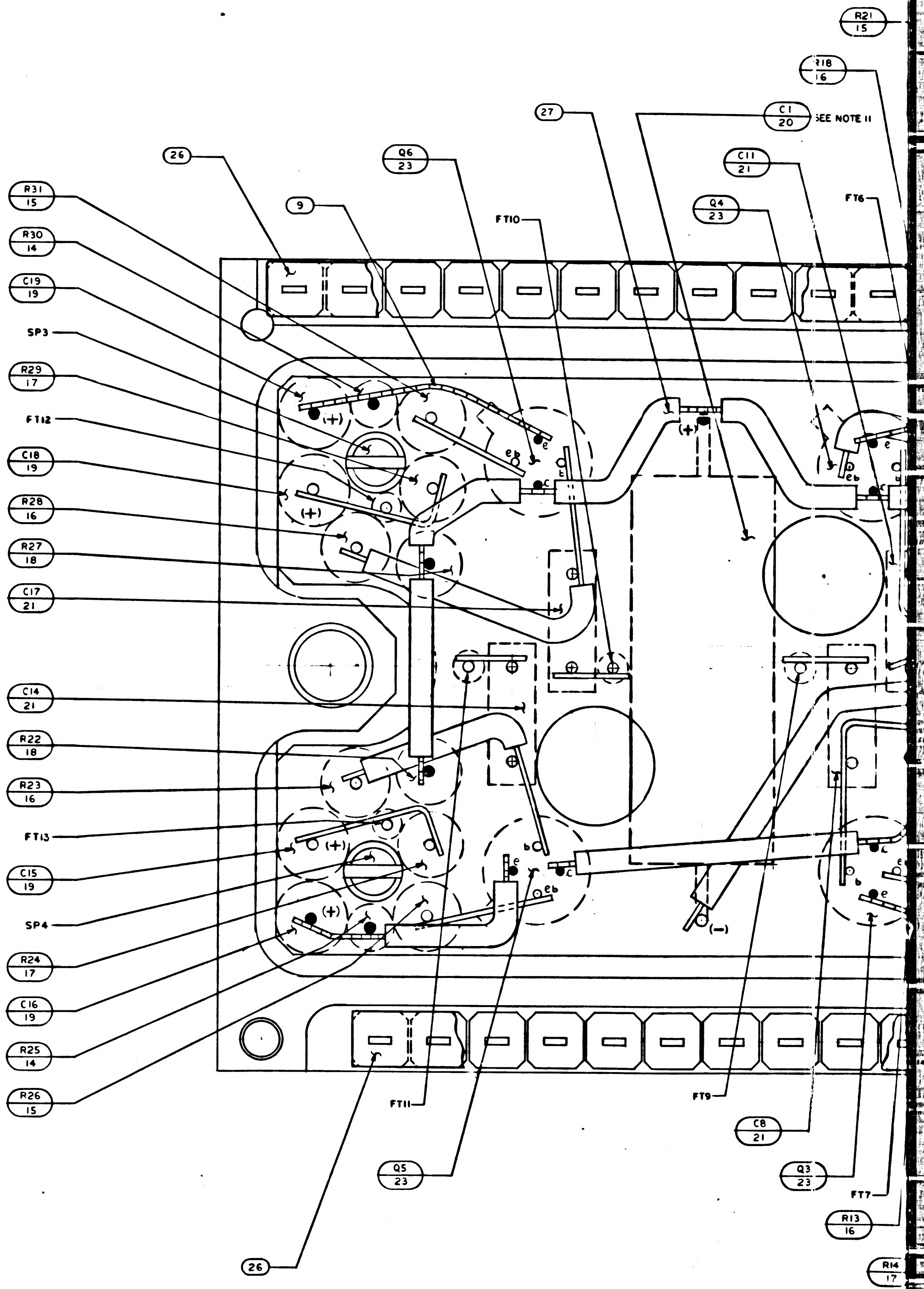
DRAWN
CHECKED
APPROVAL
APPROVAL
NASA APP
MIT APPR

1007526 REV LTR A SH 1

37-1007526




10
12
TYP FOR FT1-FT13
27 SEE NOTE 15
6
26 SEE NOTE 12 REF
SEE NOTE 16
SEE NOTE 17
1
.000 .080 TYP
7
R30 REF
2
FT5 REF
3
R27 REF
8
.000 .005
C14 REF
SEE NOTE 9
SEE NOTE 8
SEE NOTE 18
TS REF
C1 REF
SEE NOTE 18
SEE NOTE 8
Q5 REF
SEE NOTE 9
.005 MAX
.015 MAX
4
SEE NOTE 7
5
PERMISSIBLE LIMITS OF ENCAPSULATION TOP AND 2 SIDES SEE NOTE 16
.005 MAX
.015 MAX
.000 .030 TYP
SEE NOTE 17
11
SEE NOTE 16
REF 25
26
SEE NOTE 12


R21 15
R18 16
27
C1 20 SEE NOTE 11
26
Q6 23
C11 21
FT6
9
FT10
Q4 23
R31 15
R30 14
C19 19
SP3
R29 17
FT12
C18 19
R28 16
R27 18
C17 21
C14 21
R22 18
R23 16
FT13
C15 19
SP4
R24 17
C16 19
R25 14
R26 15
(+)
(+)
(+)
(+)
(+)
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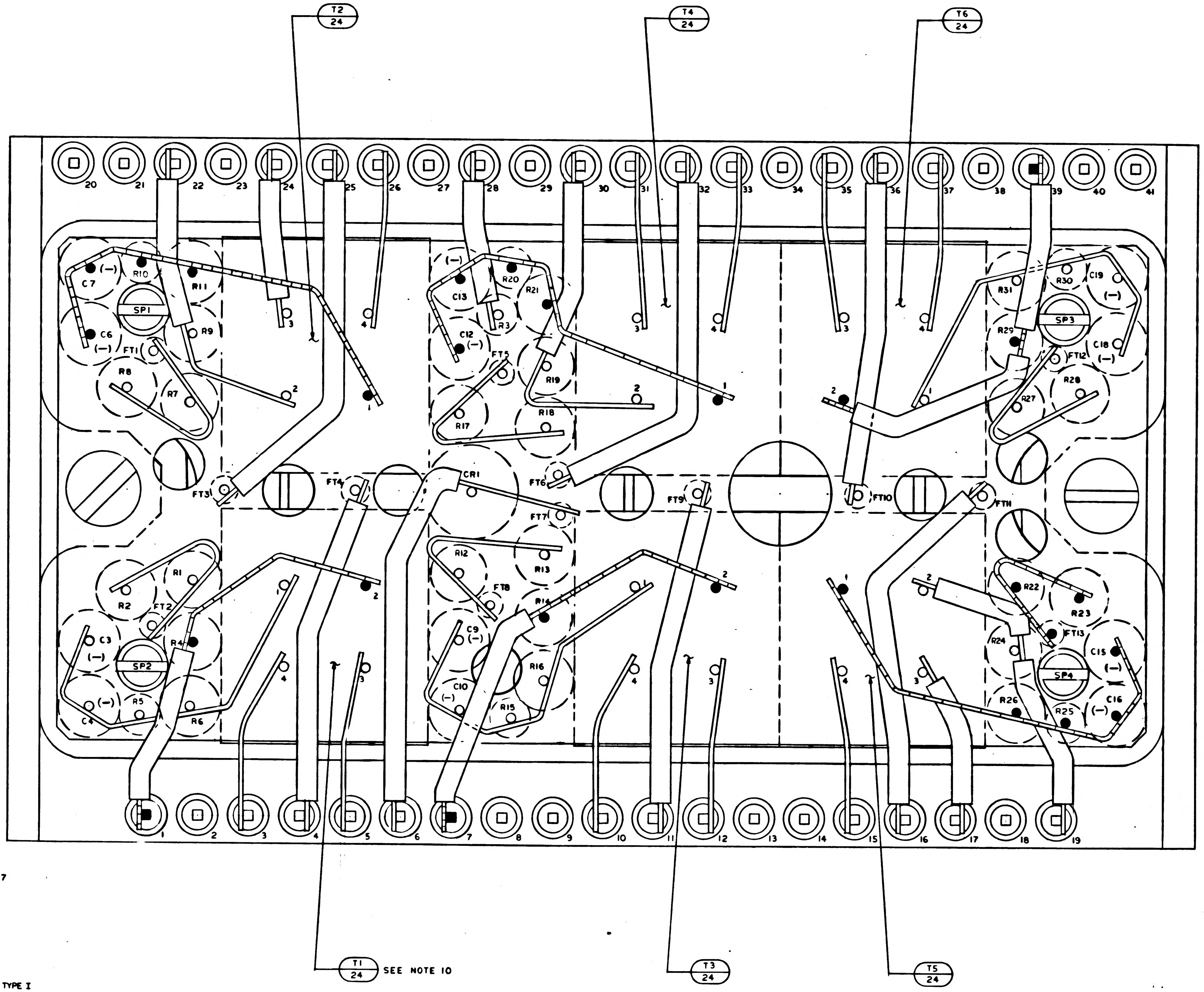
e b c
FT11
FT9
C8 21
Q5 23
Q3 23
FT7
R13 16
R14 17
26

1007526 REV LTR A SH 1

2/1007526


T2
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T4
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T6
24
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23
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27
28
29
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31
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33
34
35
36
37
38
39
40
41
C7
R10
R11
SP1
R9
C6
(—)
FT1
R8
R7
C13
R20
R21
R3
C12
FT5
R19
R18
R17
R31
R30
C19
SP3
R29
C18
FT12
R28
R27
FT3
FT4
CR1
FT6
FT7
FT9
FT10
FT11
R1
R2
FT2
C3
SP2
R4
R5
R6
C4
R12
R13
FT8
R14
C9
R16
C10
R15
R22
R23
R24
FT13
C15
SP4
C16
R26
R25
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
T1
24
SEE NOTE 10
T3
24
T5
24

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. FT DENOTES FEED THRU
4. K DENOTES CATHODE SIDE OF DIODE
5. SP DENOTES SPACER
6. WELD PER ND 1002005
7. ASSEMBLE FIND NO 4 AND FIND 5 PER ND 1002136
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
10. BOND T1 THRU T6 TO FIND NO 2 PER ND 1002004 TYPE I
11. BOND Q1 THRU Q6 AND C1,C2,C5,C8,C11,C14 AND C17 TO FIND NO 3 PER ND 1002004 TYPE I
12. BOND FIND NO 25 AND FIND 26 TO FIND NO 4 PER ND 1002237
13. MARK .100/.060 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
14. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE
PER ND 1002023. CENTRALIZE AS SHOWN
15. TYPICAL SLEEVING FOR FIND NO.14
16. ENCAPSULATE MODULE PER ND 1002002 BLACK POLYURETHANE FOAM
REMOVE ALL FLASHING
17. INDICATED AREAS TO BE FREE OF ENCAPSULATION
18. WORKMANSHIP REQUIREMENTS PER ND 1002069
19. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007526.

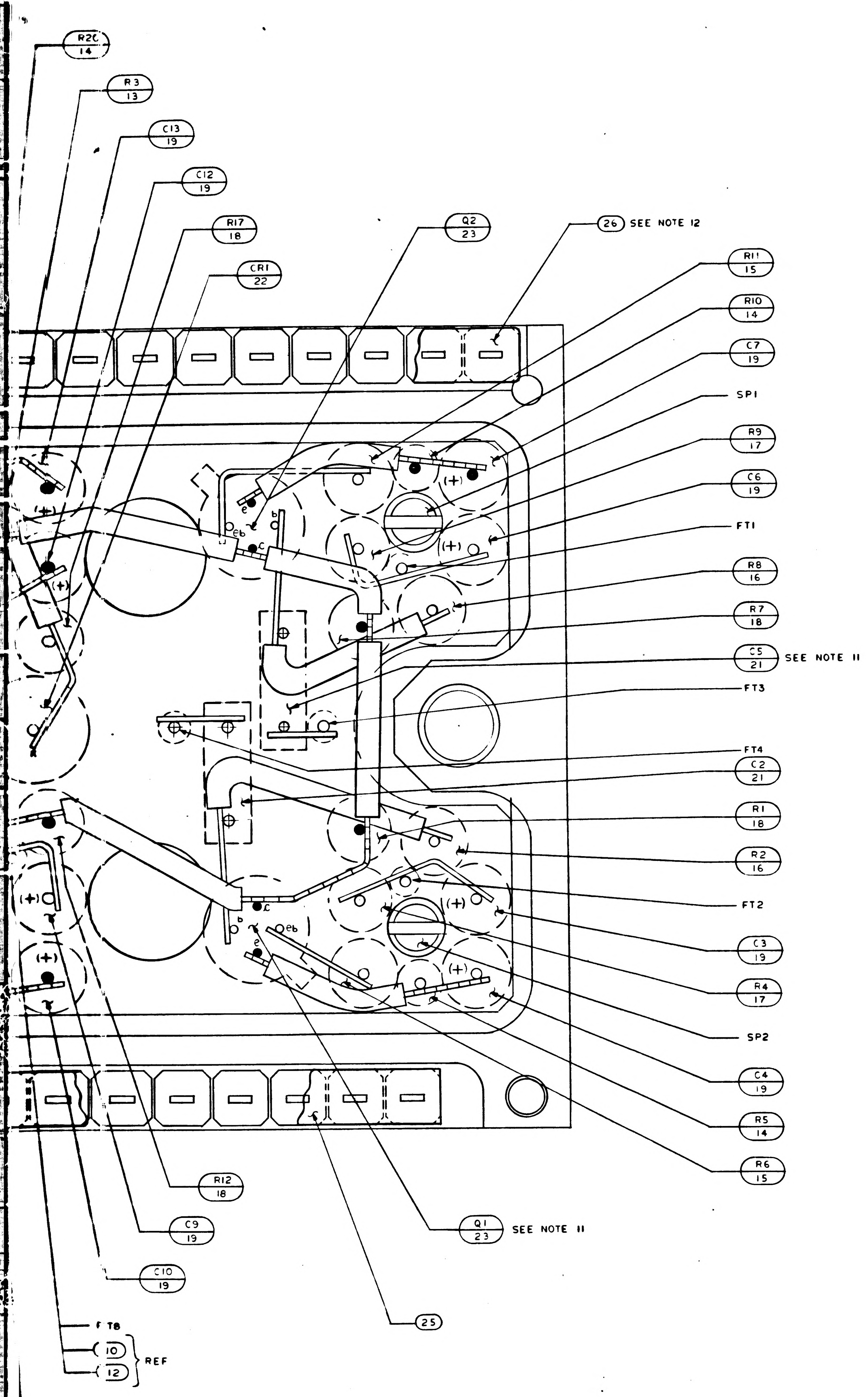
1007526	REV LTR	SH
	A	1

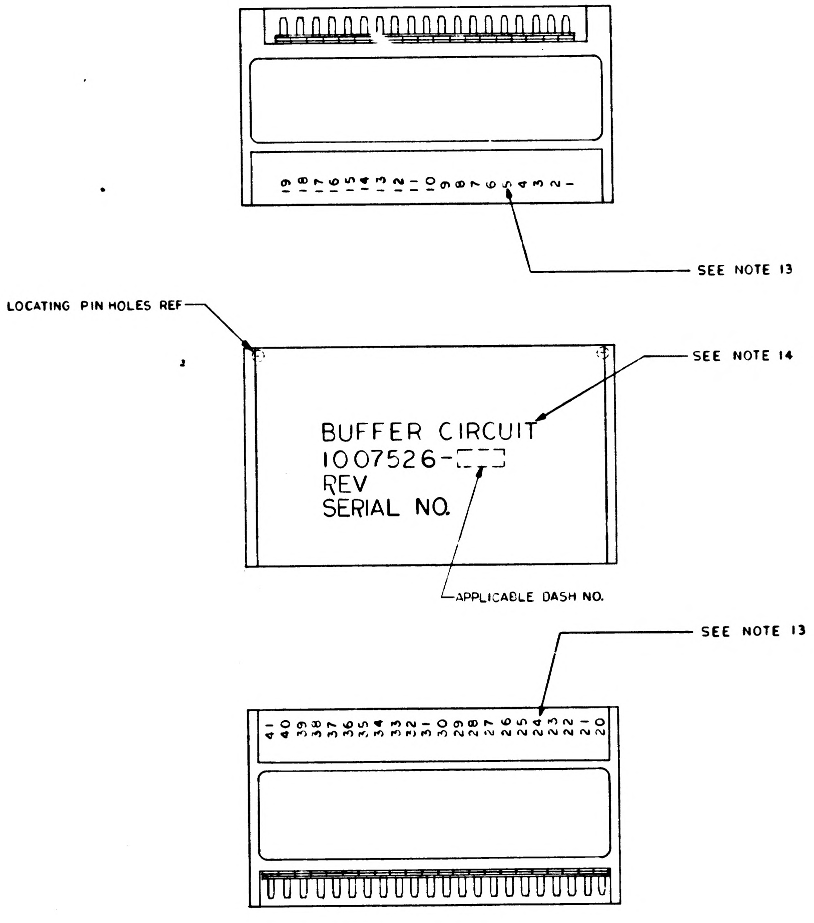
1/1007526

B	1007526

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16623		
B	REVISED PER TDRR 16827		


R20 14
R3 13
C13 19
C12 19
R17 18
CR1 22
Q2 23
26 SEE NOTE 12
R11 15
R10 14
C7 19
SP1
R9 17
C6 19
FT1
R8 16
R7 18
C5 21 SEE NOTE 11
FT3
FT4
C2 21
R1 18
R2 16
FT2
C3 19
R4 17
SP2
C4 19
R5 14
R6 15
R12 18
C9 19
C10 19
Q1 23 SEE NOTE 11
25
FT8
10
12
REF
(+)
e
b
c
eb


19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
SEE NOTE 13
LOCATING PIN HOLES REF
SEE NOTE 14
BUFFER CIRCUIT
1007526-
REV
SERIAL NO.
APPLICABLE DASH NO.
SEE NOTE 13
41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20

MARKING VIEW
SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009507	SCHEMATIC	REF
AR	1006776-21	INSULATION SLEEVING	27
3	1008540-11	GASKET, CONNECTOR, MINIATURE	26
1	1008540-8	GASKET CONNECTOR, MINIATURE	25
6	1010759	TRANSFORMER	24
6	1010342	TRANSISTOR	23
1	1010829-13	DIODE	22
6	1010359-29	CAPACITOR	21
1	1006755-84	CAPACITOR	20
12	1006755-69	CAPACITOR	19
6	1010374-29	RESISTOR	18
6	1010374-1	RESISTOR	17
6	1010364-765	RESISTOR	16
6	1010364-719	RESISTOR	15
6	1006750-51	RESISTOR	14
1	1006750-26	RESISTOR	13
AR	1006776-22	INSULATION SLEEVING	12
AR	1006776-20	INSULATION SLEEVING	11
AR	1006757-8	WIRE ELECTRICAL .020 DIA	10
AR	1006757-1	WIRE, ELECTRICAL .010 X.020	9
2	1010485-98	SCREW, FILLISTER HD	8
8	1008161-3	SCREW, CAP SLOTTED HD (SPECIAL)	7
4	1015135-018	SPACER	6
41	1006782-5	CONTACT, WRAPOST MALE MIN	5
41	1006775	INSULATOR, WRAPOST MALE MIN	4
1	1008557	WIRING BOARD, BOTTOM	3
1	1008558	WIRING BOARD, TOP	2
1	1007595	FRAME	1

011 LIST OF MATERIALS

NEXT ASSY	USED ON
1007578	
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ± .005 XX ± .02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN DATE
CHECKED 30 SEP 64
APPROVAL M. Bingham 2 OCT 64
APPROVAL 10-8-64
NASA APPROVAL 10/14/64
MIT APPROVAL 10/14/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

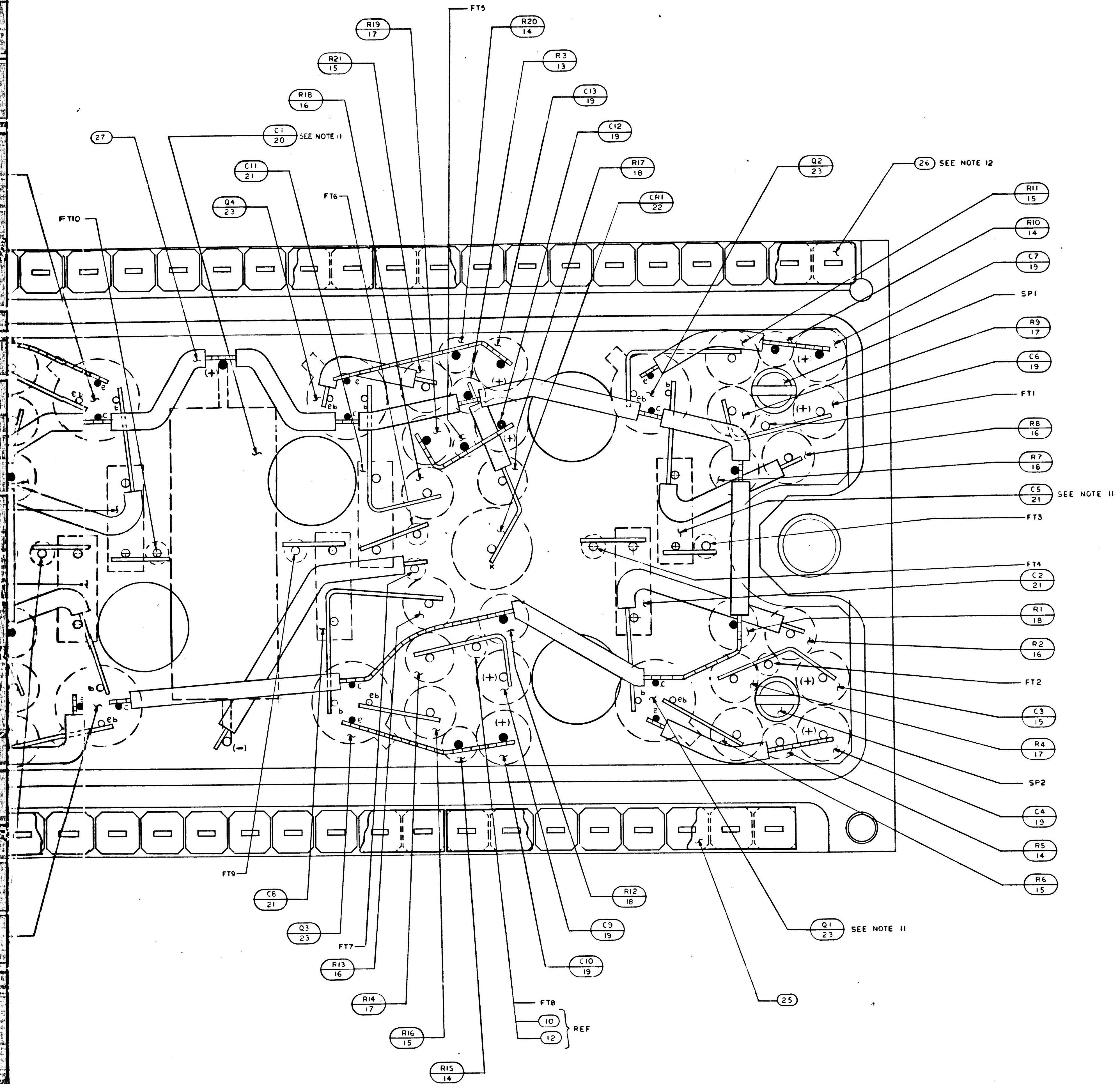
BUFFER CIRCUIT
ASSEMBLY

CODE IDENT NO.
SIZE J
NASA DRAWING NO. 1007526
SCALE 10/1
WT
SHEET 1 OF 1

B 1007526

44

6 5 4 3 2



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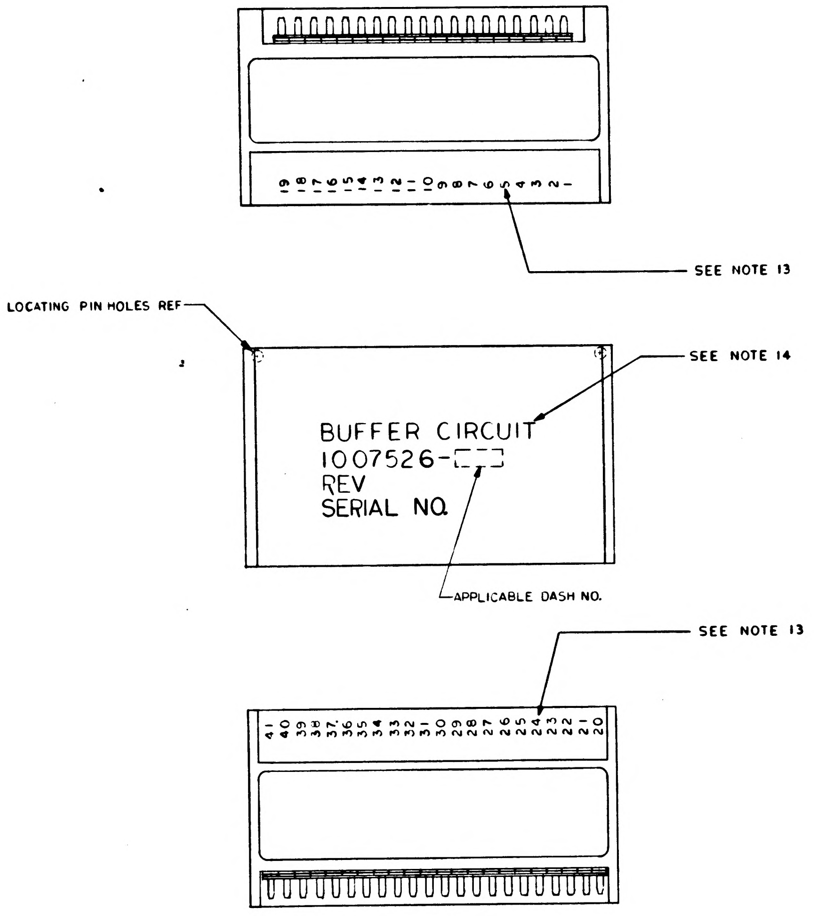
FT5
R20 14
R21 15
R3 13
C13 19
R18 16
C12 19
C1 20 SEE NOTE 11
27
R17 18
C11 21
CR1 22
FT6
Q4 23
FT10
Q2 23
26 SEE NOTE 12
R11 15
R10 14
C7 19
SP1
R9 17
C6 19
FT1
R8 16
R7 18
C5 21 SEE NOTE 11
FT3
FT4
C2 21
R1 18
R2 16
FT2
C3 19
R4 17
SP2
C4 19
R5 14
R6 15
R12 18
Q1 23 SEE NOTE 11
C9 19
C10 19
25
FT8
10
12
REF
R15 14
R16 15
R14 17
R13 16
FT7
Q3 23
C8 21
FT9
(+)
(-)
e
b
c



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SEE NOTE 13
LOCATING PIN HOLES REF
SEE NOTE 14
BUFFER CIRCUIT
1007526-
REV
SERIAL NO.
APPLICABLE DASH NO.
SEE NOTE 13
41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20

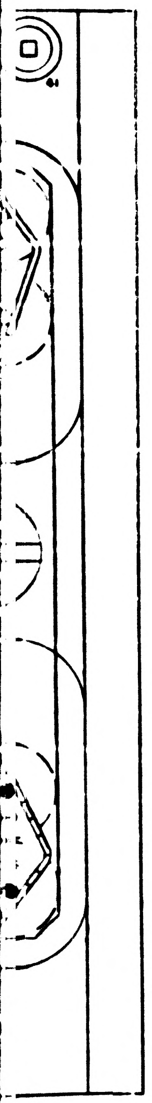
MARKING VIEW
SCALE 2/1

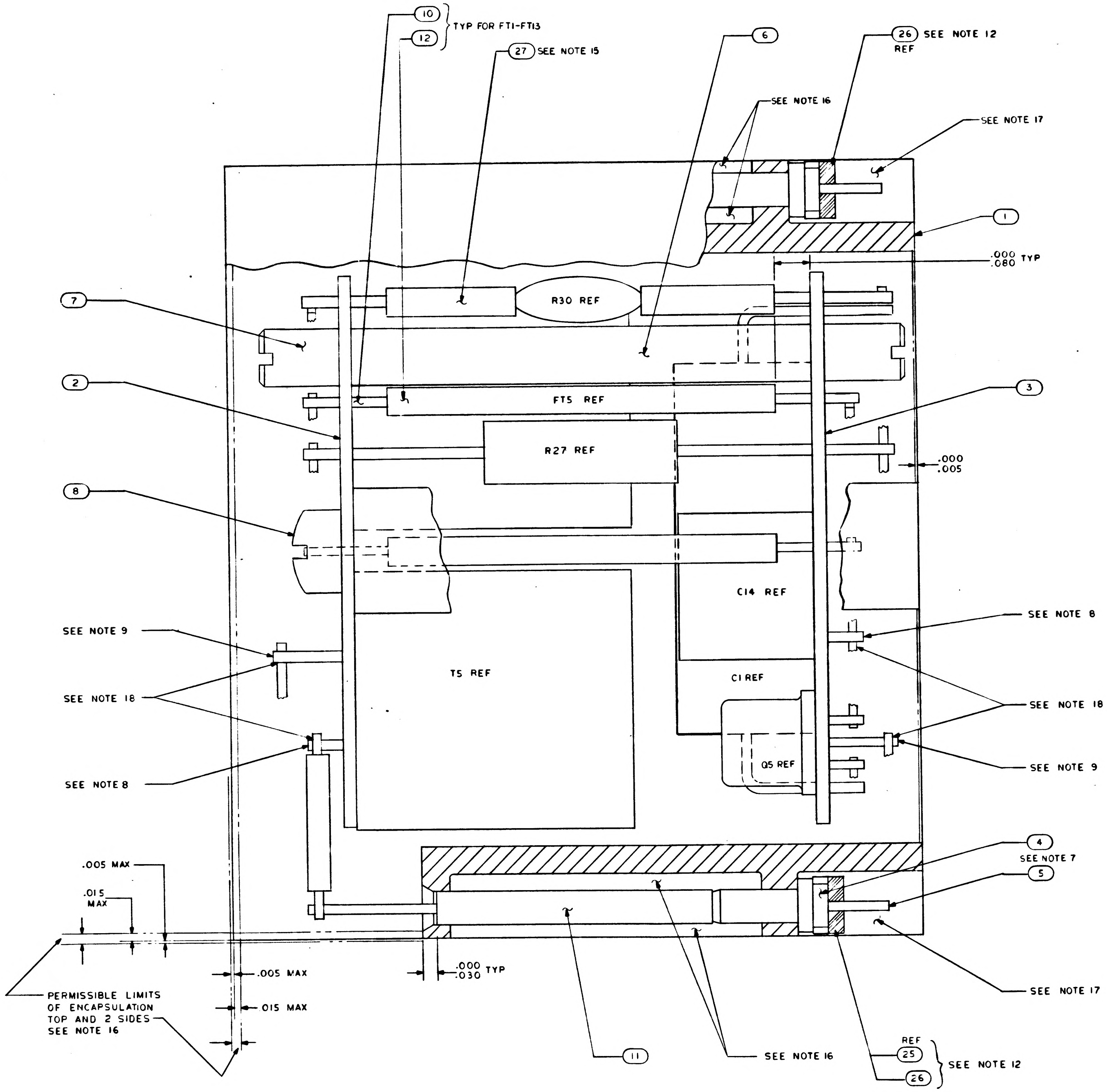
1007578	
1007579	
NEXT ASSY	USED ON
APPLICATION	

1007526	REV LTR B	SH 1

6 5 4 3 2

3/1007526

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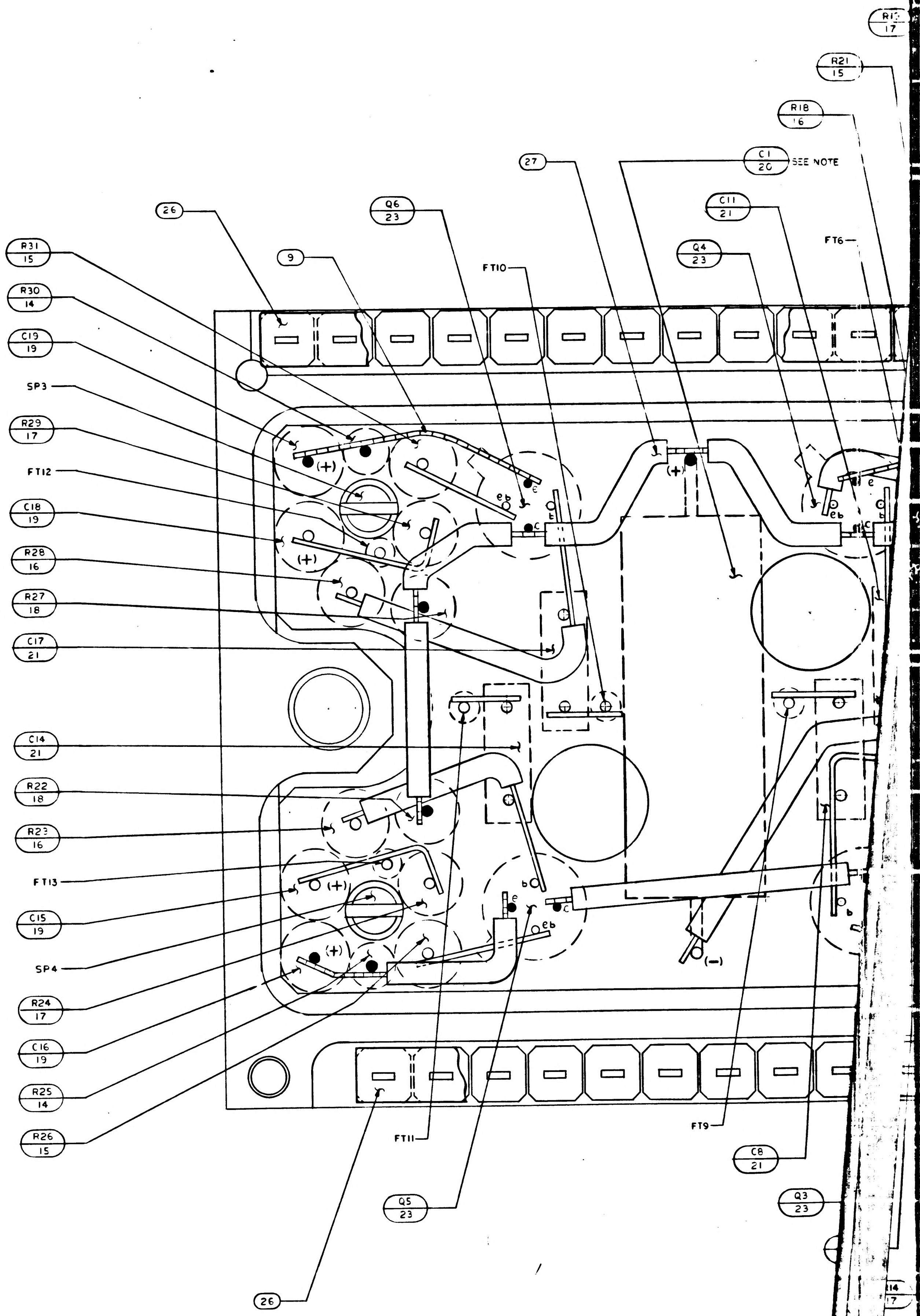
TYP FOR FT1-FT13
27 SEE NOTE 15
6
26 SEE NOTE 12
REF
SEE NOTE 16
SEE NOTE 17
1
.000
.080 TYP
7
R30 REF
2
FT5 REF
3
R27 REF
.000
.005
8
C14 REF
SEE NOTE 8
SEE NOTE 9
SEE NOTE 18
T5 REF
C1 REF
Q5 REF
SEE NOTE 18
SEE NOTE 9
SEE NOTE 8
.005 MAX
.015 MAX
4
SEE NOTE 7
5
PERMISSIBLE LIMITS OF ENCAPSULATION TOP AND 2 SIDES SEE NOTE 16
.005 MAX
.015 MAX
.000
.030 TYP
11
SEE NOTE 16
REF
25
26
SEE NOTE 12
SEE NOTE 17


R1?
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R21
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R18
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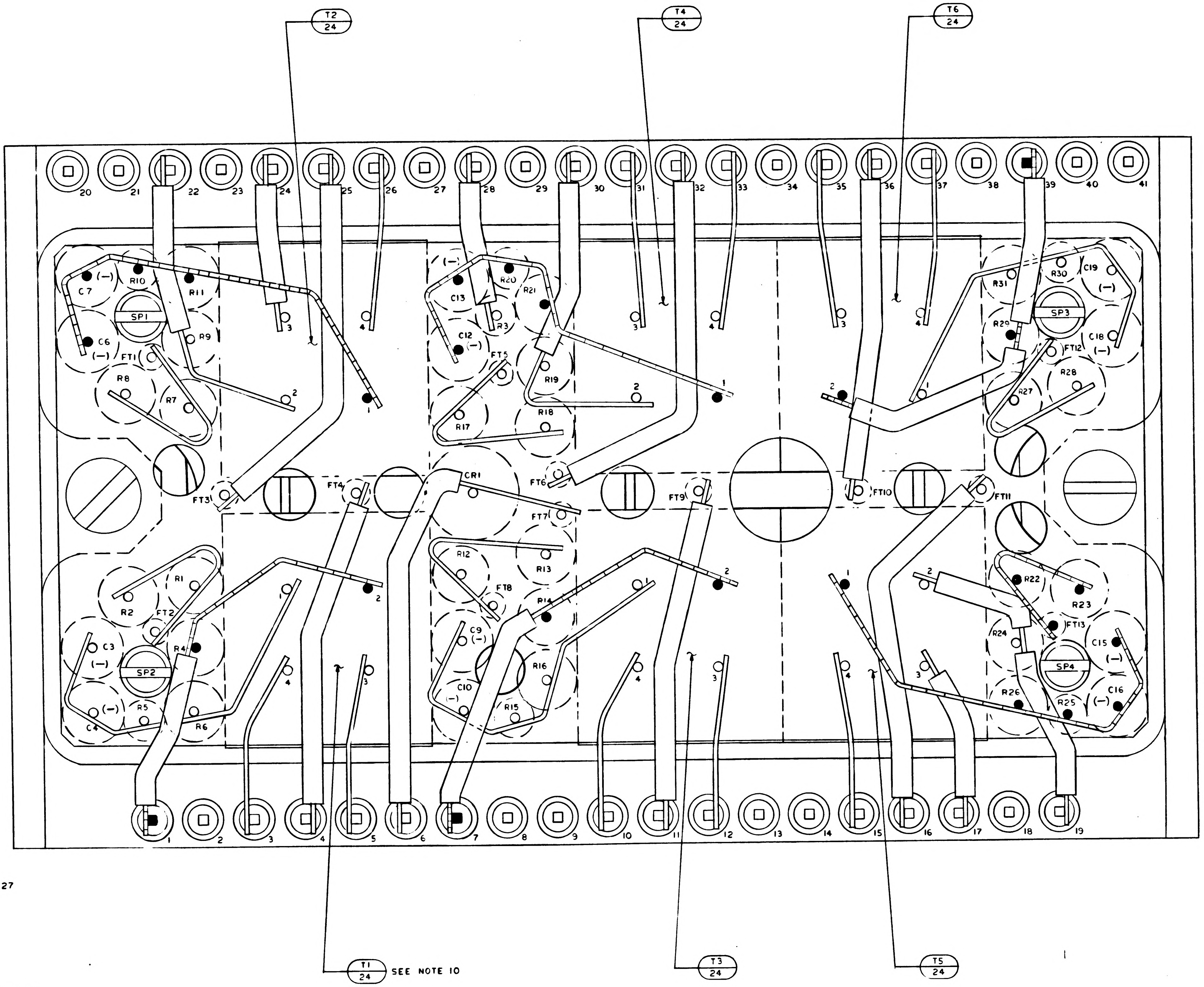
C1
20
SEE NOTE
27
C11
21
Q4
23
FT6
26
Q6
23
9
FT10
R31
15
R30
14
C19
19
SP3
R29
17
FT12
C18
19
R28
16
R27
18
C17
21
C14
21
R22
18
R23
16
FT13
C15
19
SP4
R24
17
C16
19
R25
14
R26
15
(+)
(-)
e
b
c
FT11
Q5
23
26
FT9
C8
21
Q3
23
14
17

1007526 REV LTR B SH 1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T4
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T6
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37
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39
40
41
C7
(−)
R10
R11
SP1
C6
(−)
R9
FT1
R8
R7
FT3
FT4
(−)
C13
R20
R21
R3
C12
(−)
FT5
R19
R18
R17
CR1
FT6
FT7
FT9
FT10
FT11
R31
R30
C19
(−)
SP3
R29
C18
(−)
FT12
R27
R28
R1
R2
FT2
C3
(−)
SP2
R4
C4
(−)
R5
R6
R12
R13
FT8
R14
C9
(−)
C10
(−)
R16
R15
R22
R23
R24
FT13
C15
(−)
SP4
R26
R25
C16
(−)
1
2
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14
15
16
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18
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T1
24
SEE NOTE 10
T3
24
T5
24

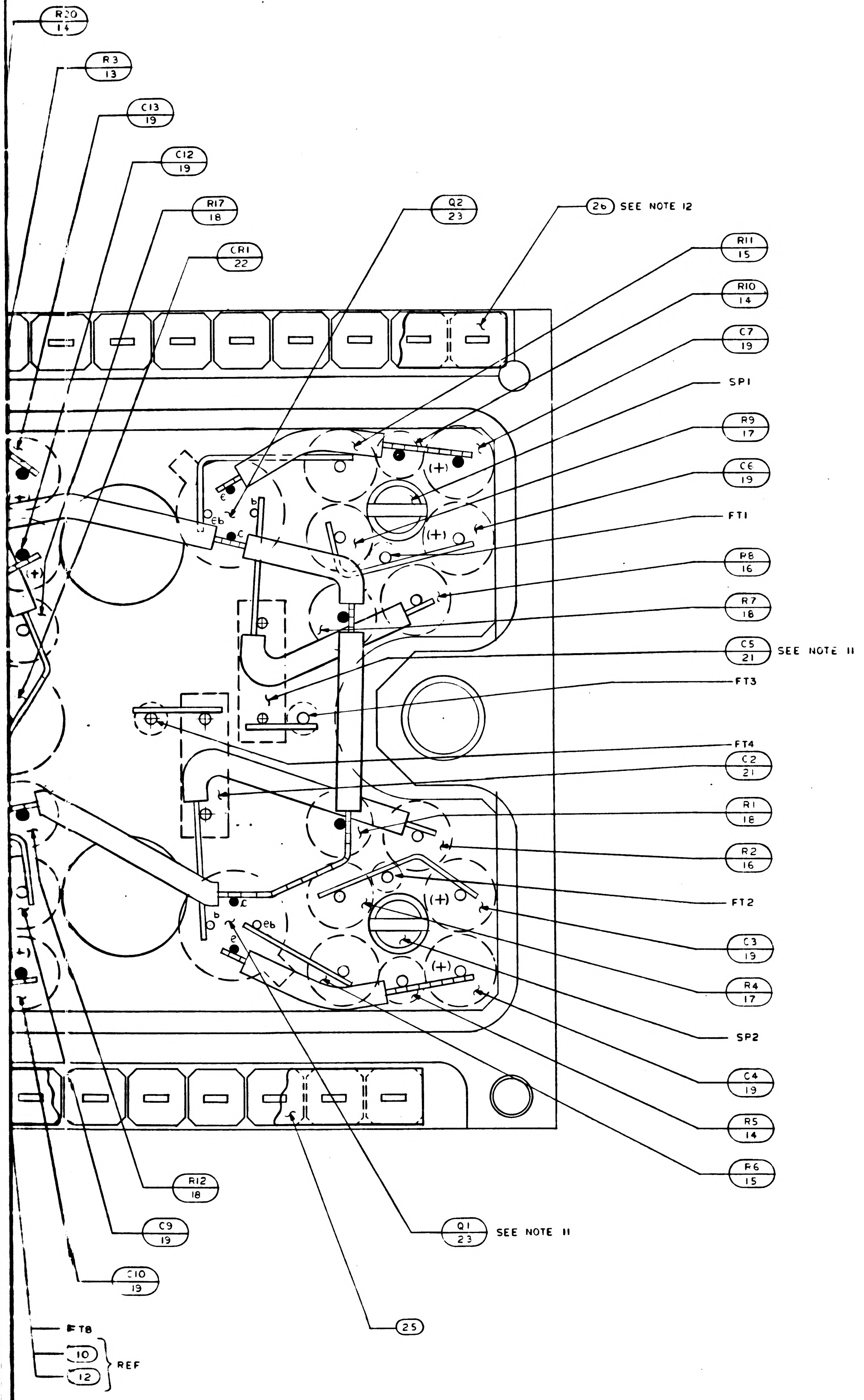
NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. FT DENOTES FEED THRU
4. K DENOTES CATHODE SIDE OF DIODE
5. SP DENOTES SPACER
6. WELD PER ND 1002005
7. ASSEMBLE FIND NO 4 AND FIND 5 PER ND 1002136
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
10. BOND T1 THRU T6 TO FIND NO 2 PER ND 1002004 TYPE I
11. BOND Q1 THRU Q6 AND C1, C2, C5, C8, C11, C14 AND C17 TO FIND NO 3 PER ND 1002004 TYPE I
12. BOND FIND NO 25 AND FIND 26 TO FIND NO 4 PER ND 1002237
13. MARK .100/.060 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
14. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
15. TYPICAL SLEEVING FOR FIND NO.14
16. ENCAPSULATE MODULE PER ND 1002002 BLACK POLYURETHANE FOAM REMOVE ALL FLASHING
17. INDICATED AREAS TO BE FREE OF ENCAPSULATION
18. WORKMANSHIP REQUIREMENTS PER ND 1002069
19. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007526.

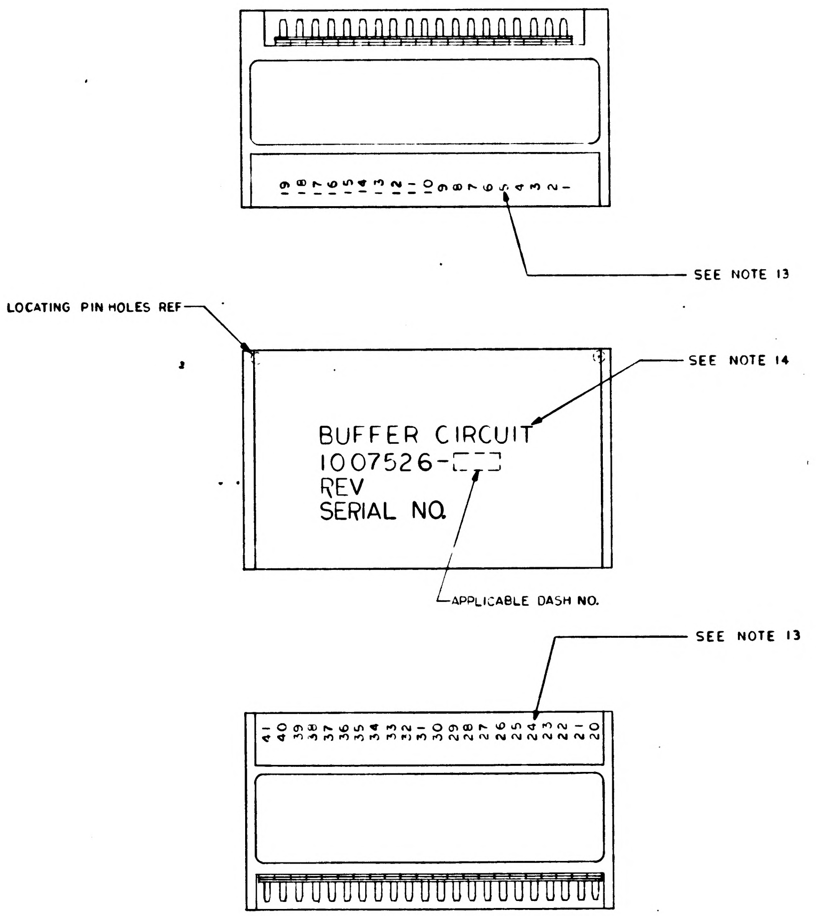
1007526	REV LTR	SH
	B	1

C	1007526

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16623	4 FEB 65	DAS C.W.
B	REVISED PER TDRR 16827	4 MAR 65	Em
C	REVISED PER TDRR 19412	2 JUN 65	J.K. MEM



R20
14
R3
13
C13
19
C12
19
R17
18
CR1
22
Q2
23
26 SEE NOTE 12
R11
15
R10
14
C7
19
SP1
R9
17
C6
19
FT1
R8
16
R7
18
C5
21
SEE NOTE 11
FT3
FT4
C2
21
R1
18
R2
16
FT2
C3
19
R4
17
SP2
C4
19
R5
14
R6
15
R12
18
C9
19
C10
19
Q1
23
SEE NOTE 11
25
FT8
10
12
REF
(+)
e
b
c



19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
SEE NOTE 13
LOCATING PIN HOLES REF
SEE NOTE 14
BUFFER CIRCUIT
1007526-
REV
SERIAL NO.
APPLICABLE DASH NO.
SEE NOTE 13
41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20

MARKING VIEW
SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009507	SCHEMATIC	REF
AR	1006776-21	INSULATION SLEEVING	27
3	1008540-11	GASKET, CONNECTOR, MINIATURE	26
1	1008540-8	GASKET CONNECTOR, MINIATURE	25
6	1010759	TRANSFORMER	24
6	1010342	TRANSISTOR	23
1	1010829-13	DIODE	22
6	1010359-29	CAPACITOR	21
1	1006755-84	CAPACITOR	20
12	1006755-69	CAPACITOR	19
6	1010374-29	RESISTOR	18
6	1010374-1	RESISTOR	17
6	1010364-765	RESISTOR	16
6	1010364-719	RESISTOR	15
6	1006750-51	RESISTOR	14
1	1006750-26	RESISTOR	13
AR	1006776-22	INSULATION SLEEVING	12
AR	1006776-20	INSULATION SLEEVING	11
AR	1006757-8	WIRE ELECTRICAL .020 DIA	10
AR	1006757-1	WIRE, ELECTRICAL .010 X.020	9
2	1010485-38	SCREW, FILLISTER HD	8
8	1008161-3	SCREW, CAP SLOTTED HD (SPECIAL)	7
4	1015135-018	SPACER	6
41	1006782-5	CONTACT, WRAPOST MALE MIN	5
41	1006775	INSULATOR, WRAPOST MALE MIN	4
1	1008557	WIRING BOARD, BOTTOM	3
1	1008558	WIRING BOARD, TOP	2
1	1007595	FRAME	1

011 LIST OF MATERIALS

1007578	
1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ± .005 XX ± .02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN M. Cravig DATE
CHECKED 3 SEP 64
APPROVAL Blighe 7 OCT 64
APPROVAL 10-8-64
NASA APPROVAL 10-...-64
MIT APPROVAL D. Hoag

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

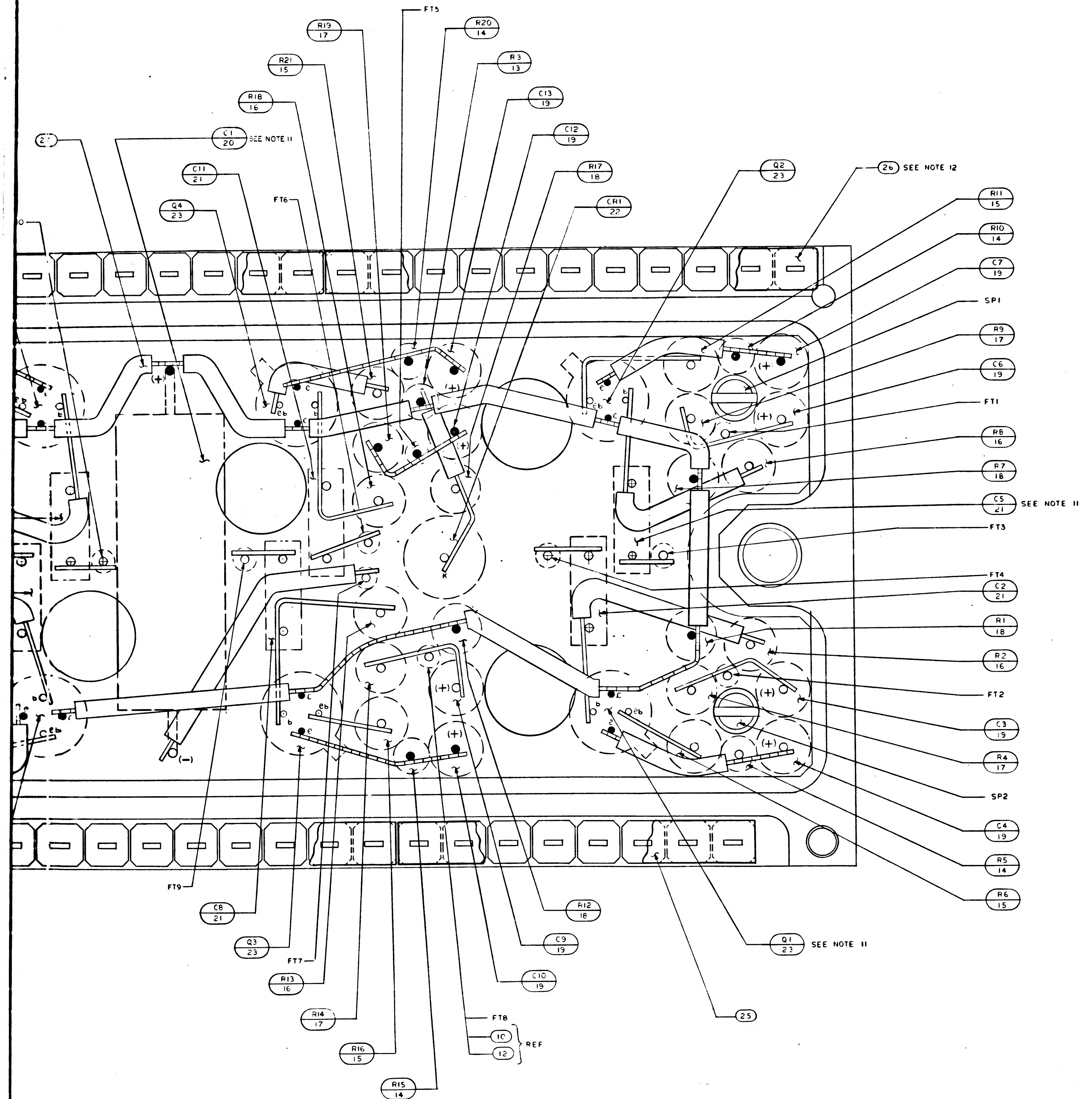
BUFFER CIRCUIT
ASSEMBLY

CODE IDENT NO 80230
SIZE J
NASA DRAWING NO. 1007526
SCALE 10/1
WT
SHEET 1 OF 1

4H

1007526 REV LTR C SH 1

4/1007526


R19 17
R20 14
FT5
R21 15
R3 13
R18 16
C13 19
C1 20 SEE NOTE 11
C12 19
C11 21
R17 18
FT6
Q4 23
CR1 22
Q2 23
26 SEE NOTE 12
R11 15
R10 14
C7 19
SP1
R9 17
C6 19
FT1
R8 16
R7 18
C5 21 SEE NOTE 11
FT3
FT4
C2 21
R1 18
R2 16
FT2
C3 19
R4 17
SP2
C4 19
R5 14
R6 15
FT9
C8 21
Q3 23
FT7
R13 16
R14 17
R16 15
R15 14
FT8
10
12
REF
C10 19
C9 19
R12 18
Q1 23 SEE NOTE 11
25
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(−)
c
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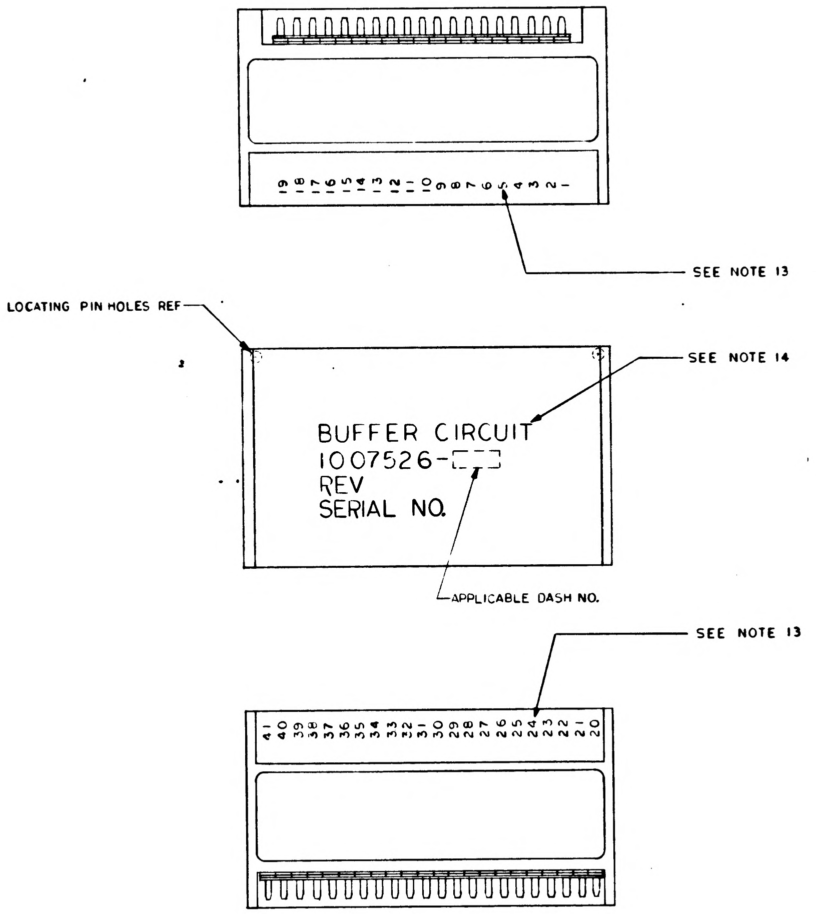
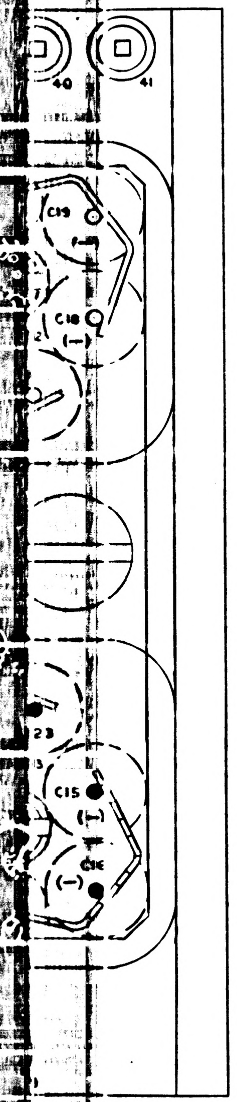

SEE NOTE 13
LOCATING PIN HOLES REF
SEE NOTE 14
BUFFER CIRCUIT
1007526-
REV
SERIAL NO.
APPLICABLE DASH NO.
SEE NOTE 13
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41

MARKING VIEW
SCALE 2/1

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ANGLES XX ±.005 ± X ±.02 DO NOT SCALE THIS DRAWING
1007578		MATERIAL
1007579		HEAT TREATMENT
NEXT ASSY	USED ON	FINAL FINISH
APPLICATION		

	REV LTR	SH
1007526	C	1

371007526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C18
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23
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C16
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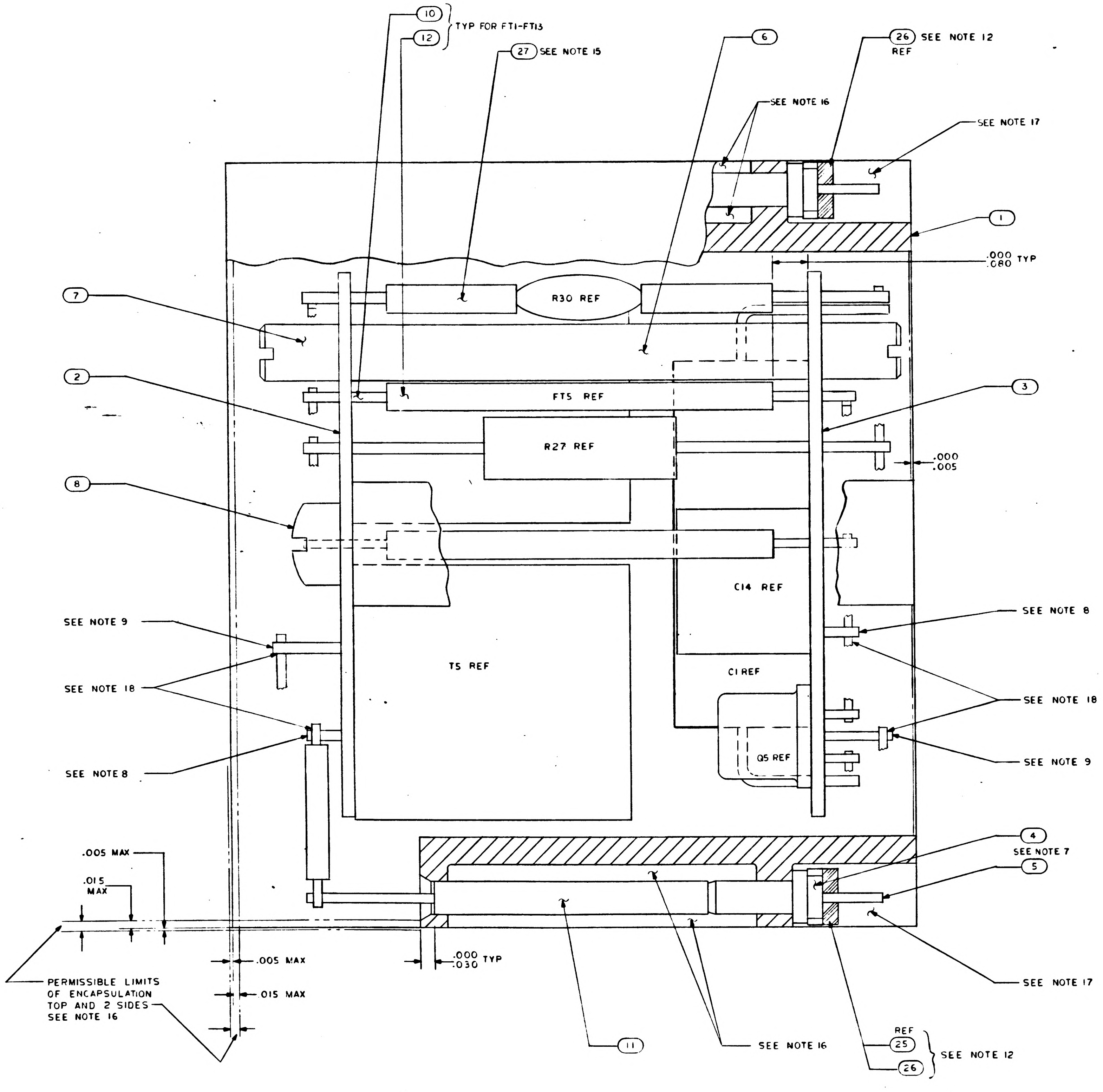
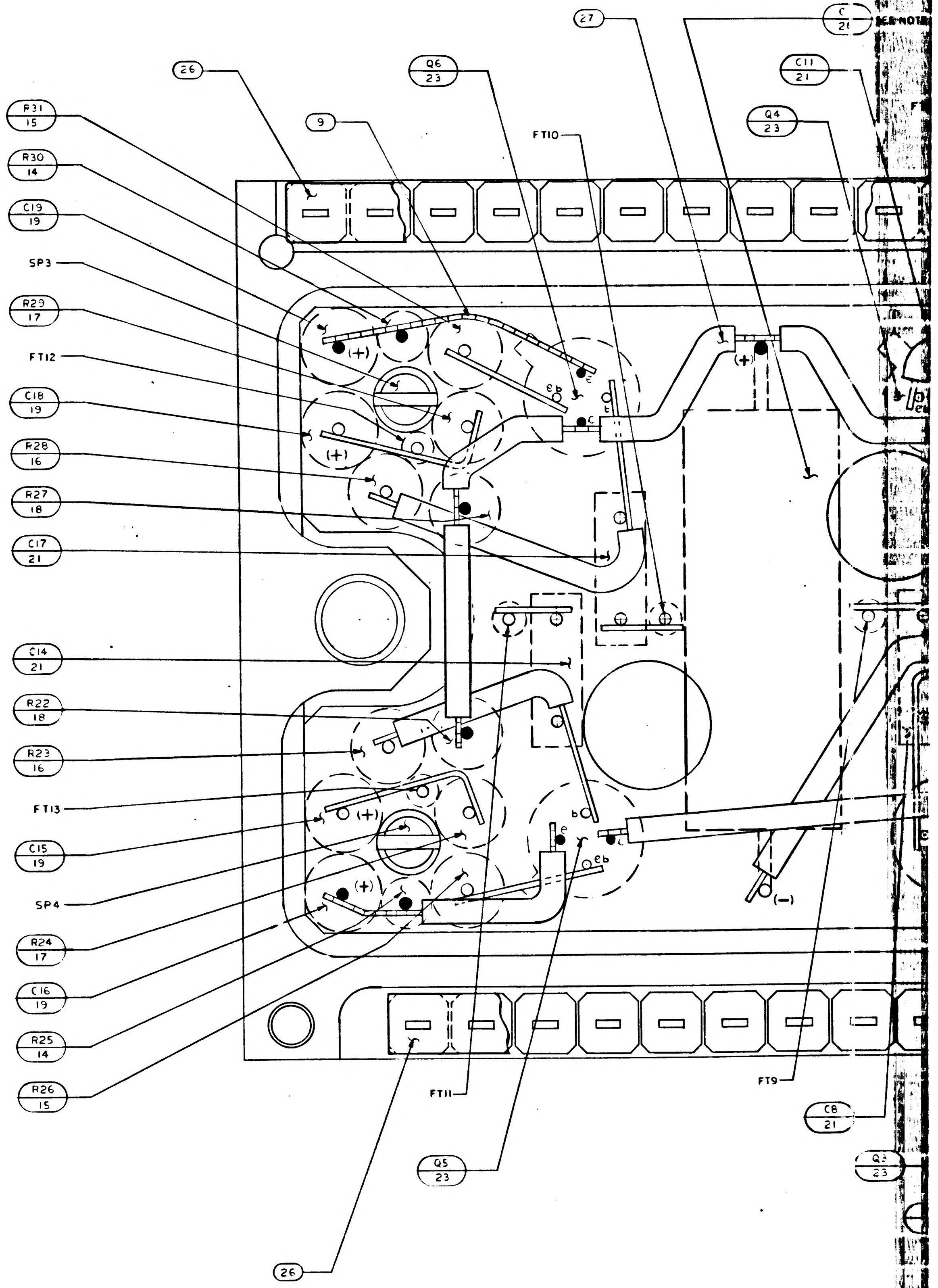

10
12
TYP FOR FT1-FT13
27 SEE NOTE 15
6
26 SEE NOTE 12
REF
SEE NOTE 16
SEE NOTE 17
1
.000 TYP
.080
7
R30 REF
FT5 REF
2
3
R27 REF
.000
.005
8
C14 REF
SEE NOTE 8
SEE NOTE 9
SEE NOTE 18
T5 REF
C1 REF
SEE NOTE 18
SEE NOTE 8
Q5 REF
SEE NOTE 9
.005 MAX
.015 MAX
4
SEE NOTE 7
5
.000 TYP
.030
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION TOP AND 2 SIDES SEE NOTE 16
11
SEE NOTE 16
REF
25
26
SEE NOTE 12
SEE NOTE 17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Q6 23
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C 21
C11 21
Q4 23
R31 15
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FT10
R30 14
C19 19
SP3
R29 17
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R28 16
R27 18
C17 21
C14 21
R22 18
R23 16
FT13
C15 19
SP4
R24 17
C16 19
R25 14
R26 15
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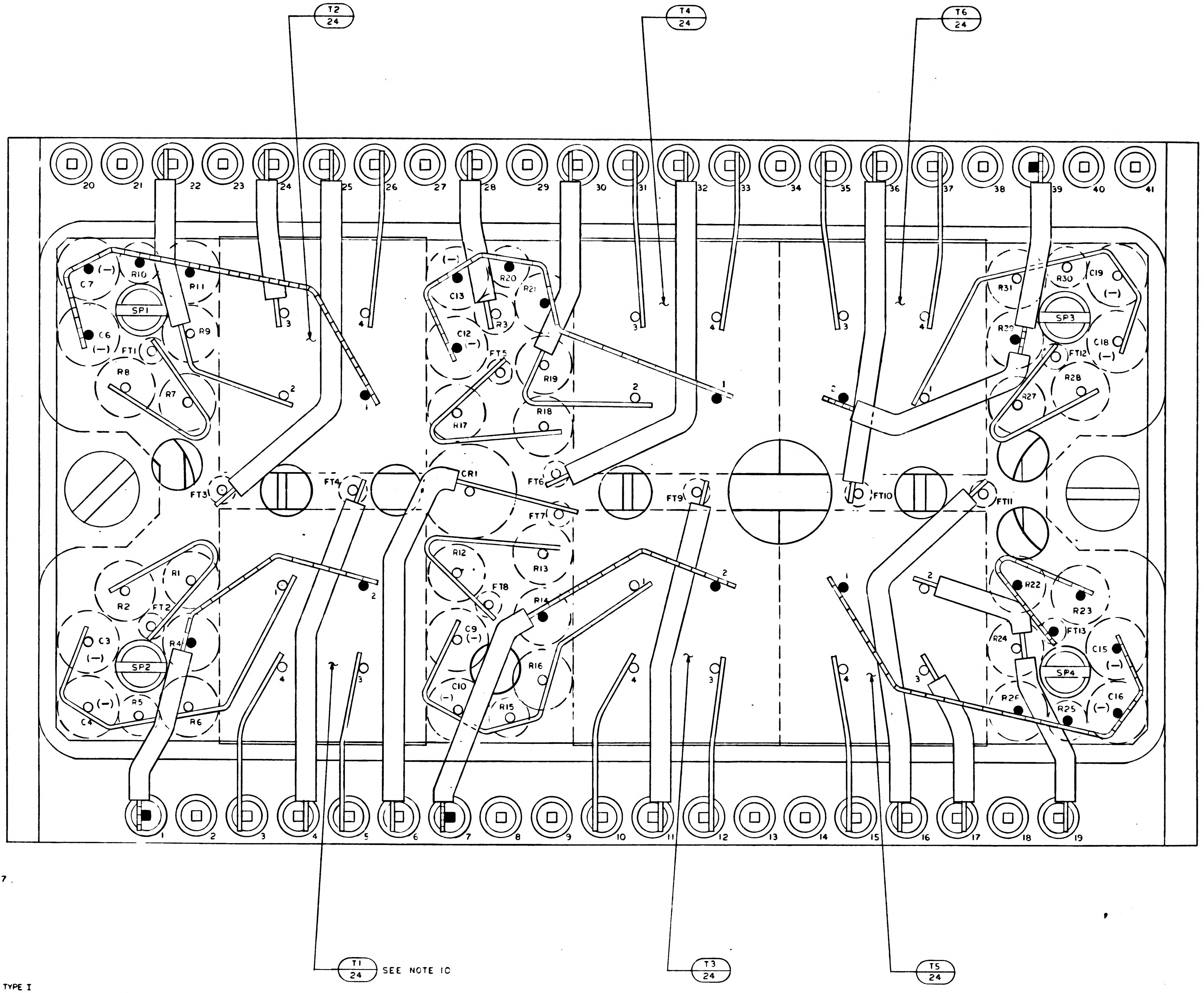
FT11
FT9
C8 21
Q5 23
Q3 23
26


T2
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T4
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T6
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T1
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SEE NOTE 10
T3
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T5
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16
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18
19
C7
(−)
R10
R11
SP1
C6
(−)
R9
FT1
R8
R7
FT3
(−)
C13
R20
R21
C12
(−)
R3
FT5
R19
R18
R17
FT6
FT4
CR1
FT7
FT9
FT10
R31
R30
C19
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FT8
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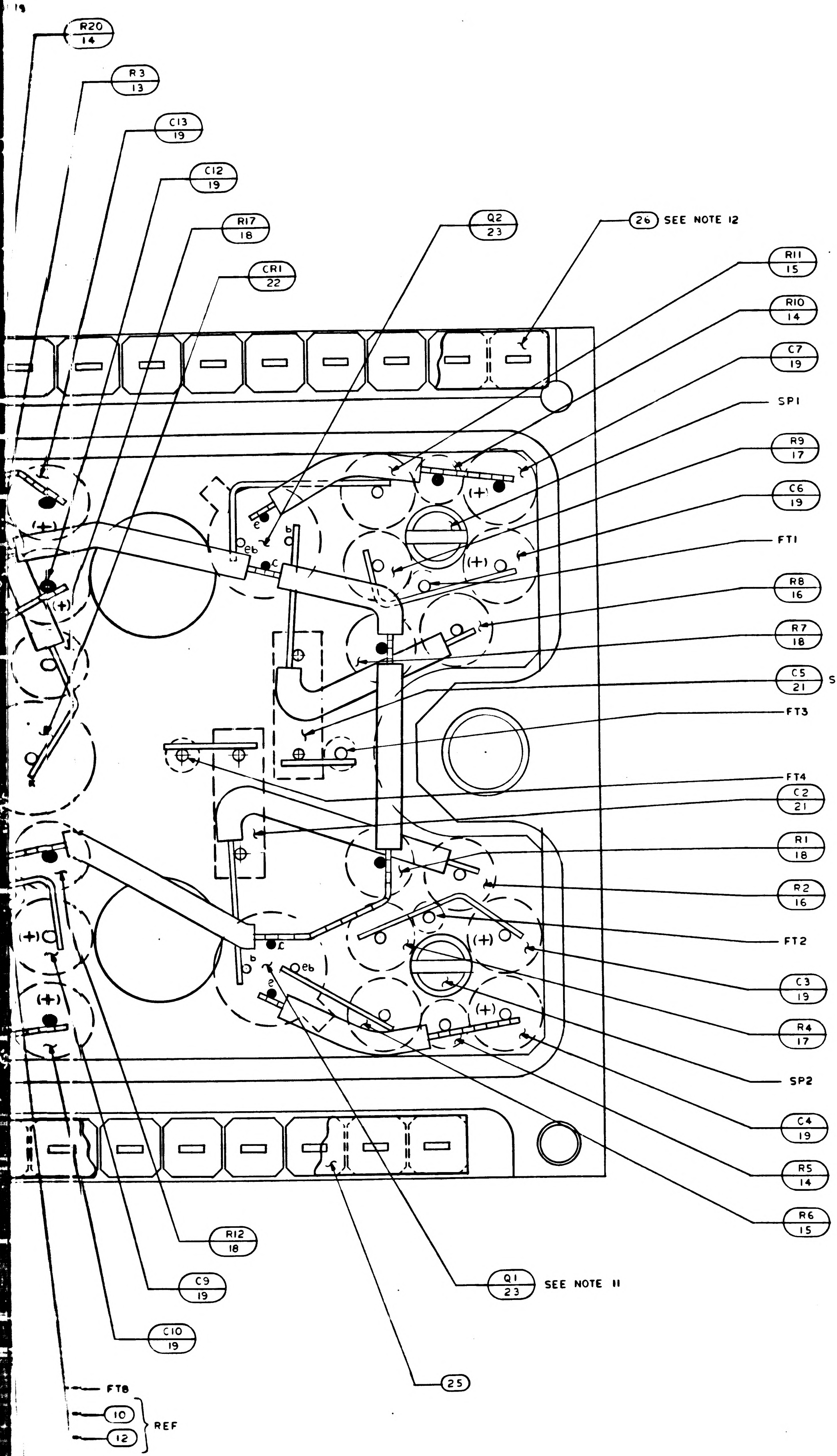
C10
(−)
R16
R15
R22
R23
R24
FT13
C15
(−)
SP4
R26
R25
C16
(−)

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. AR DENOTES AS REQUIRED
3. FT DENOTES FEED THRU
4. K DENOTES CATHODE SIDE OF DIODE
5. SP DENOTES SPACER
6. WELD PER ND 1002005
7. ASSEMBLE FIND NO 4 AND FIND 5 PER ND 1002136
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
10. BOND T1 THRU T6 TO FIND NO 2 PER ND 1002004 TYPE I
11. BOND Q1 THRU Q6 AND C1, C2, C5, C8, C11, C14 AND C17 TO FIND NO 3 PER ND 1002004 TYPE I
12. BOND FIND NO 25 AND FIND 26 TO FIND NO 4 PER ND 1002237
13. MARK .100/.060 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
14. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
15. TYPICAL SLEEVING FOR FIND NO.14
16. ENCAPSULATE MODULE PER ND 1002002 BLACK POLYURETHANE FOAM REMOVE ALL FLASHING
17. INDICATED AREAS TO BE FREE OF ENCAPSULATION
18. WORKMANSHIP REQUIREMENTS PER ND 1002069
19. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007526.
20. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND1002187 TYPE II.

1007526 D

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16623	-65	DAS
B	REVISED PER TDRR 16827	4 MAR 65	[illegible]
C	REVISED PER TDRR 19412	2 JUN 65	J.K. MEM
D	REVISED PER TDRR 19487	65	EF



R20 14
R3 13
C13 19
C12 19
R17 18
CR1 22
Q2 23
26 SEE NOTE 12
R11 15
R10 14
C7 19
SP1
R9 17
C6 19
FT1
R8 16
R7 18
C5 21 SEE NOTE 11
FT3
FT4
C2 21
R1 18
R2 16
FT2
C3 19
R4 17
SP2
C4 19
R5 14
R6 15
R12 18
C9 19
C10 19
Q1 23 SEE NOTE 11
25
FT8
10
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REF
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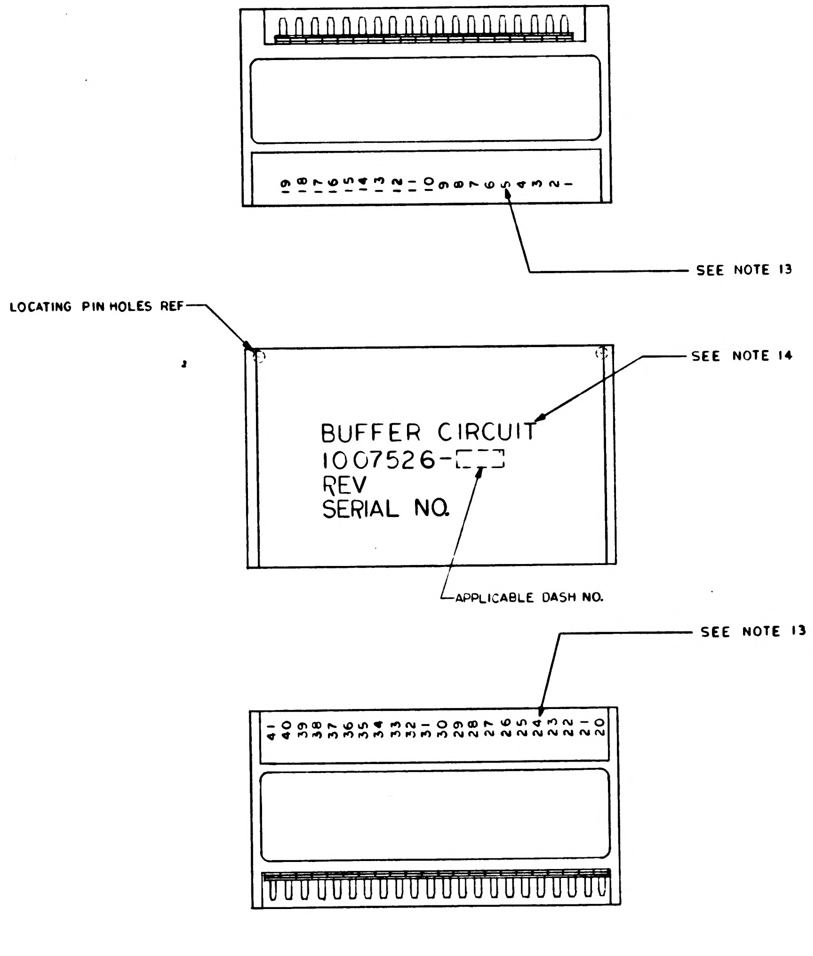


SEE NOTE 13
LOCATING PIN HOLES REF
SEE NOTE 14
BUFFER CIRCUIT
1007526-
REV
SERIAL NO.
APPLICABLE DASH NO.
SEE NOTE 13
19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20

MARKING VIEW
SCALE 2/1

	1009507	SCHEMATIC	REF
AR	1006776-21	INSULATION SLEEVING	27
3	1008540-11	GASKET, CONNECTOR, MINIATURE	26
1	1008540-8	GASKET CONNECTOR, MINIATURE	25
6	1010759	TRANSFORMER	24
6	1010342	TRANSISTOR	23
1	1010829-13	DIODE	22
6	1010359-29	CAPACITOR	21
1	1006755-84	CAPACITOR	20
12	1006755-69	CAPACITOR	19
6	1010374-29	RESISTOR	18
6	1010374-1	RESISTOR	17
6	1010364-765	RESISTOR	16
6	1010364-719	RESISTOR	15
6	1006750-51	RESISTOR	14
1	1006750-26	RESISTOR	13
AR	1006776-22	INSULATION SLEEVING	12
AR	1006776-20	INSULATION SLEEVING	11
AR	1006757-8	WIRE ELECTRICAL .020 DIA	10
AR	1006757-1	WIRE, ELECTRICAL .010 X.020	9
2	1010485-98	SCREW, FILLISTER HD	8
8	1008161-3	SCREW, CAP SLOTTED HD (SPECIAL)	7
4	1015135-018	SPACER	6
41	1006782-5	CONTACT, WRAPOST MALE MIN	5
41	1006775	INSULATOR, WRAPOST MALE MIN	4
1	1008557	WIRING BOARD, BOTTOM	3
1	1008558	WIRING BOARD, TOP	2
1	1007595	FRAME	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

011 LIST OF MATERIALS

NEXT ASSY	USED ON
1007578	
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ± .005 XX ± .02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN DATE
CHECKED 30 SEP 64
APPROVAL 7 OCT 64
APPROVAL 10-8-64
NASA APPROVAL 10-14-64
MIT APPROVAL 10/14/64

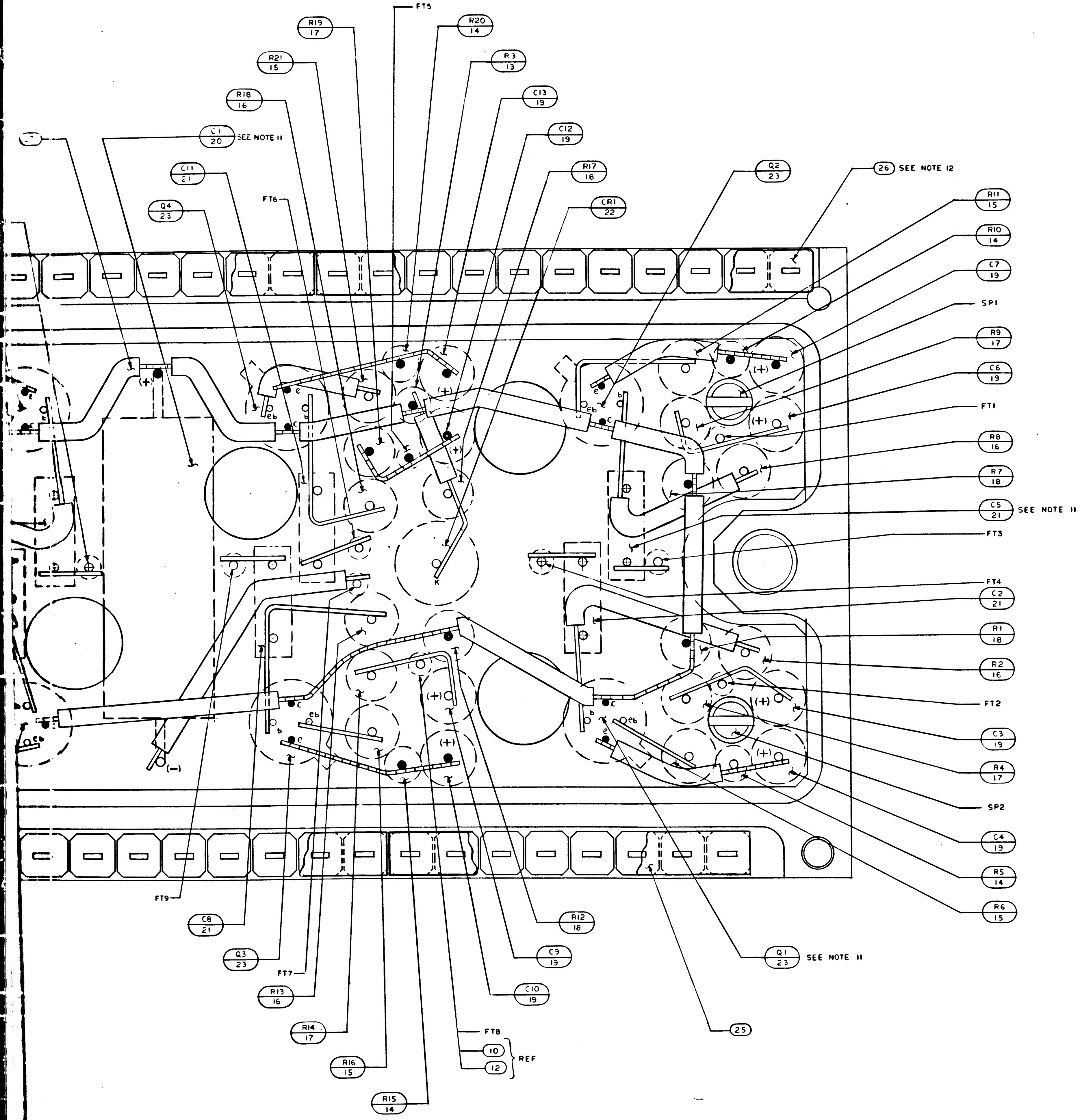
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BUFFER CIRCUIT
ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007526
SCALE 10/1
WT
SHEET 1 OF 1

1007526 REV LTR D SH 1

4/1007526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FT5
R21 15
R3 13
R18 16
C13 19
C1 20 SEE NOTE 11
C12 19
C11 21
R17 18
FT6
Q4 23
CR1 22
Q2 23
26 SEE NOTE 12
R11 15
R10 14
C7 19
SP1
R9 17
C6 19
FT1
R8 16
R7 18
C5 21 SEE NOTE 11
FT3
FT4
C2 21
R1 18
R2 16
FT2
C3 19
R4 17
SP2
C4 19
R5 14
R6 15
Q1 23 SEE NOTE 11
25
FT9
C8 21
Q3 23
FT7
R13 16
R14 17
R16 15
R15 14
FT8
10
12
REF
R12 18
C9 19
C10 19
(+)
(-)
c
b
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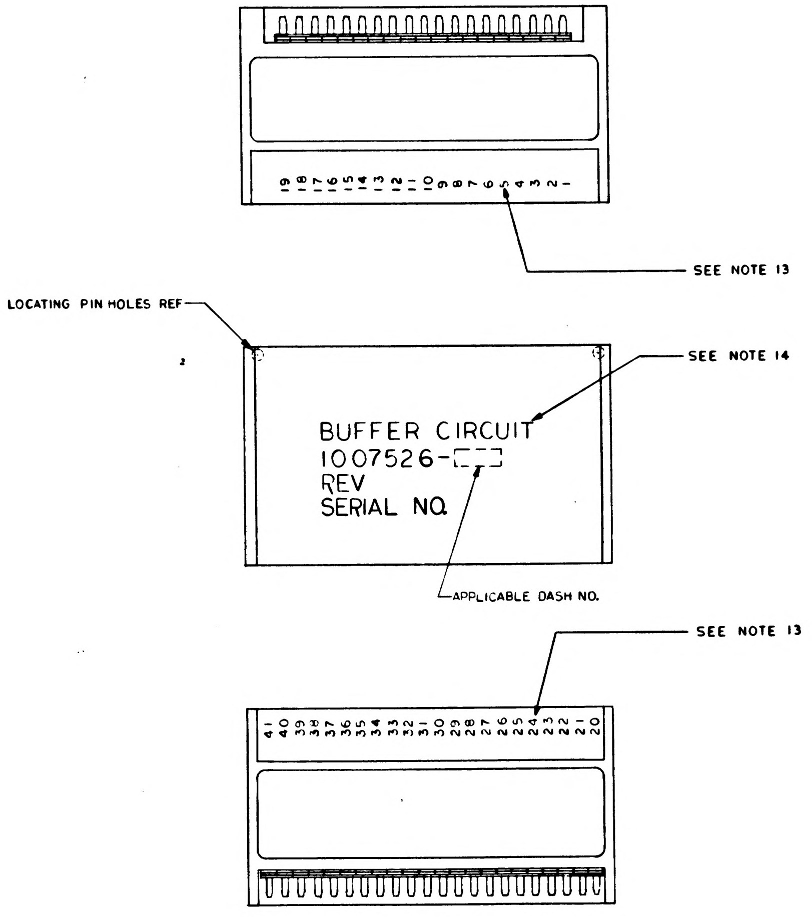
eb
k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SEE NOTE 13
LOCATING PIN HOLES REF
SEE NOTE 14
BUFFER CIRCUIT
1007526-
REV
SERIAL NO.
APPLICABLE DASH NO.
SEE NOTE 13
41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20

MARKING VIEW
SCALE 2/1

1007578	
1007579	
NEXT ASSY	USED ON
APPLICATION	

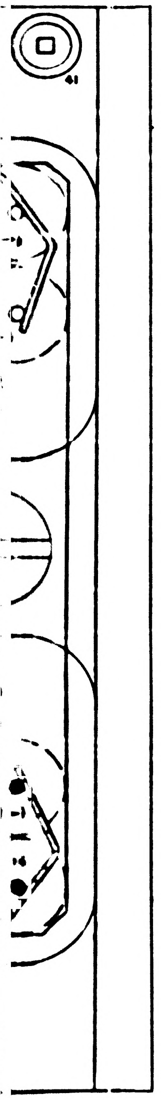
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± XXX ± .005 ±
XX ± .0
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

DRAWN
CHECKED
APPROVAL
APPROVAL
NASA APP

QTY REQD

1007526	REV LTR D	SH 1

3/1007526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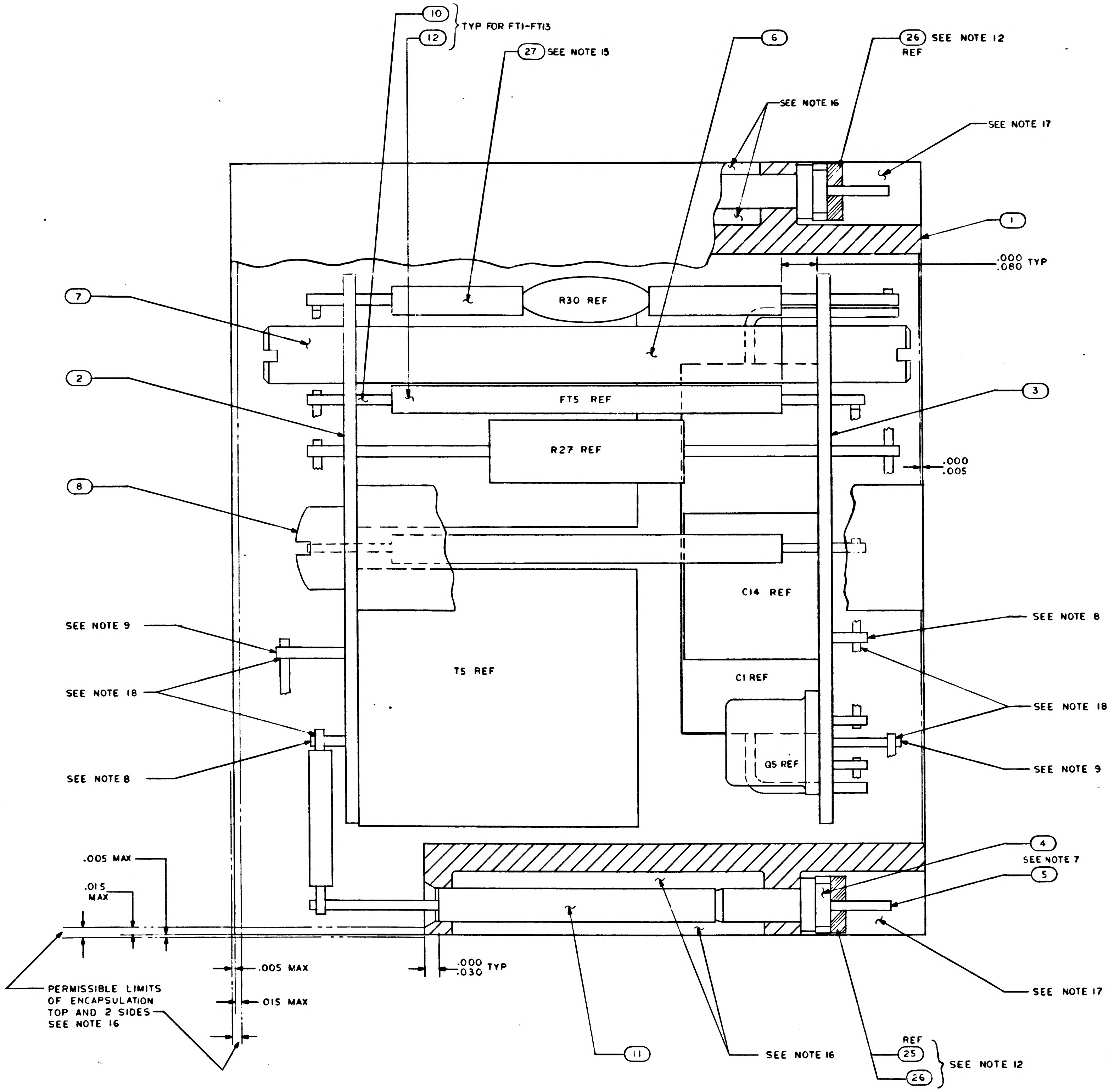
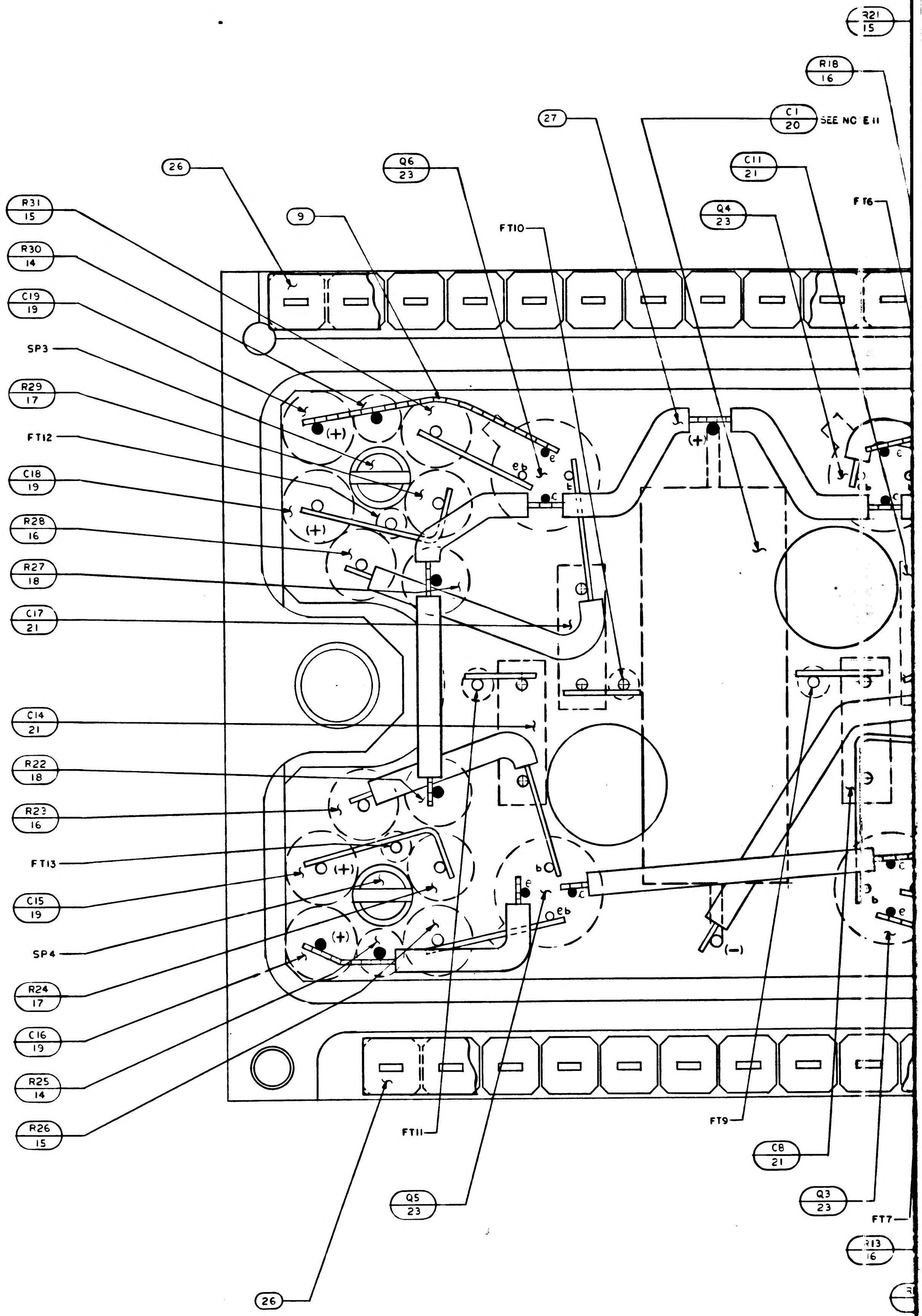

10
12
TYP FOR FT1-FT13
27 SEE NOTE 15
6
26 SEE NOTE 12
REF
SEE NOTE 16
SEE NOTE 17
1
.000
.080 TYP
7
R30 REF
2
FT5 REF
3
R27 REF
.000
.005
8
C14 REF
SEE NOTE 9
SEE NOTE 8
T5 REF
SEE NOTE 18
C1 REF
SEE NOTE 18
Q5 REF
SEE NOTE 9
SEE NOTE 8
.005 MAX
.015 MAX
4
SEE NOTE 7
5
.005 MAX
.015 MAX
.000
.030 TYP
PERMISSIBLE LIMITS
OF ENCAPSULATION
TOP AND 2 SIDES
SEE NOTE 16
11
SEE NOTE 16
REF
25
26
SEE NOTE 12
SEE NOTE 17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R18 16
C1 20 SEE NC E11
27
C11 21
26
Q6 23
FT6
Q4 23
9
FT10
R31 15
R30 14
C19 19
SP3
R29 17
FT12
C18 19
R28 16
R27 18
C17 21
C14 21
R22 18
R23 16
FT13
C15 19
SP4
R24 17
C16 19
R25 14
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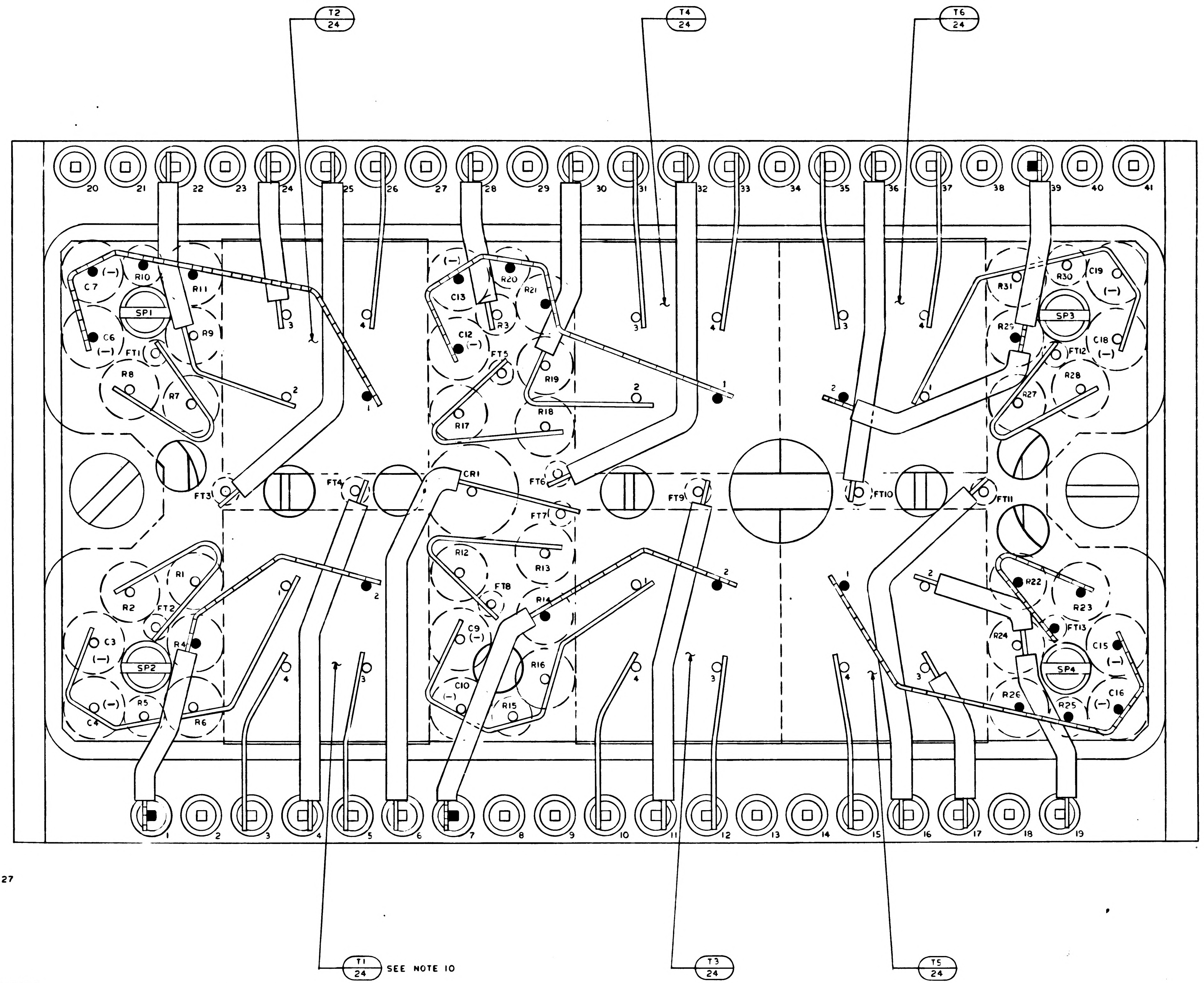
R13 16
(+)
(-)
e
b
c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T4
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T6
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41
C7
(−)
R10
R11
SP1
R9
C6
(−)
FT1
R8
R7
(−)
C13
R20
R21
R3
C12
(−)
FT5
R19
R17
R18
R31
R30
C19
(−)
R29
SP3
FT12
C18
(−)
R28
R27
FT3
FT4
CR1
FT6
FT7
FT9
FT10
FT11
R1
R2
FT2
C3
(−)
R4
SP2
C4
(−)
R5
R6
R12
R13
FT8
R14
C9
(−)
R16
C10
(−)
R15
R22
R23
R24
FT13
C15
(−)
SP4
C16
(−)
R26
R25
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2
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9
10
11
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14
15
16
17
18
19
T1
24
SEE NOTE 10
T3
24
T5
24

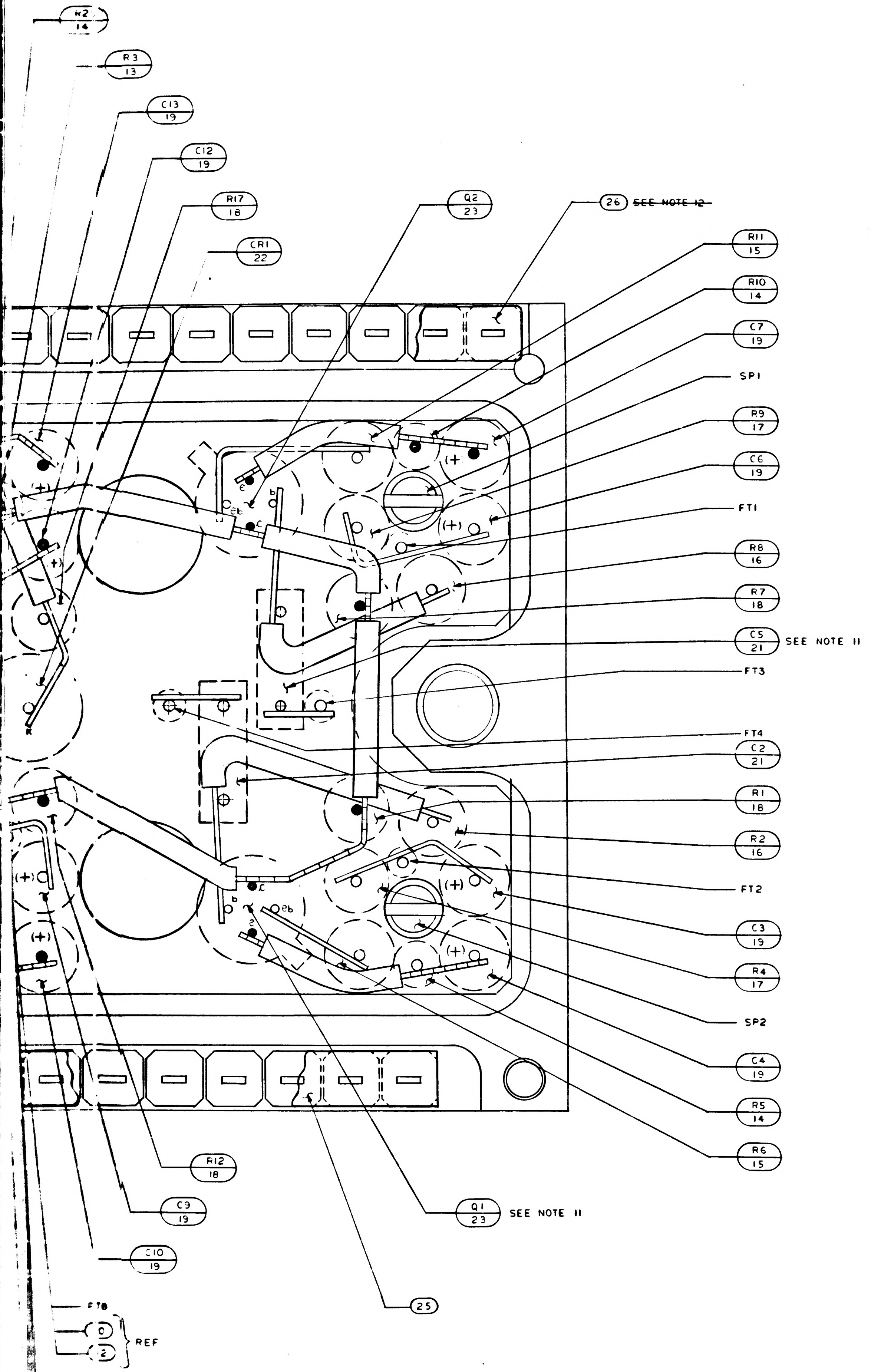
NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. FT DENOTES FEED THRU
4. K DENOTES CATHODE SIDE OF DIODE
5. SP DENOTES SPACER
6. WELD PER ND 1002005
7. ASSEMBLE FIND NO 4 AND FIND 5 PER ND 1002136
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
10. BOND T1 THRU T6 TO FIND NO 2 PER ND 1002004 TYPE I
11. BOND Q1 THRU Q6 AND C1, C2, C5, C8, C11, C14 AND C17 TO FIND NO 3 PER ND 1002004 TYPE I
12. BOND FIND NO 25 AND FIND 26 TO FIND NO 4 PER ND 1002237
13. MARK .100/.060 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
14. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
15. TYPICAL SLEEVING FOR FIND NO 14
16. ENCAPSULATE MODULE PER ND 1002002 BLACK POLYURETHANE FOAM REMOVE ALL FLASHING
17. INDICATED AREAS TO BE FREE OF ENCAPSULATION
18. WORKMANSHIP REQUIREMENTS PER ND 1002069
19. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007526.
~~20. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERIOR EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND1002107 TYPE II.~~
21. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
22. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

1007526	REV LTR D	SH 1

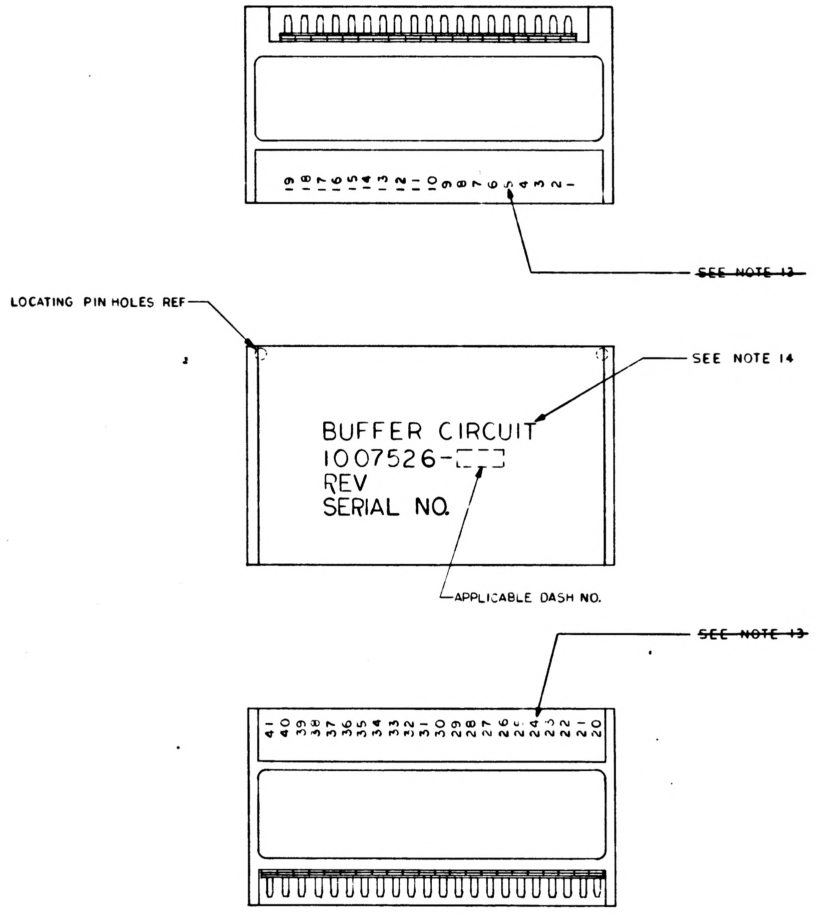
D	1007526

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16623	[illegible]	M.
B	REVISED PER TDRR 16827	[illegible]	[illegible]
C	REVISED PER TDRR 19412	[illegible]	EM
D	REVISED PER TDRR 19487	[illegible]	[illegible]
E	REVISED PER TDRR 20143	[illegible]	[illegible]



R2 14
R3 13
C13 19
C12 19
R17 18
CR1 22
Q2 23
26 ~~SEE NOTE 12~~
R11 15
R10 14
C7 19
SP1
R9 17
C6 19
FT1
R8 16
R7 18
C5 21 SEE NOTE 11
FT3
FT4
C2 21
R1 18
R2 16
FT2
C3 19
R4 17
SP2
C4 19
R5 14
R6 15
Q1 23 SEE NOTE 11
R12 18
C9 19
C10 19
25
FT8
① ② REF
(+)
e
b
c



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~~SEE NOTE 13~~
LOCATING PIN HOLES REF
SEE NOTE 14
BUFFER CIRCUIT
1007526-
REV
SERIAL NO.
APPLICABLE DASH NO.
~~SEE NOTE 13~~
41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20

MARKING VIEW
SCALE 2/1

☒	1009507	SCHEMATIC	REF
AR	1006776-21	INSULATION SLEEVING	27
3	1008540-11	GASKET, CONNECTOR, MINIATURE	26
1	1008540-8	GASKET CONNECTOR, MINIATURE	25
6	1010759	TRANSFORMER	24
6	1010342	TRANSISTOR	23
1	1010829-13	DIODE	22
6	1010359-29	CAPACITOR	21
1	1006755-84	CAPACITOR	20
12	1006755-69	CAPACITOR	19
6	1010374-29	RESISTOR	18
6	1010374-1	RESISTOR	17
6	1010364-765	RESISTOR	16
6	1010364-719	RESISTOR	15
6	1006750-51	RESISTOR	14
1	1006750-26	RESISTOR	13
AR	1006776-22	INSULATION SLEEVING	12
AR	1006776-20	INSULATION SLEEVING	11
AR	1006757-8	WIRE ELECTRICAL .020 DIA	10
AR	1006757-1	WIRE, ELECTRICAL .010 X .020	9
2	1010485-98	SCREW, FILLISTER HD	8
8	1008161-3	SCREW, CAP SLOTTED HD, SPECIAL	7
4	1015135-018	SPACER	6
41	1006782-5	CONTACT, WRAPOST MALE MIN	5
41	1006775	INSULATOR, WRAPOST MALE MIN	4
1	1008557	WIRING BOARD, BOTTOM	3
1	1008558	WIRING BOARD, TOP	2
1	1007595	FRAME	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
011	LIST OF MATERIALS		

1007526 E

NEXT ASSY	USED ON
1007578	
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ± .005 XX ± .02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN DATE
CHECKED 30SEP64
APPROVAL 2OCT64
APPROVAL 10-8-64
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

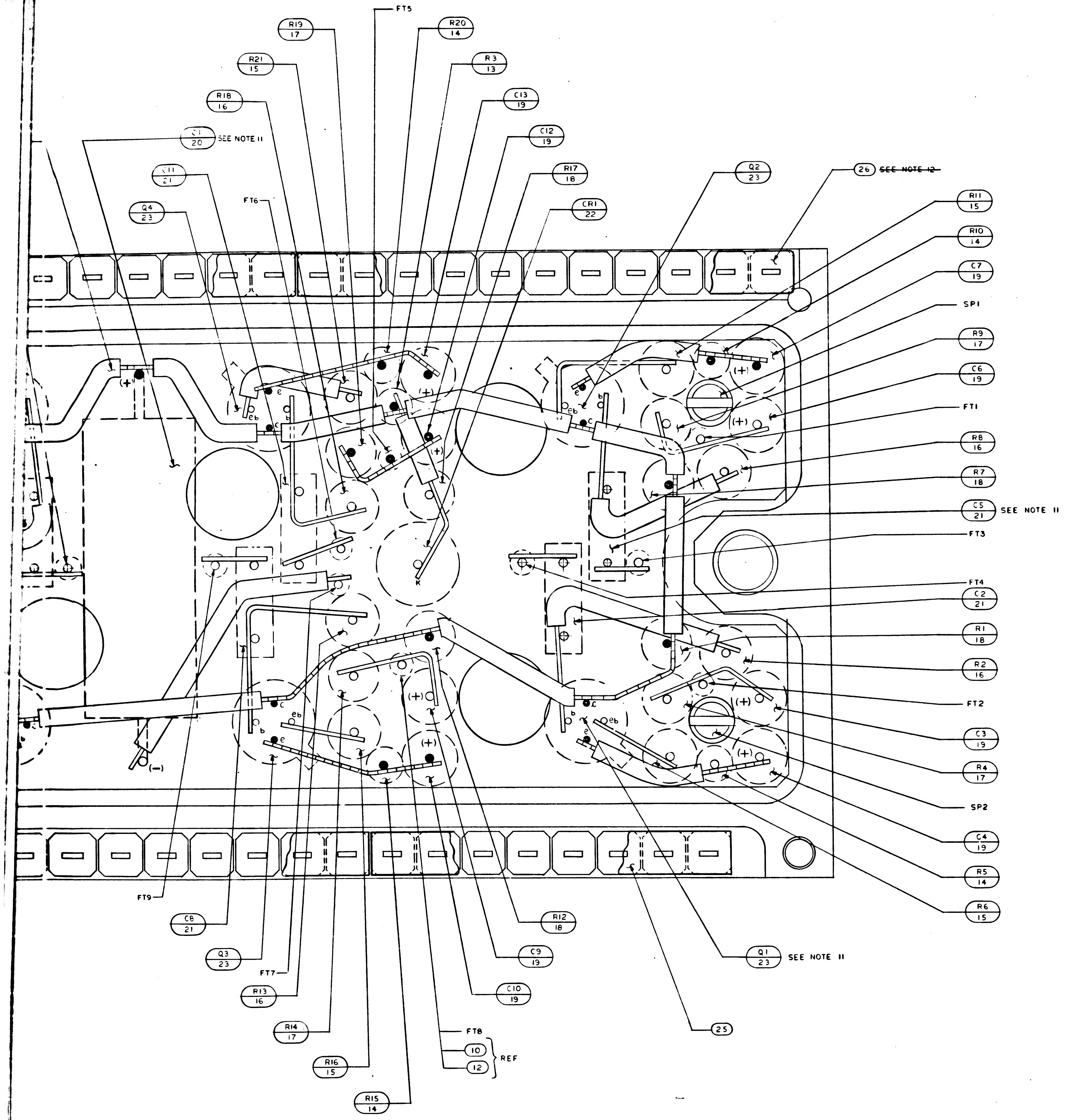
BUFFER CIRCUIT
ASSEMBLY

CODE IDENT NO 80230
SIZE J
NASA DRAWING NO 1007526
SCALE 10/1
WT
SHEET 1 OF 1

(4-)

1007526 REV LTR E SH 1

4/1007526


FT5
R19 17
R20 14
R21 15
R3 13
R18 16
C13 19
C1 20 SEE NOTE 11
C12 19
C11 21
R17 18
FT6
CR1 22
Q4 23
Q2 23
26 ~~SEE NOTE 12~~
R11 15
R10 14
C7 19
SP1
R9 17
C6 19
FT1
R8 16
R7 18
C5 21 SEE NOTE 11
FT3
FT4
C2 21
R1 18
R2 16
FT2
C3 19
R4 17
SP2
C4 19
R5 14
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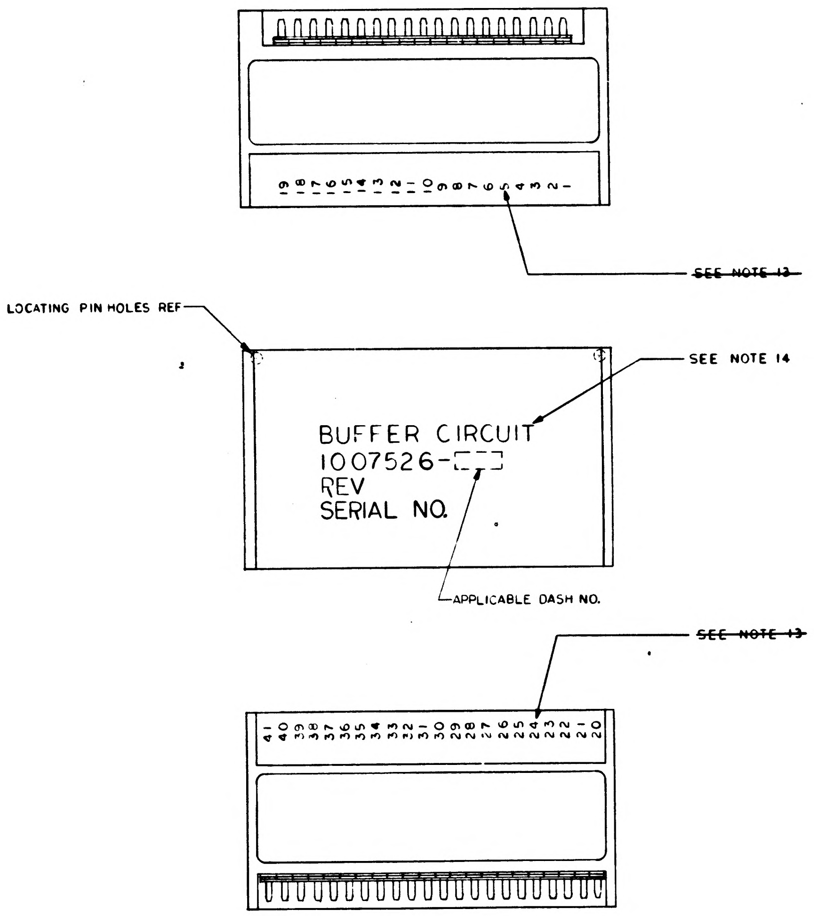
C8 21
Q3 23
FT7
R13 16
R14 17
R16 15
R15 14
FT8
10
12
REF
R12 18
C9 19
C10 19
Q1 23 SEE NOTE 11
25


19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
~~SEE NOTE 13~~
LOCATING PIN HOLES REF
SEE NOTE 14
BUFFER CIRCUIT
1007526-
REV
SERIAL NO.
APPLICABLE DASH NO.
~~SEE NOTE 13~~
41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20

MARKING VIEW
SCALE 2/1

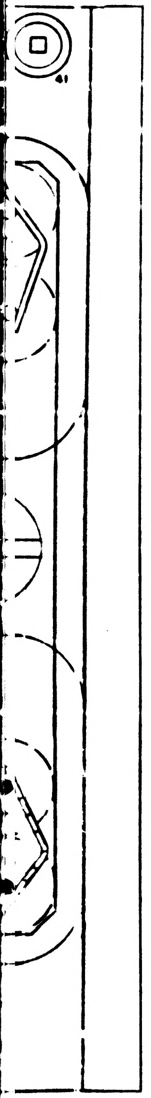
1007578	
1007579	
NEXT ASSY	USED ON
APPLICATION	

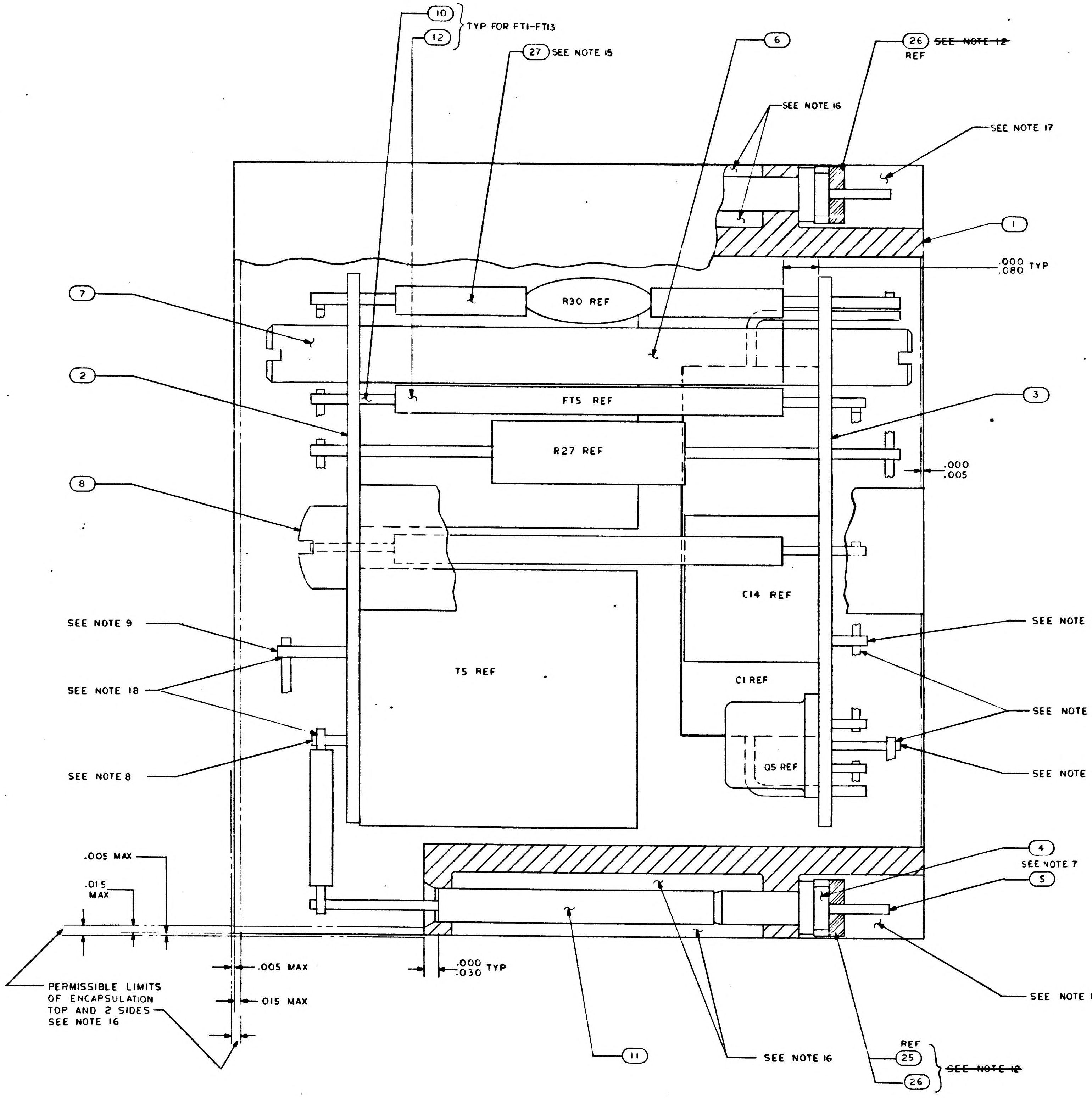
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± XXX ± .005 ±
XX ± .02
DO NOT SCALE THIS DRAWING

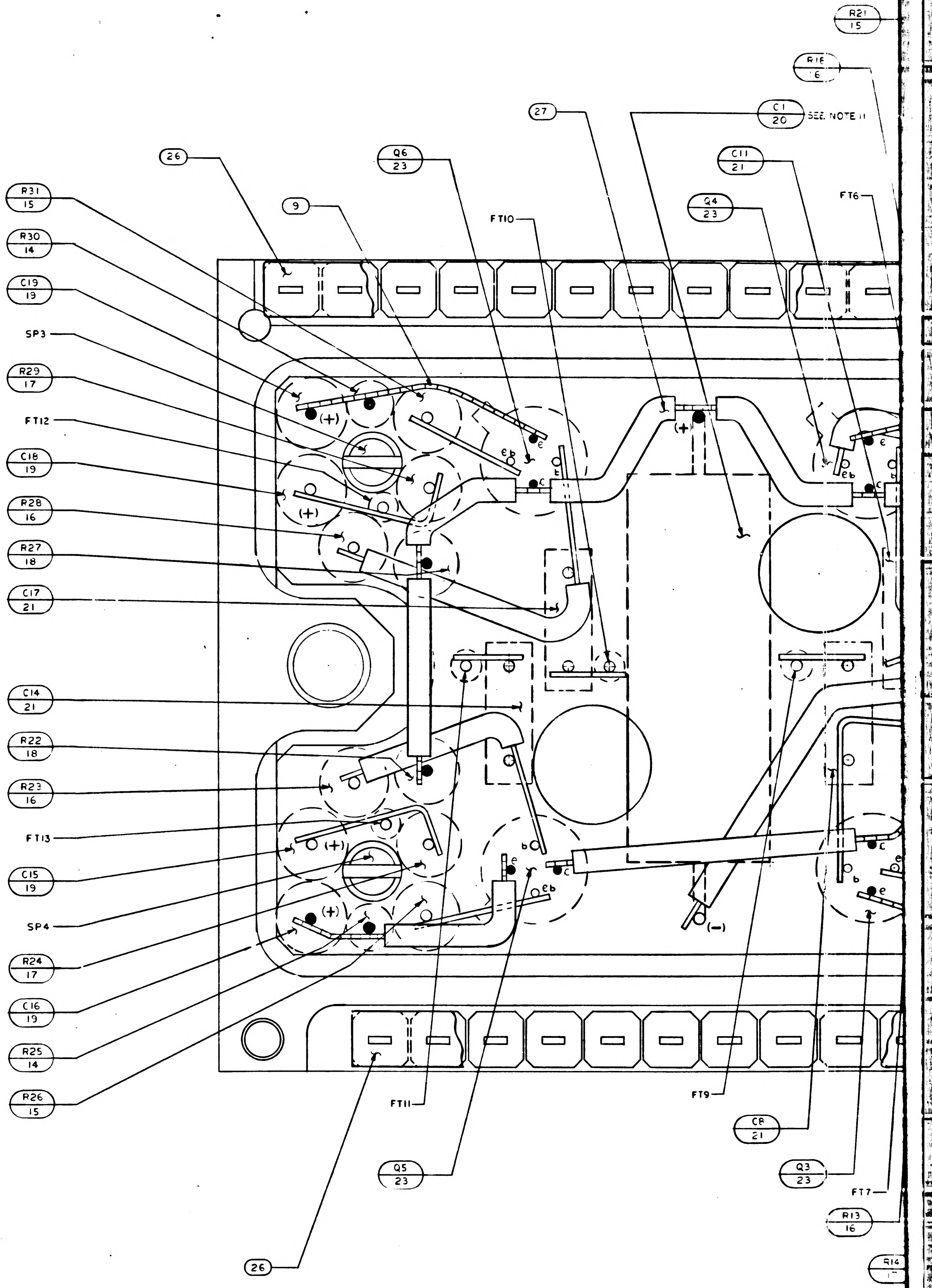
MATERIAL

HEAT TREATMENT

FINAL FINISH




10
12
TYP FOR FT1-FT13
27 SEE NOTE 15
6
26 ~~SEE NOTE 12~~ REF
SEE NOTE 16
SEE NOTE 17
1
.000 .080 TYP
7
R30 REF
2
FT5 REF
3
R27 REF
.000 .005
8
C14 REF
SEE NOTE 9
SEE NOTE 8
SEE NOTE 18
T5 REF
C1 REF
SEE NOTE 18
SEE NOTE 8
Q5 REF
SEE NOTE 9
.005 MAX
.015 MAX
4
SEE NOTE 7
5
PERMISSIBLE LIMITS OF ENCAPSULATION TOP AND 2 SIDES SEE NOTE 16
.005 MAX
.015 MAX
.000 .030 TYP
SEE NOTE 17
11
SEE NOTE 16
REF 25
26
~~SEE NOTE 12~~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R16 6
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C1 20 SEE NOTE 11
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Q6 23
C11 21
Q4 23
FT6
R31 15
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FT10
R30 14
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SP3
R29 17
FT12
C16 19
R28 16
R27 18
C17 21
(+)
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C14 21
R22 18
R23 16
FT13
C15 19
SP4
R24 17
C16 19
R25 14
R26 15
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FT11
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C8 21
Q5 23
Q3 23
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R14
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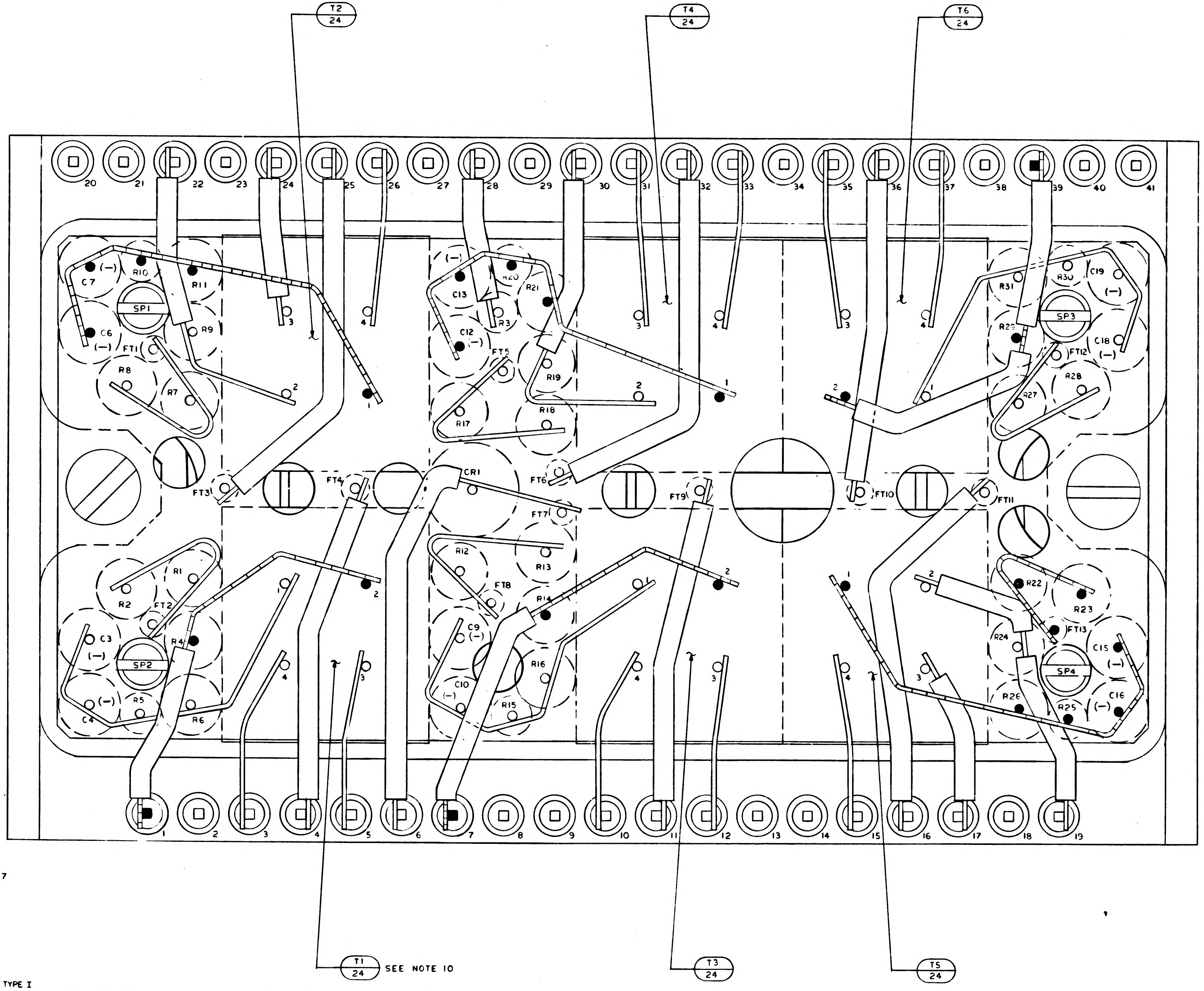
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FT3
FT4
C13
C12
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FT5
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CR1
FT6
FT7
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FT11
R31
R30
C19
SP3
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C18
FT12
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R2
FT2
C3
SP2
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FT13
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SP4
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R25
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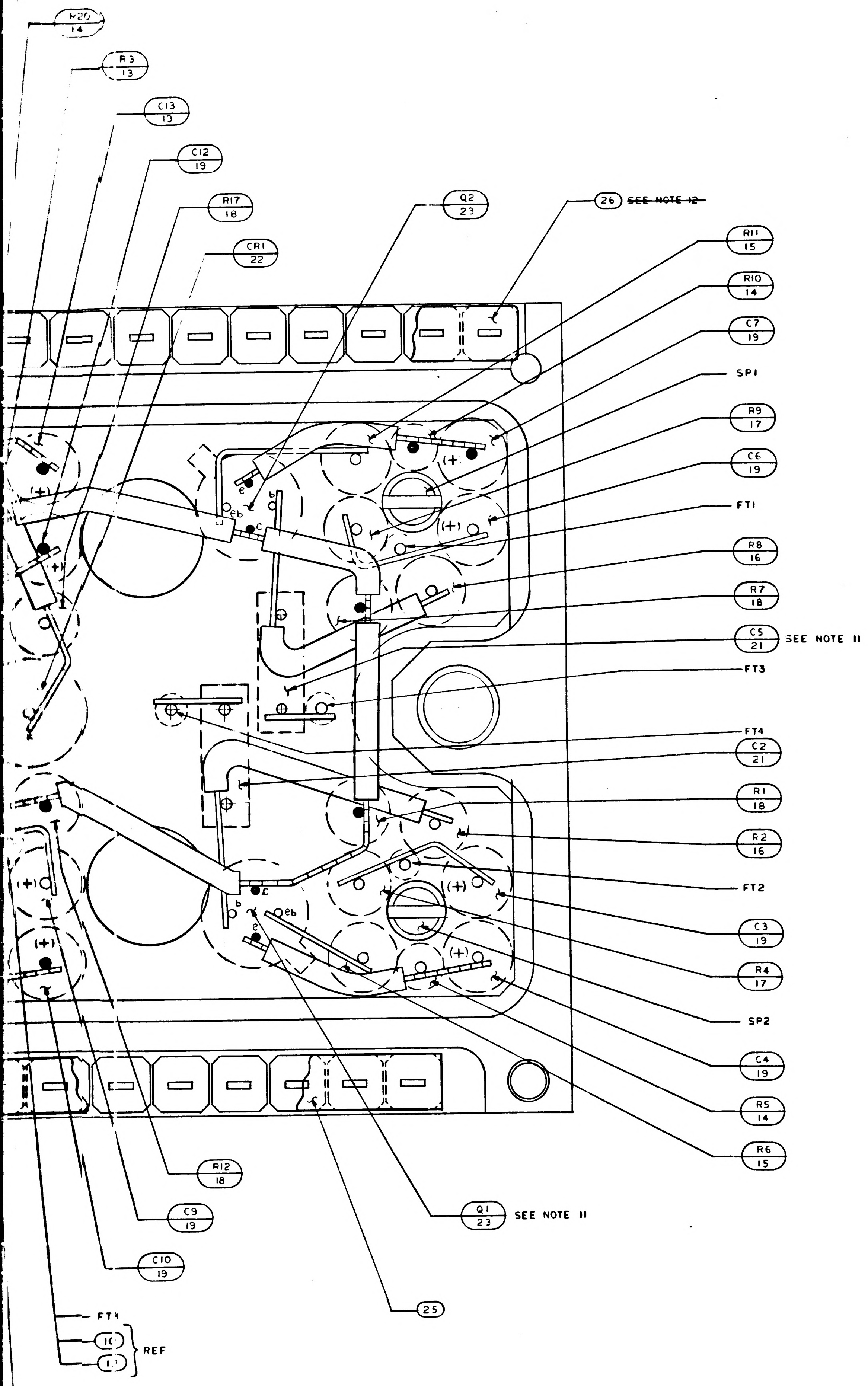
T1
24
SEE NOTE 10
T3
24
T5
24

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. FT DENOTES FEED THRU
4. K DENOTES CATHODE SIDE OF DIODE
5. SP DENOTES SPACER
6. WELD PER ND 1002005
7. ASSEMBLE FIND NO 4 AND FIND 5 PER ND 1002136
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
10. BOND T1 THRU T6 TO FIND NO 2 PER ND 1002004 TYPE I
11. BOND Q1 THRU Q6 AND C1, C2, C5, C8, C11, C14 AND C17 TO FIND NO 3 PER ND 1002004 TYPE I
~~12. BOND FIND NO 25 AND FIND 26 TO FIND NO 4 PER ND 1002237~~
~~13. MARK .100/.060 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN~~
14. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
15. TYPICAL SLEEVING FOR FIND NO.14
16. ENCAPSULATE MODULE PER ND 1002002 BLACK POLYURETHANE FOAM REMOVE ALL FLASHING
17. INDICATED AREAS TO BE FREE OF ENCAPSULATION
18. WORKMANSHIP REQUIREMENTS PER ND 1002069
19. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007526.
~~20. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND1002107 TYPE II.~~
21. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
22. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

1007526	REV E	SH 1

1007526 F

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16623	24 - 65	DAS
B	REVISED PER TDRR 6827	4 MAR 65	EN
C	REVISED PER TDRR 19412	JUN 65	J.K.
D	REVISED PER TDRR 9487	JUN 65	THR SF
E	REVISED PER TDRR 20143	JUN 65	
F	REVISED PER TDRR 22948	12 OCT 65	LK


R20
14
R3
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C13
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C12
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R17
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CR1
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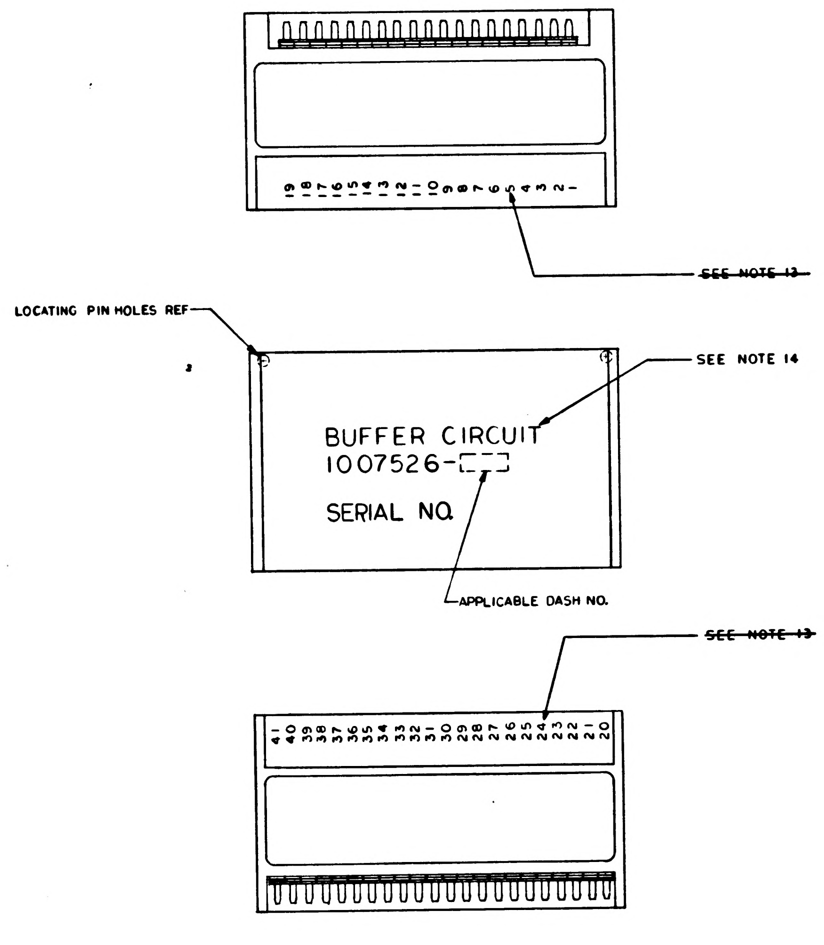
Q2
23
26 ~~SEE NOTE 12~~
R11
15
R10
14
C7
19
SP1
R9
17
C6
19
FT1
R8
16
R7
18
C5
21 SEE NOTE 11
FT3
FT4
C2
21
R1
18
R2
16
FT2
C3
19
R4
17
SP2
C4
19
R5
14
R6
15
R12
18
Q1
23 SEE NOTE 11
C9
19
C10
19
25
FT3
10
11
REF
(+)
e
b
c


19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
~~SEE NOTE 13~~
LOCATING PIN HOLES REF
SEE NOTE 14
BUFFER CIRCUIT
1007526-
SERIAL NO.
APPLICABLE DASH NO.
~~SEE NOTE 13~~
41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20

MARKING VIEW
SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009507	SCHEMATIC	REF
AR	1006776-21	INSULATION SLEEVING	27
3	1008540-11	GASKET, CONNECTOR, MINIATURE	26
1	1008540-8	GASKET CONNECTOR, MINIATURE	25
6	1010759	TRANSFORMER	24
6	1010342	TRANSISTOR	23
1	1010829-13	DIODE	22
6	1010359-29	CAPACITOR	21
1	1006755-84	CAPACITOR	20
12	1006755-69	CAPACITOR	19
6	1010374-29	RESISTOR	18
6	1010374-1	RESISTOR	17
6	1010364-765	RESISTOR	16
6	1010364-719	RESISTOR	15
6	1006750-51	RESISTOR	14
1	1006750-26	RESISTOR	13
AR	1006776-22	INSULATION SLEEVING	12
AR	1006776-20	INSULATION SLEEVING	11
AR	1006757-8	WIRE ELECTRICAL .020 DIA	10
AR	1006757-1	WIRE, ELECTRICAL .010 X020	9
2	1010485-98	SCREW, FILLISTER HD	8
8	1008161-3	SCREW, CAP SLOTTED HD, SPECIAL	7
4	1015135-018	SPACER	6
41	1006782-5	CONTACT, WRAPOST MALE MIN	5
41	1006775	INSULATOR, WRAPOST MALE MIN	4
1	1008557	WIRING BOARD, BOTTOM	3
1	1008558	WIRING BOARD, TOP	2
1	1007595	FRAME	1

011 LIST OF MATERIALS

NEXT ASSY	USED ON
1007578	
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ± .005 XX ± .02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

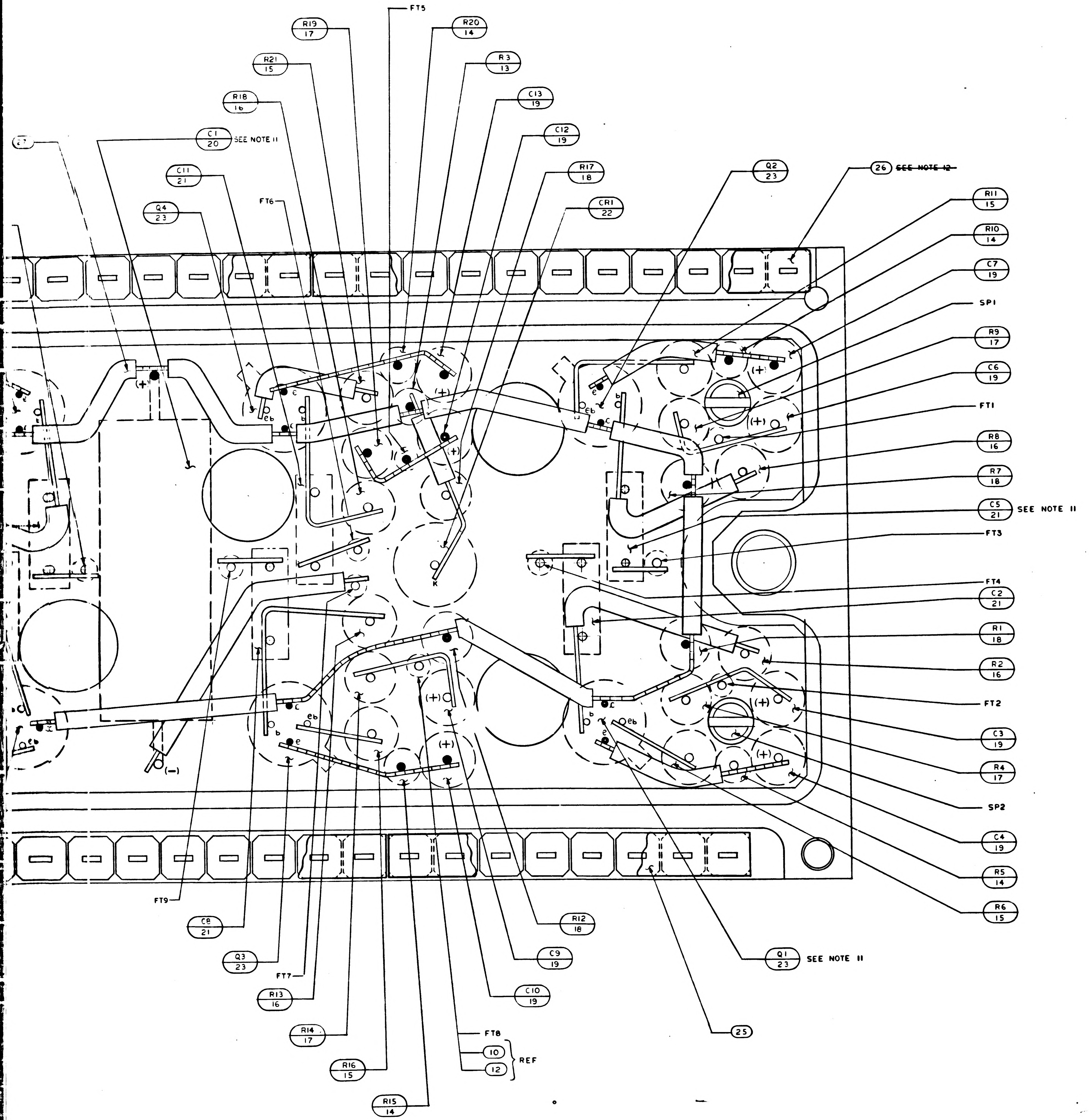
MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN [illegible] DATE
CHECKED [illegible] 30 SEP 64
APPROVAL [illegible]
APPROVAL [illegible] 10-8-64
NASA APPROVAL [illegible] 10-14-64
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BUFFER CIRCUIT ASSEMBLY

CODE IDENT NO. 80230 SIZE J NASA DRAWING NO. 1007526
SCALE 10/1 WT SHEET 1 OF 1

1007526 REV LTR F SH 1


R19 17
R20 14
FT5
R21 15
R3 13
R18 16
C13 19
C1 20 SEE NOTE 11
C12 19
C11 21
R17 18
FT6
CR1 22
Q4 23
Q2 23
26 SEE NOTE 12
R11 15
R10 14
C7 19
SP1
R9 17
C6 19
FT1
R8 16
R7 18
C5 21 SEE NOTE 11
FT3
FT4
C2 21
R1 18
R2 16
FT2
C3 19
R4 17
SP2
C4 19
R5 14
R6 15
FT9
C8 21
R12 18
Q3 23
Q1 23 SEE NOTE 11
FT7
C9 19
R13 16
C10 19
R14 17
25
FT8
10
12
REF
R16 15
R15 14
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(-)
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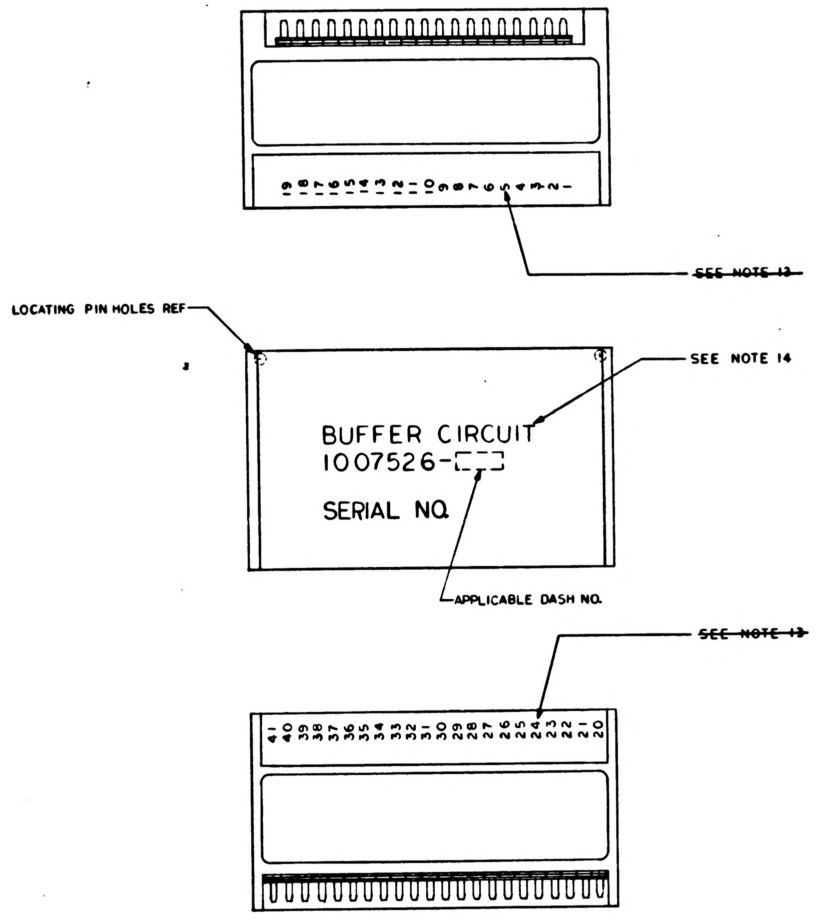
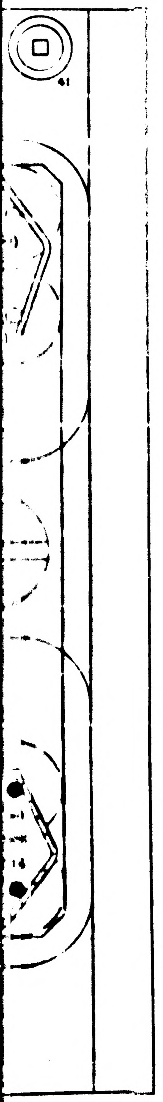
b
c
eb
K

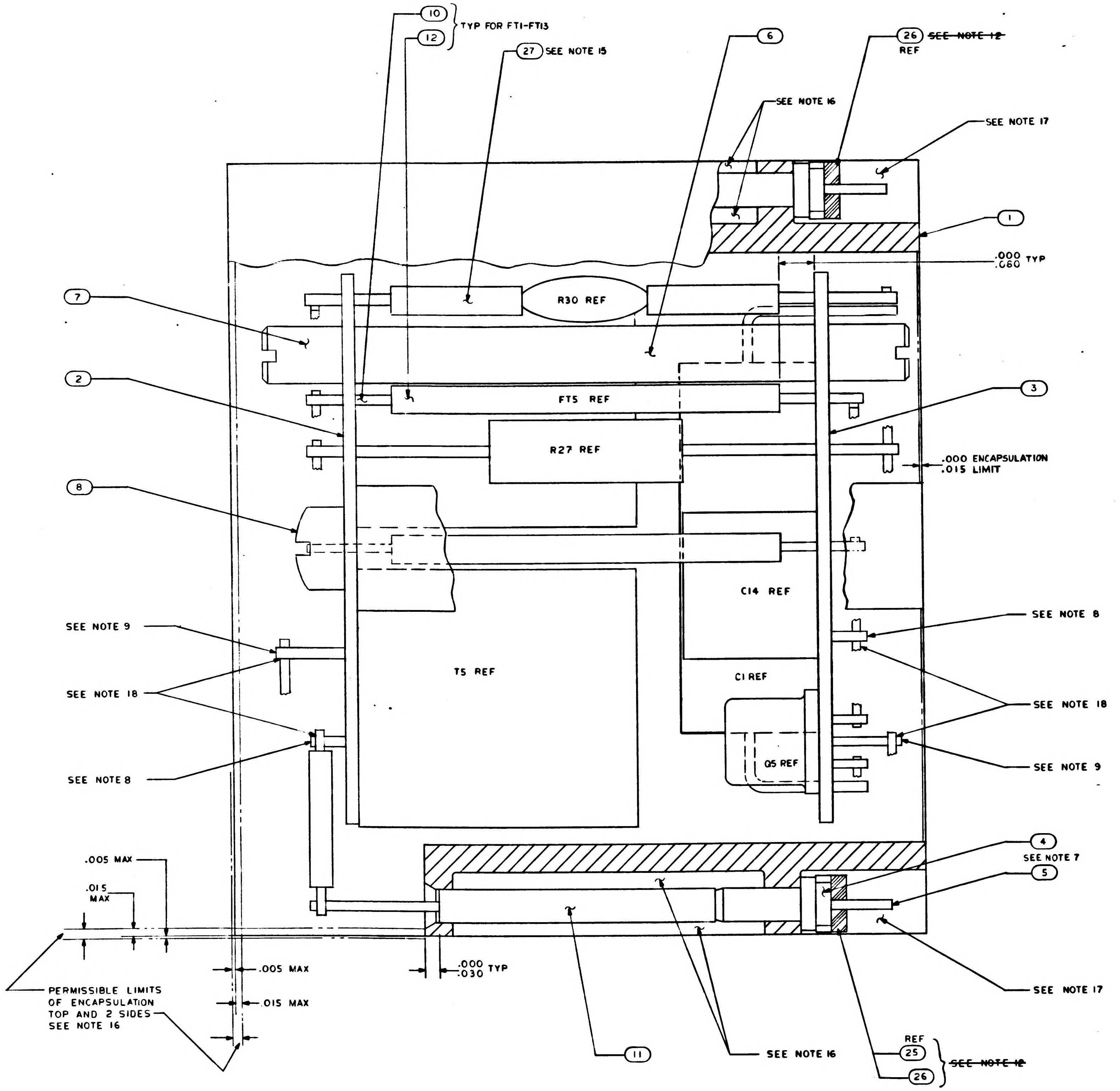

SEE NOTE 13
LOCATING PIN HOLES REF
SEE NOTE 14
BUFFER CIRCUIT
1007526-[ ]
SERIAL NO.
APPLICABLE DASH NO.
SEE NOTE 13
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41

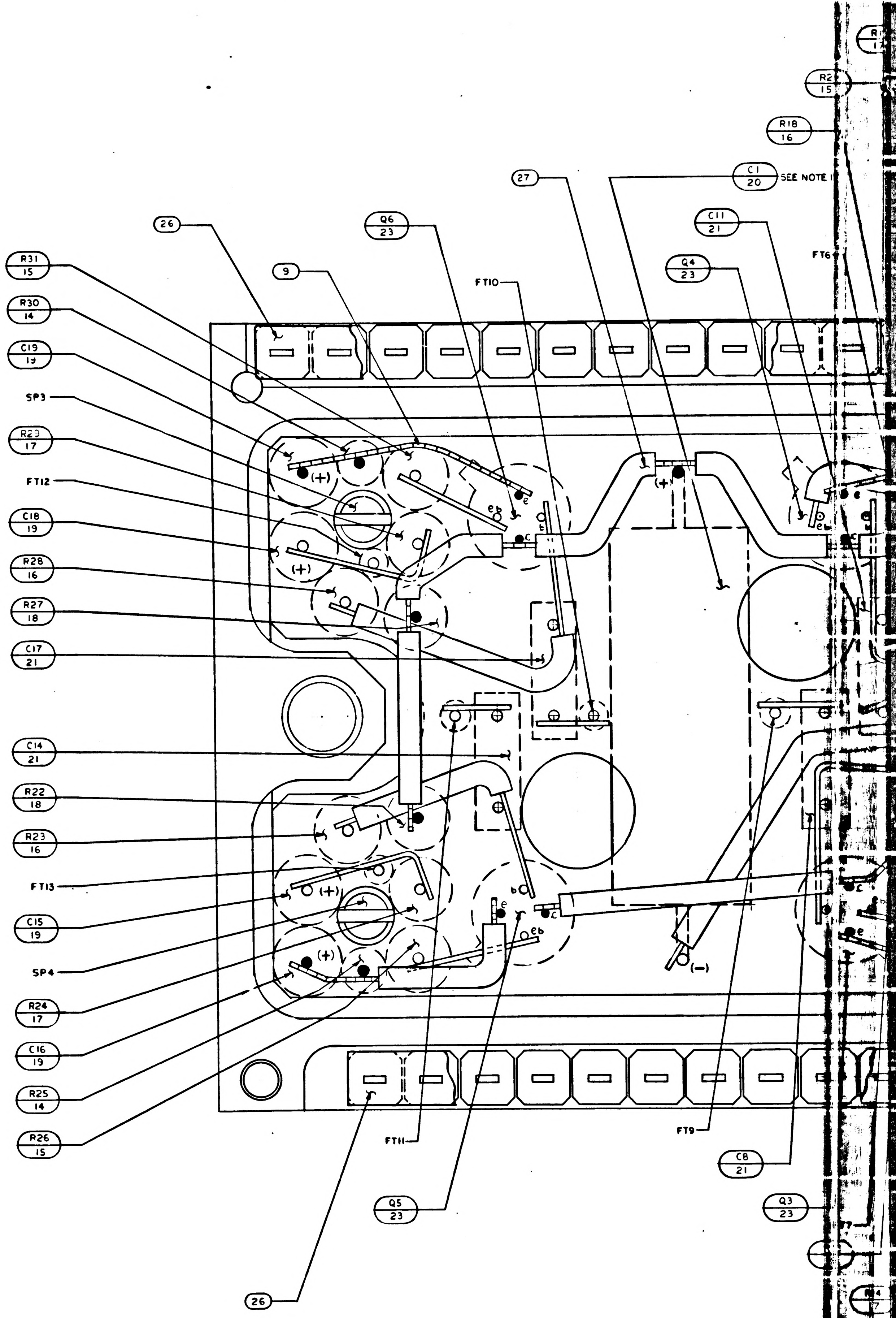
MARKING VIEW
SCALE 2/1

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ± XXX ± .005 XX ± .02 DO NOT SCALE THIS DRAWING
		MATERIAL
1007578		HEAT TREATMENT
1007579		
NEXT ASSY	USED ON	FINAL FINISH
APPLICATION		

1007526	REV LTR	SH
	F	1




10
12
TYP FOR FT1-FT13
27 SEE NOTE 15
6
26 ~~SEE NOTE 12~~
REF
SEE NOTE 16
SEE NOTE 17
1
.000 .060 TYP
7
R30 REF
2
FT5 REF
3
R27 REF
.000 ENCAPSULATION
.015 LIMIT
8
C14 REF
SEE NOTE 8
SEE NOTE 9
T5 REF
C1 REF
SEE NOTE 18
SEE NOTE 18
Q5 REF
SEE NOTE 8
SEE NOTE 9
4
SEE NOTE 7
5
.005 MAX
.015 MAX
.005 MAX
.015 MAX
.000 .030 TYP
SEE NOTE 17
PERMISSIBLE LIMITS
OF ENCAPSULATION
TOP AND 2 SIDES
SEE NOTE 16
11
SEE NOTE 16
REF
25
26
~~SEE NOTE 12~~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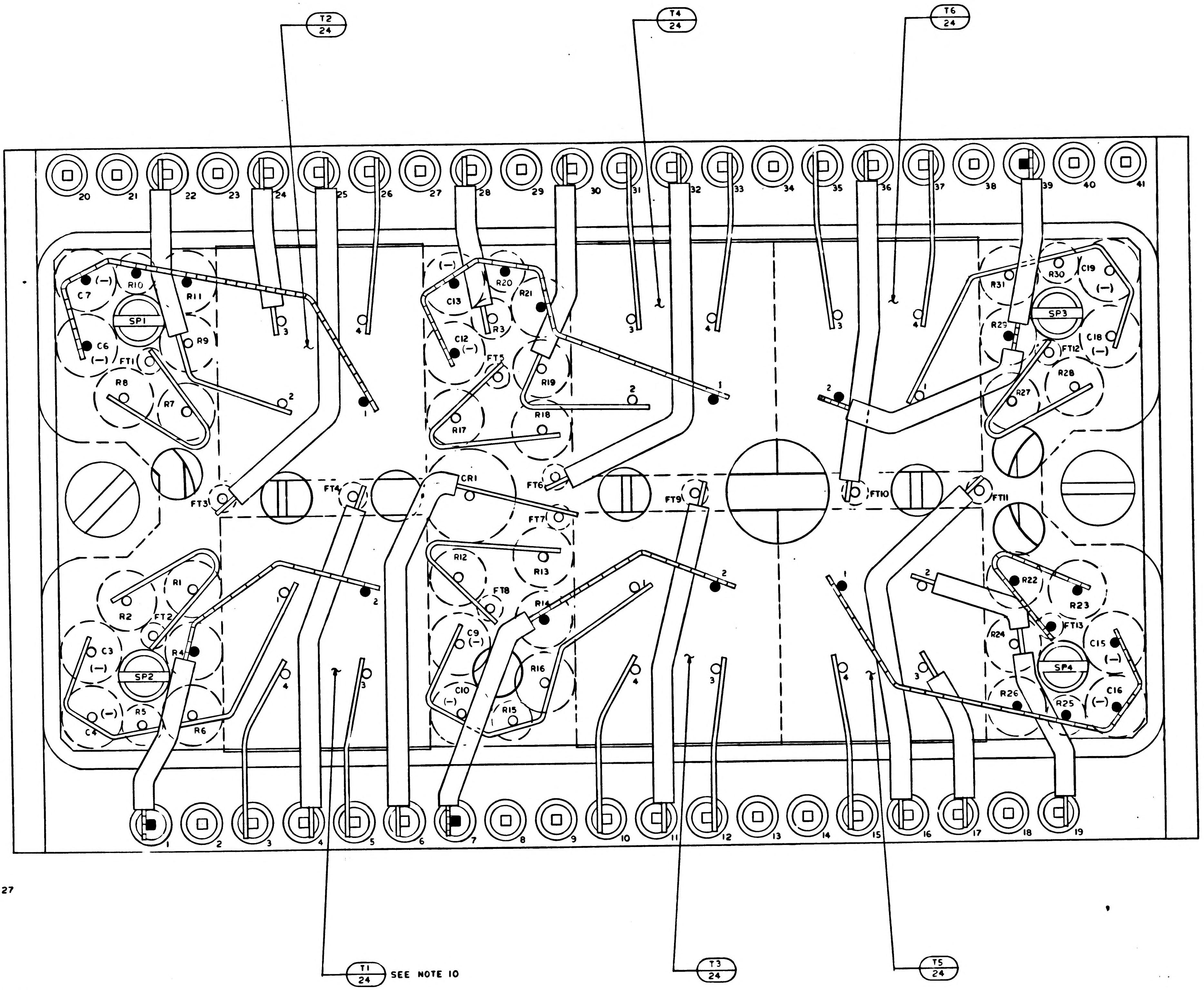
R2 15
R18 16
C1 20 SEE NOTE 1
27
C11 21
FT6
26
Q6 23
Q4 23
R31 15
9
FT10
R30 14
C19 19
SP3
R29 17
FT12
C18 19
R28 16
R27 18
C17 21
(+)
(+)
(+)
e b
e
c
C14 21
R22 18
R23 16
FT13
C15 19
SP4
R24 17
C16 19
R25 14
R26 15
(+)
(+)
(–)
b
c
e
e b
FT11
FT9
C8 21
Q3 23
Q5 23
26
R14 7

1007526	REV LTR F	SH 1


T2
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T4
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T6
24
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21
22
23
24
25
26
27
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29
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31
32
33
34
35
36
37
38
39
40
41
C7
R10
R11
SP1
C6
R9
FT1
R8
R7
FT3
FT4
CR1
C13
R20
R21
C12
R3
FT5
R19
R17
R18
FT6
FT7
FT9
FT10
FT11
R31
R30
C19
R29
SP3
C18
FT12
R28
R27
R1
R2
FT2
C3
SP2
R4
C4
R5
R6
R12
R13
FT8
R14
C9
C10
R15
R16
R22
R23
R24
FT13
C15
SP4
R26
R25
C16
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
T1
24
T3
24
T5
24

SEE NOTE 10

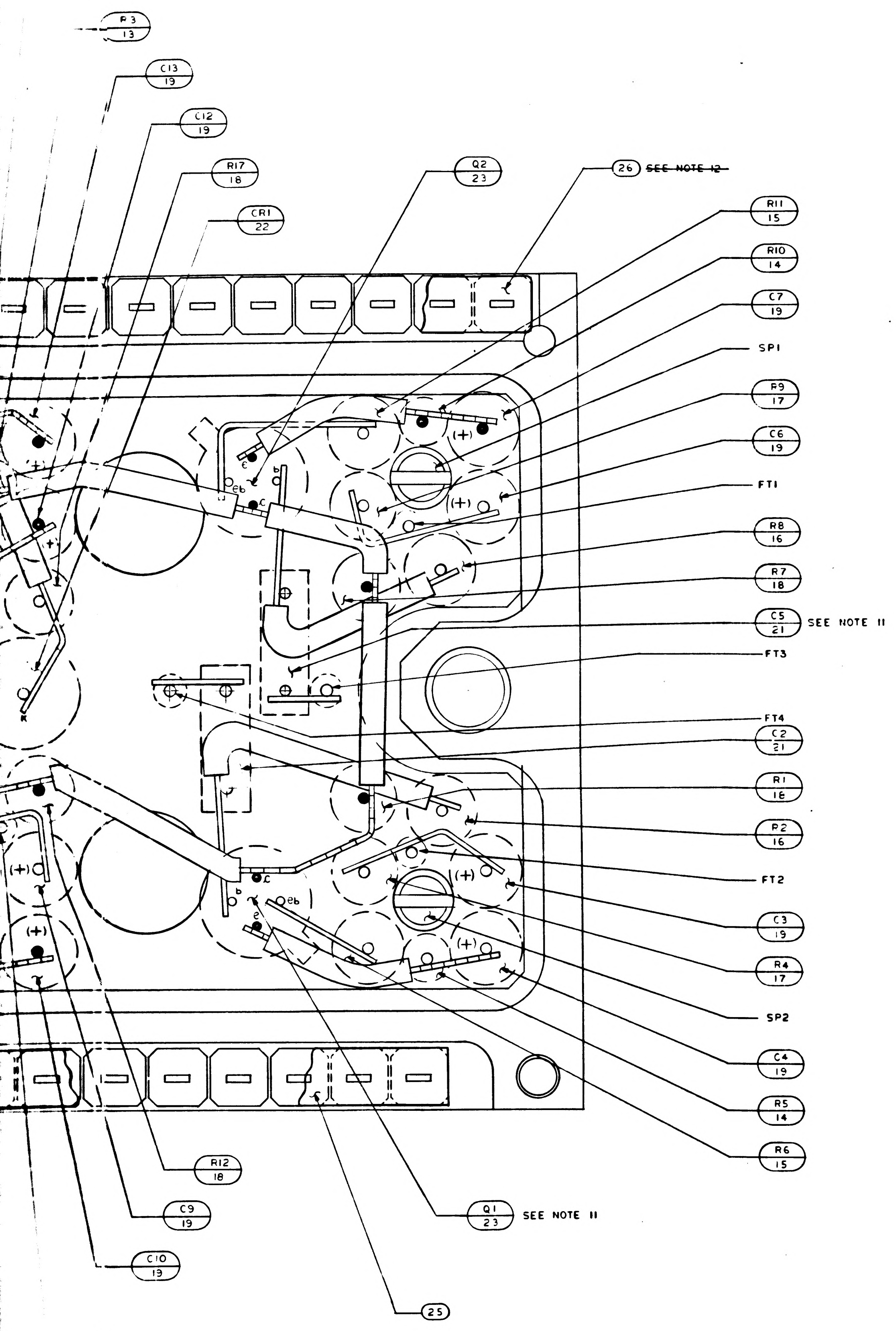
NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. FT DENOTES FEED THRU
4. K DENOTES CATHODE SIDE OF DIODE
5. SP DENOTES SPACER
6. WELD PER ND 1002005
7. ASSEMBLE FIND NO 4 AND FIND 5 PER ND 1002136
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
10. BOND T1 THRU T6 TO FIND NO 2 PER ND 1002004 TYPE I
11. BOND Q1 THRU Q6 AND C1, C2, C5, C8, C11, C14 AND C17 TO FIND NO 3 PER ND 1002004 TYPE I
~~12. BOND FIND NO 25 AND FIND 26 TO FIND NO 4 PER ND 1002237~~
~~13. MARK .100/.060 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN~~
14. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
15. TYPICAL SLEEVING FOR FIND NO 14
16. ENCAPSULATE MODULE PER ND 1002002 BLACK POLYURETHANE FOAM REMOVE ALL FLASHING
17. INDICATED AREAS TO BE FREE OF ENCAPSULATION
18. WORKMANSHIP REQUIREMENTS PER ND 1002069
19. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007526.
~~20. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND1002107 TYPE II.~~
21. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
22. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

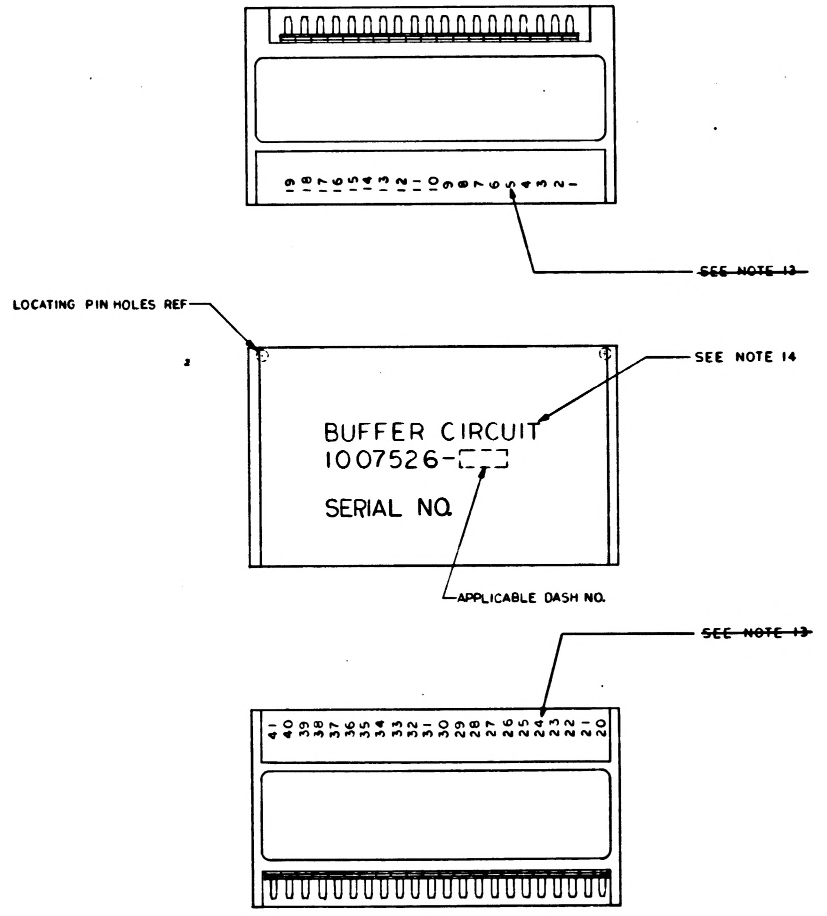
1007526	REV LTR F	SH 1

1/1007526

1007526 G

SYM	REVISIONS DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16623	24 [illegible] 65	DA
B	REVISED PER TDRR 16827	4 MAR 65	
C	REVISED PER TDRR 19412	2 JUN 65	I.K. MEM
D	REVISED PER TDRR 19487	3 JUN 65	EF
E	REVISED PER TDRR 20143	3 JUN 65	
F	REVISED PER TDRR 22948	12 OCT 65	LK
G	REVISED PER TDRR 23888	9 NOV 65	


F3 13
C13 19
C12 19
R17 18
CR1 22
Q2 23
26 ~~SEE NOTE 12~~
R11 15
R10 14
C7 19
SP1
R9 17
C6 19
FT1
R8 16
R7 18
C5 21 SEE NOTE 11
FT3
FT4
C2 21
R1 16
R2 16
FT2
C3 19
R4 17
SP2
C4 19
R5 14
R6 15
R12 18
C9 19
C10 19
Q1 23 SEE NOTE 11
25
FT8
REF
(+)
b
c
e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~~SEE NOTE 13~~
LOCATING PIN HOLES REF
SEE NOTE 14
BUFFER CIRCUIT
1007526-
SERIAL NO.
APPLICABLE DASH NO.
~~SEE NOTE 13~~
41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20

MARKING VIEW
SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009507	SCHEMATIC	REF
AR	1010848-2	WIRE, ELECTRICAL-NICKEL	28
AR	1006776-21	INSULATION SLEEVING	27
3	1008540-11	GASKET, CONNECTOR, MINIATURE	26
1	1008540-8	GASKET CONNECTOR, MINIATURE	25
6	1010759	TRANSFORMER	24
6	1010342	TRANSISTOR	23
1	1010829-13	DIODE	22
6	1010359-29	CAPACITOR	21
1	1006755-84	CAPACITOR	20
12	1006755-69	CAPACITOR	19
6	1010374-29	RESISTOR	18
6	1010374-1	RESISTOR	17
6	1010364-765	RESISTOR	16
6	1010364-719	RESISTOR	15
6	1006750-51	RESISTOR	14
1	1006750-26	RESISTOR	13
~~AR~~	~~1006776-22~~	~~INSULATION SLEEVING~~	12
AR	1006776-20	INSULATION SLEEVING	11
~~AR~~	~~1006757-8~~	~~WIRE, ELECTRICAL .020 DIA~~	10
AR	1006757-1	WIRE, ELECTRICAL .010 X020	9
2	1010485-98	SCREW, FILLISTER HD	8
8	1008161-3	SCREW, CAP SLOTTED HD(SPECIAL)	7
4	1015135-018	SPACER	6
41	1006782-5	CONTACT, WRAPOST MALE MIN	5
41	1006775	INSULATOR, WRAPOST MALE MIN	4
1	1008557	WIRING BOARD, BOTTOM	3
1	1008558	WIRING BOARD, TOP	2
1	1007595	FRAME	1

011 LIST OF MATERIALS

1007578	
1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ± .005 XX ± .02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO.
CONTRACT
DRAWN DATE
CHECKED 30SEP64
APPROVAL 2OCT64
APPROVAL 10-8-64
NASA APPROVAL 10-14-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

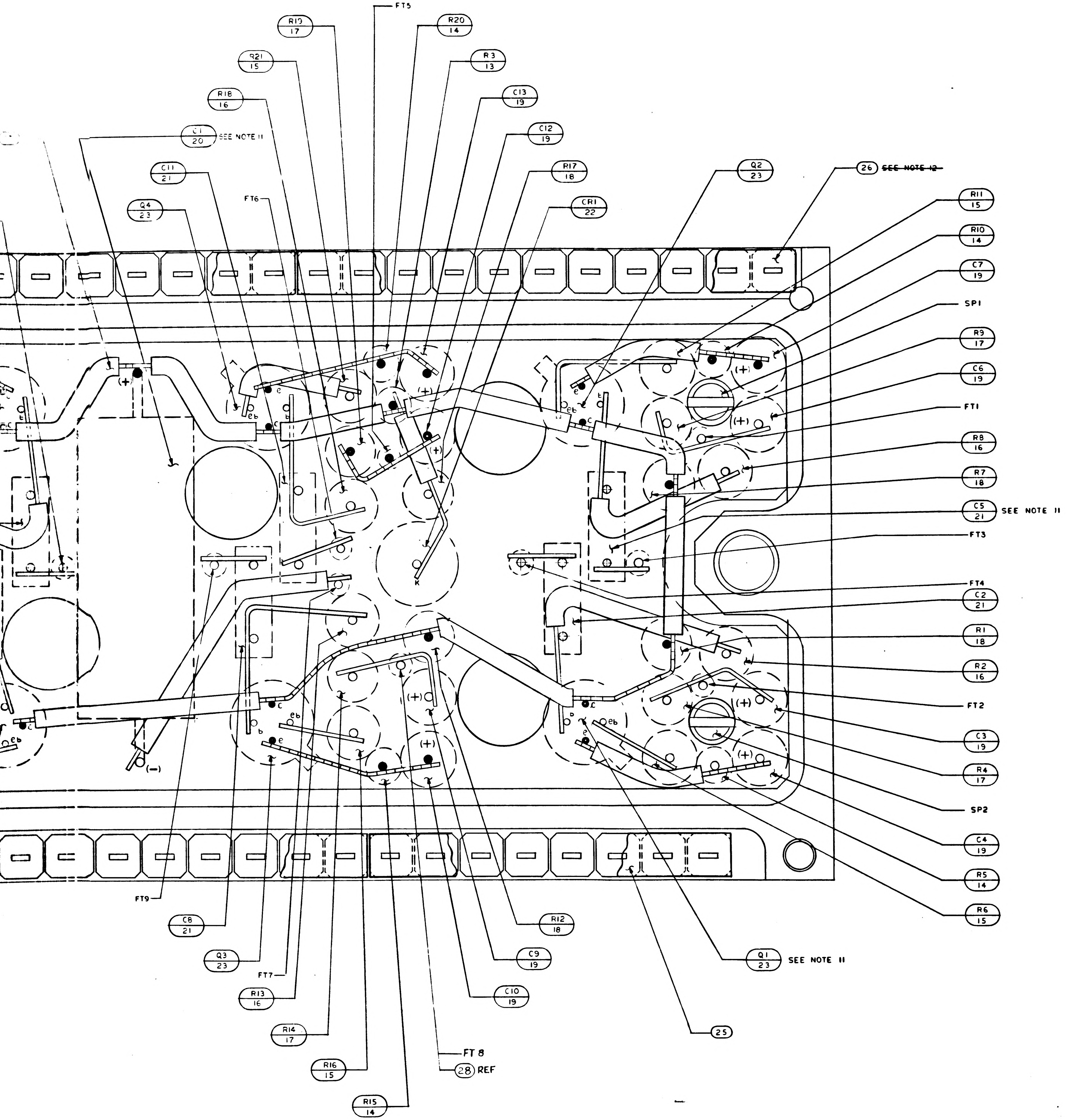
BUFFER CIRCUIT
ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007526
SCALE 10/1
WT
SHEET 1 OF 1

1007526 REV LTR G SH 1

4/1007526

5 4 3 2


R19 17
R20 14
FT5
R21 15
R3 13
R18 16
C13 19
C1 20 SEE NOTE 11
C12 19
C11 21
R17 18
Q4 23
FT6
CR1 22
Q2 23
26 ~~SEE NOTE 12~~
R11 15
R10 14
C7 19
SP1
R9 17
C6 19
FT1
R8 16
R7 18
C5 21 SEE NOTE 11
FT3
FT4
C2 21
R1 18
R2 16
FT2
C3 19
R4 17
SP2
C4 19
R5 14
R6 15
Q1 23 SEE NOTE 11
25
R12 18
C9 19
C10 19
FT 8
28 REF
R15 14
R16 15
R14 17
R13 16
FT7
Q3 23
C8 21
FT9
(+)
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c
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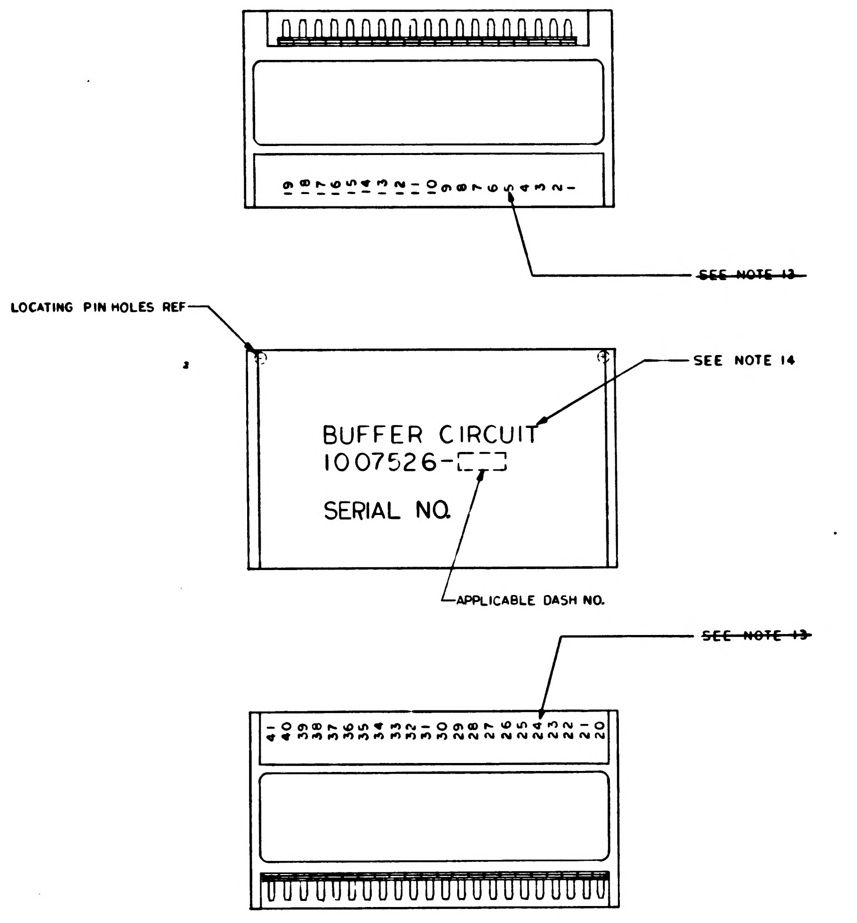
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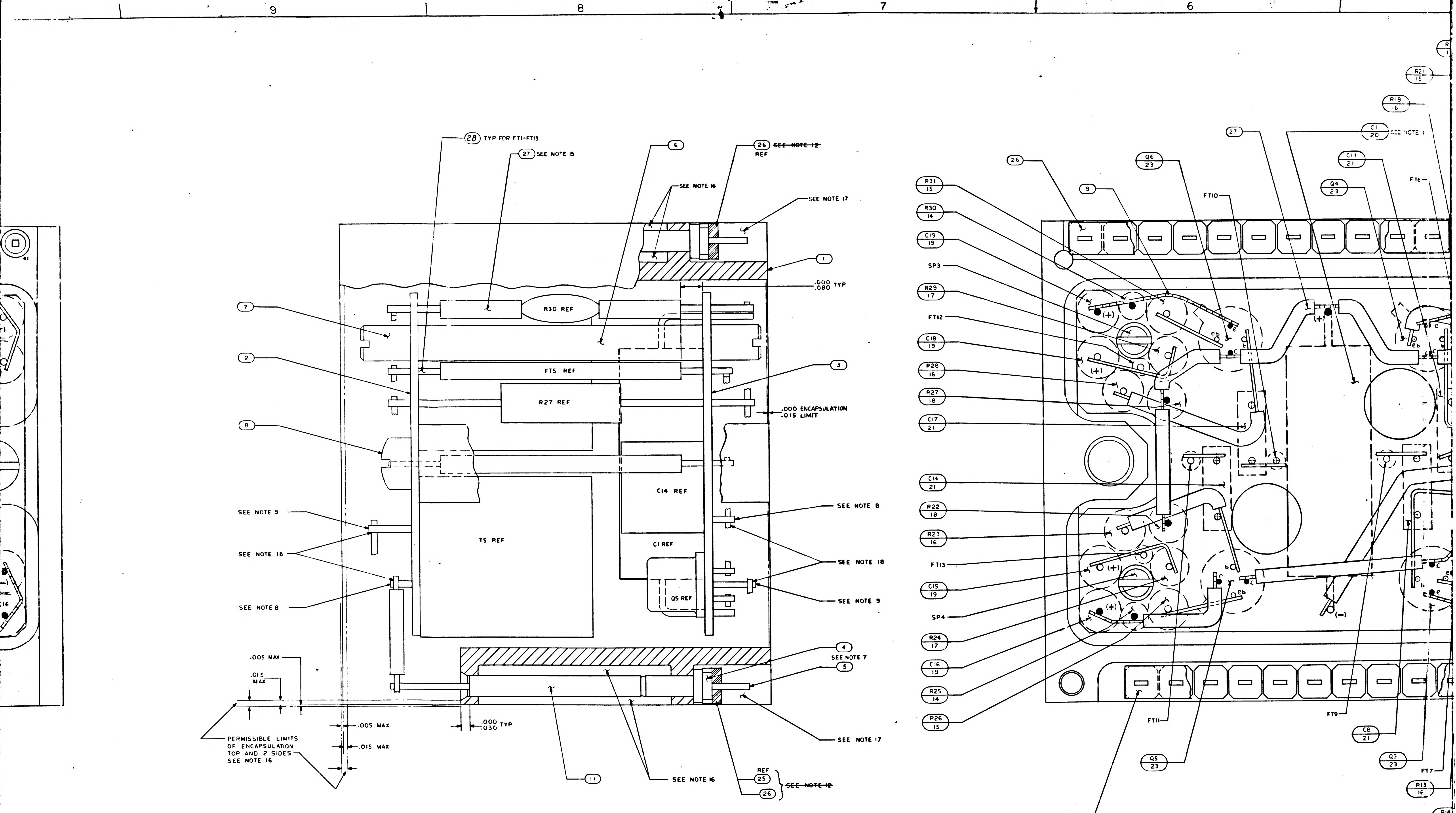
~~SEE NOTE 13~~
LOCATING PIN HOLES REF
SEE NOTE 14
BUFFER CIRCUIT
1007526-
SERIAL NO.
APPLICABLE DASH NO.
~~SEE NOTE 13~~
41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20

MARKING VIEW
SCALE 2/1

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ± XXX ± .005 XX ± .02 DO NOT SCALE THIS DRAWING
		MATERIAL
1007578		
1007579		HEAT TREATMENT
NEXT ASSY	USED ON	FINAL FINISH
APPLICATION		

5 4 3 2


9
8
7
6
28 TYP FOR FT1-FT13
27 SEE NOTE 15
6
26 ~~SEE NOTE 12~~ REF
SEE NOTE 16
SEE NOTE 17
1
.000 .080 TYP
7
R30 REF
FT5 REF
2
3
R27 REF
.000 ENCAPSULATION .015 LIMIT
8
C14 REF
SEE NOTE 8
SEE NOTE 9
T5 REF
C1 REF
SEE NOTE 18
SEE NOTE 18
SEE NOTE 8
Q5 REF
SEE NOTE 9
.005 MAX
.015 MAX
4
SEE NOTE 7
5
PERMISSIBLE LIMITS OF ENCAPSULATION TOP AND 2 SIDES SEE NOTE 16
.005 MAX
.015 MAX
.000 .030 TYP
SEE NOTE 17
11
SEE NOTE 16
REF 25
26
~~SEE NOTE 12~~
41
C16
R21 15
R18 16
C1 20 SEE NOTE 1
27
C11 21
26
Q6 23
Q4 23
FT6
R31 15
9
FT10
R30 14
C19 19
SP3
R29 17
FT12
C18 19
R28 16
R27 18
C17 21
C14 21
R22 18
R23 16
FT13
C15 19
SP4
R24 17
C16 19
R25 14
R26 15
FT11
FT9
C8 21
Q5 23
Q3 23
FT7
R13 16
R14 17
26
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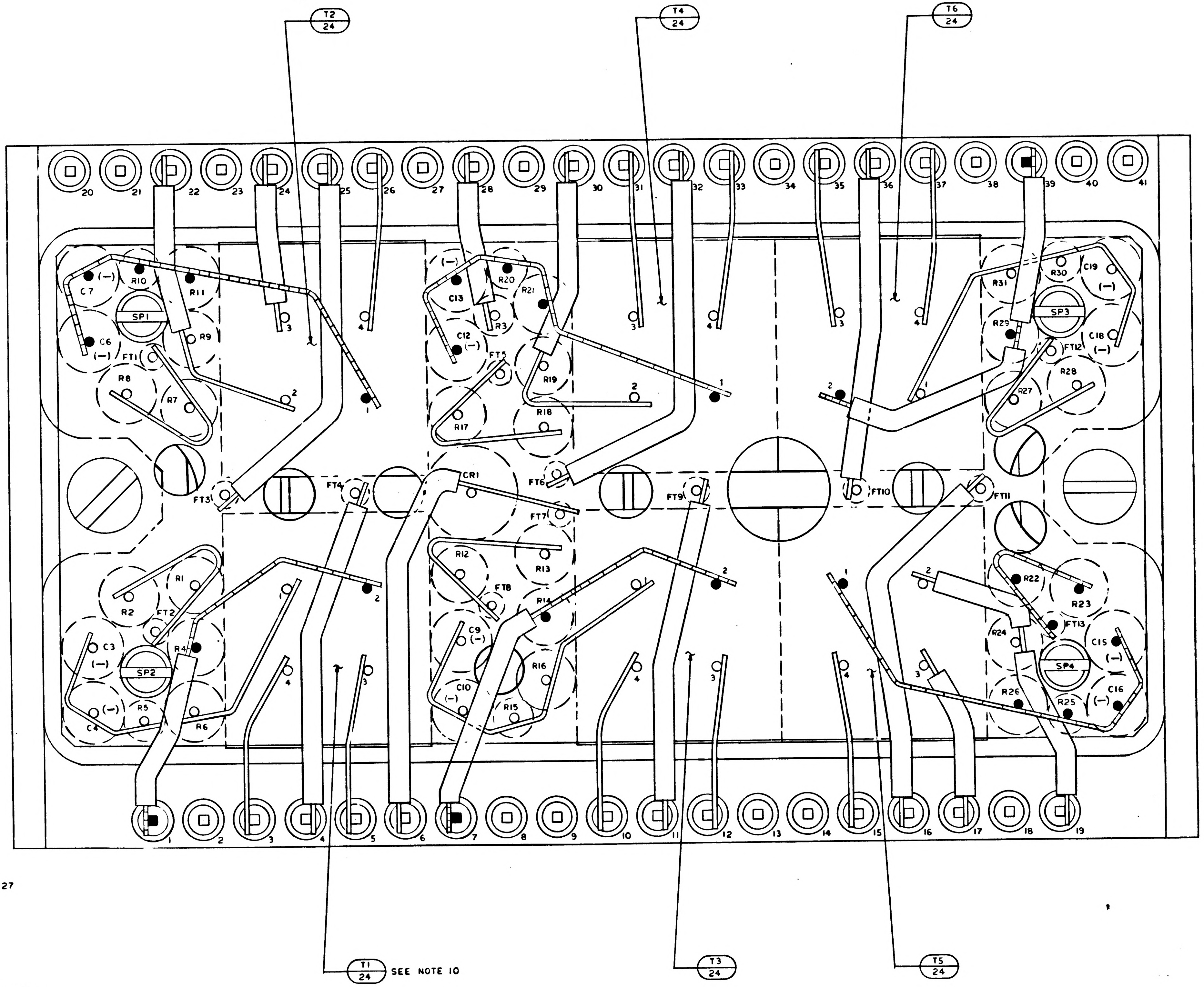
1007526 REV LTR 6 SH 1

9 8 7 6

27/1007526


T2
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T4
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T6
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34
35
36
37
38
39
40
41
C7
(−)
R10
R11
SP1
C6
(−)
FT1
R9
R8
R7
(−)
C13
R20
R21
C12
(−)
R3
FT5
R19
R18
R17
R31
R30
C19
(−)
SP3
R29
C18
(−)
FT12
R28
R27
FT3
FT4
CR1
FT6
FT7
FT9
FT10
FT11
R1
R2
FT2
C3
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SP2
R4
C4
(−)
R5
R6
R12
R13
FT8
R14
C9
(−)
C10
(−)
R16
R15
R22
R23
FT13
R24
C15
(−)
SP4
R26
R25
C16
(−)
1
2
3
4
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6
7
8
9
10
11
12
13
14
15
16
17
18
19
T1
24
SEE NOTE 10
T3
24
T5
24

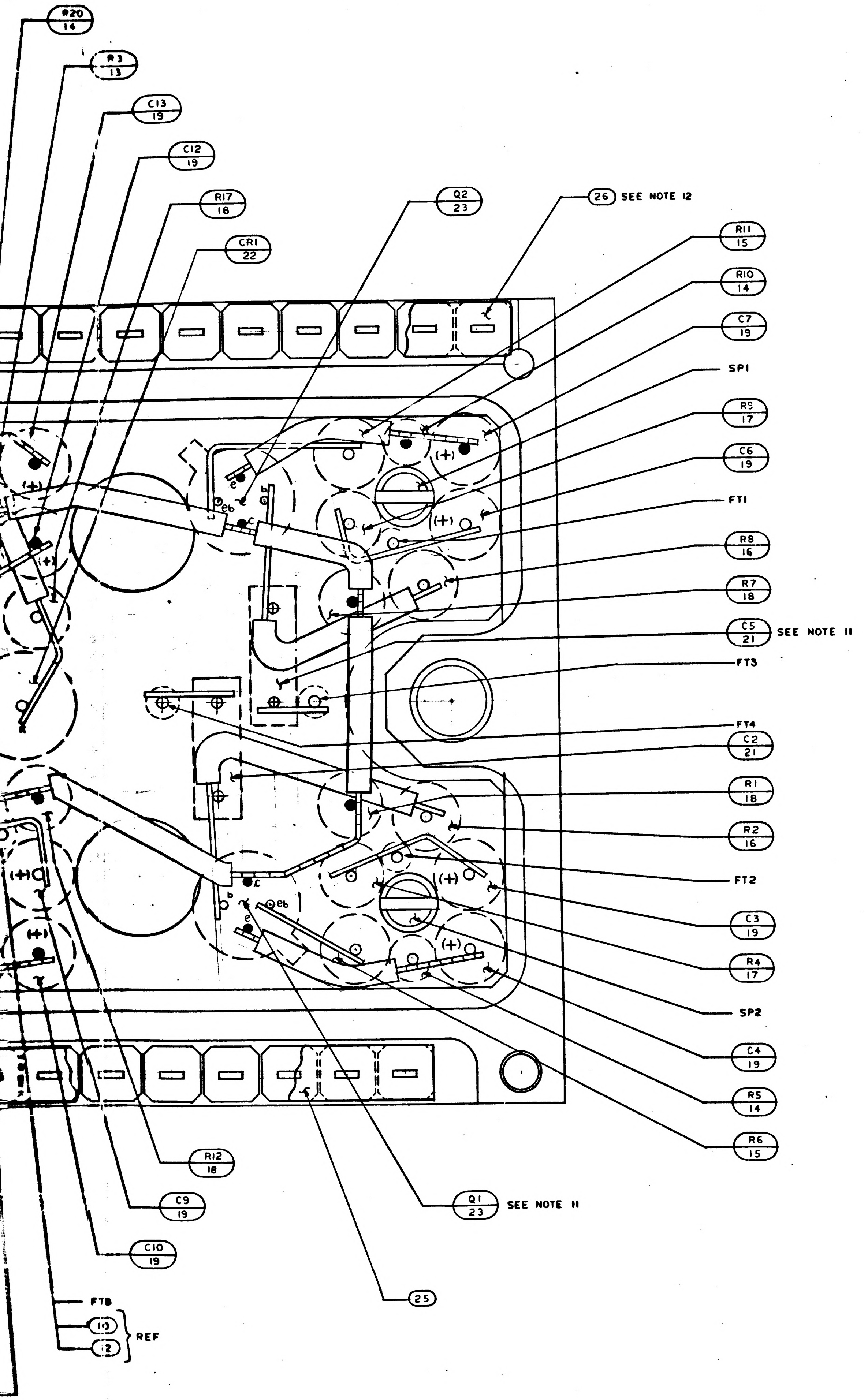
NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. FT DENOTES FEED THRU
4. K DENOTES CATHODE SIDE OF DIODE
5. SP DENOTES SPACER
6. WELD PER ND 1002005
7. ASSEMBLE FIND NO 4 AND FIND 5 PER ND 1002136
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
10. BOND T1 THRU T6 TO FIND NO 2 PER ND 1002004 TYPE I
11. BOND Q1 THRU Q6 AND C1,C2,C5,C8,C11,C14 AND C17 TO FIND NO 3 PER ND 1002004 TYPE I
~~12. BOND FIND NO 25 AND FIND 26 TO FIND NO 4 PER ND 1002237~~
~~13. MARK .100/.060 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN~~
14. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
15. TYPICAL SLEEVING FOR FIND NO 14
16. ENCAPSULATE MODULE PER ND 1002002 BLACK POLYURETHANE FOAM REMOVE ALL FLASHING
17. INDICATED AREAS TO BE FREE OF ENCAPSULATION
18. WORKMANSHIP REQUIREMENTS PER ND 1002069
19. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007526.
~~20. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND1002107 TYPE II.~~
21. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
22. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

1007526	REV LT	SH
	G	1

1/1007526

SYM	DESCRIPTION	DATE	APPROVAL

REVISIONS


R20 14
R3 13
C13 19
C12 19
R17 18
CR1 22
Q2 23
26 SEE NOTE 12
R11 15
R10 14
C7 19
SP1
R9 17
C6 19
FT1
R8 16
R7 18
C5 21 SEE NOTE 11
FT3
FT4
C2 21
R1 18
R2 16
FT2
C3 19
R4 17
SP2
C4 19
R5 14
R6 15
R12 18
Q1 23 SEE NOTE 11
C9 19
C10 19
25
FT8
10
2
REF
(+)
e
b
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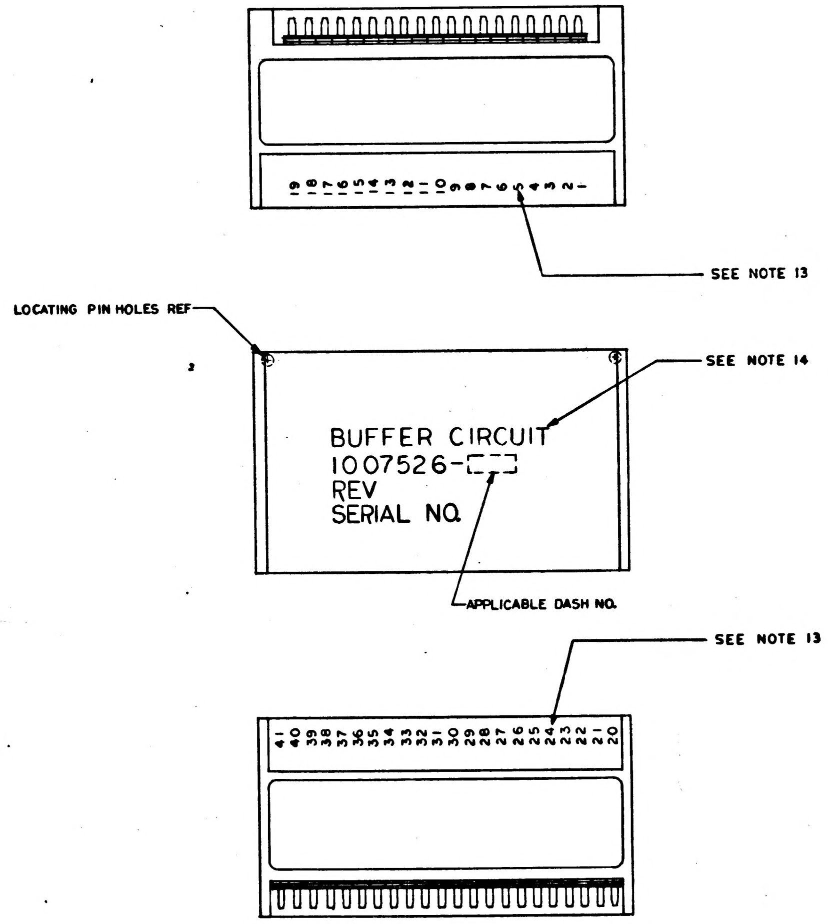
eb


19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
SEE NOTE 13
LOCATING PIN HOLES REF
SEE NOTE 14
BUFFER CIRCUIT
1007526-
REV
SERIAL NO.
APPLICABLE DASH NO.
SEE NOTE 13
41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20

MARKING VIEW
SCALE 2/1

	1009507	SCHEMATIC	REF
AR	1006776-21	INSULATION SLEEVING	27
3	1008540-11	GASKET, CONNECTOR, MINIATURE	26
1	1008540-8	GASKET CONNECTOR, MINIATURE	25
6	1010759	TRANSFORMER	24
6	1010342	TRANSISTOR	23
1	1010265-13	DIODE	22
6	1010359-29	CAPACITOR	21
1	1006755-84	CAPACITOR	20
12	1006755-69	CAPACITOR	19
6	1010374-29	RESISTOR	18
6	1010374-1	RESISTOR	17
6	1010364-765	RESISTOR	16
6	1010364-719	RESISTOR	15
6	1006750-51	RESISTOR	14
1	1006750-26	RESISTOR	13
AR	1006776-22	INSULATION SLEEVING	12
AR	1006776-20	INSULATION SLEEVING	11
AR	1006757-8	WIRE ELECTRICAL .020 DIA	10
AR	1006757-1	WIRE, ELECTRICAL .010 X.020	9
2	1010485-98	SCREW, FILLISTER HD	8
8	1008161-3	SCREW, CAP SLOTTED HD (SPECIAL)	7
4	1015135-018	SPACER	6
41	1006782-5	CONTACT, WRAPOST MALE MIN	5
41	1006775	INSULATOR, WRAPOST MALE MIN	4
1	1008557	WIRING BOARD, BOTTOM	3
1	1008558	WIRING BOARD, TOP	2
1	1007595	FRAME	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
011	LIST OF MATERIALS		

1007526

NEXT ASSY	USED ON
1007578	
1007579	
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ± .005 XX ± .02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

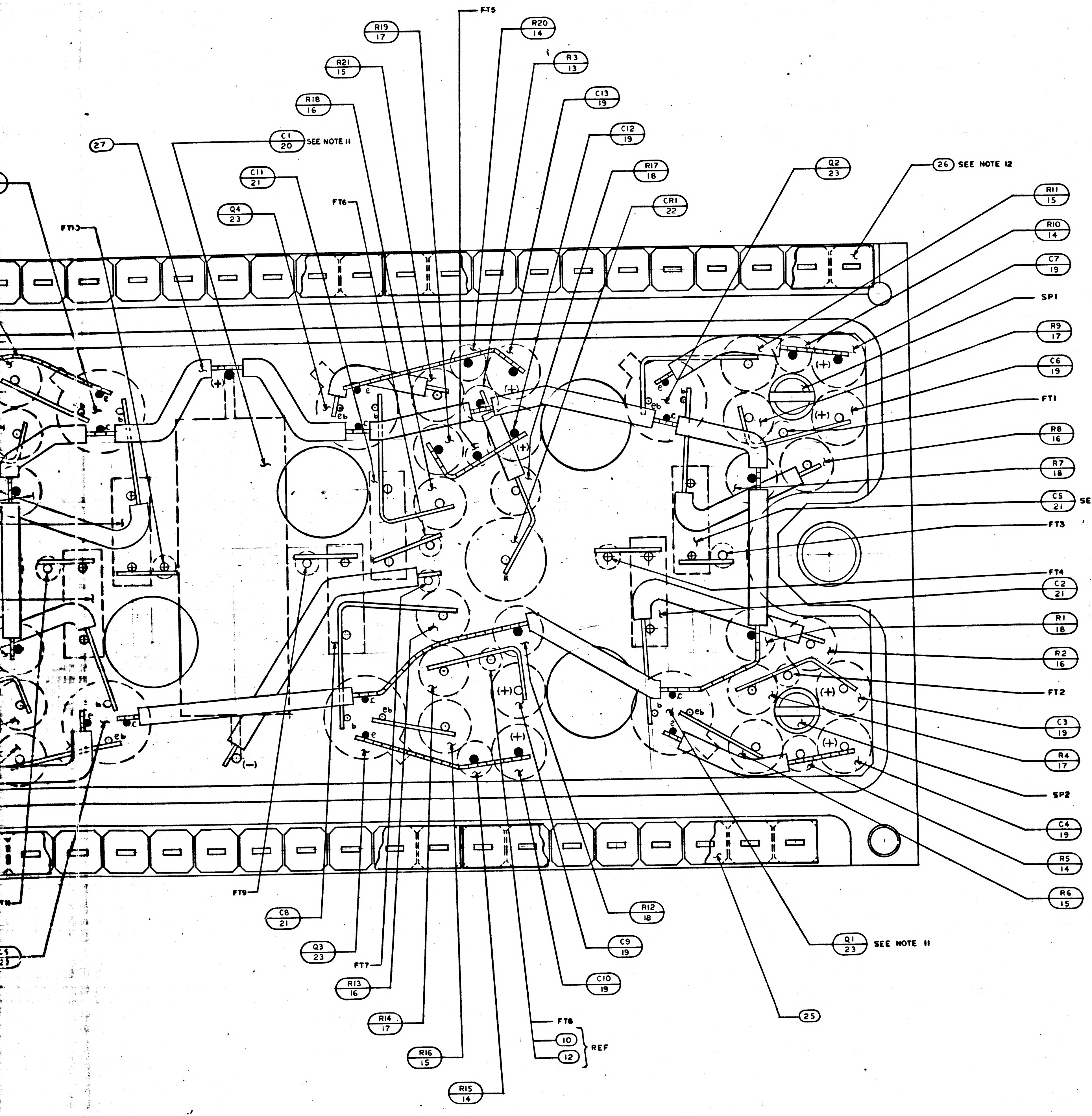
MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DRAWN DATE
CHECKED 30 SEP 64
APPROVAL 7 OCT 64
APPROVAL 10-8-64
NASA APPROVAL W. J. Rhine 10-14-64
MIT APPROVAL D. Hanley

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BUFFER CIRCUIT
ASSEMBLY

CODE IDENT NO.
SIZE J
NASA DRAWING NO. 1007526
SCALE 10/1
WT
SHEET 1 OF 1

F4


R19
17
R20
14
FT5
R3
13
R21
15
C13
19
R18
16
C12
19
C1
20
SEE NOTE 11
27
R17
18
C11
21
CR1
22
Q4
23
FT6
FT10
Q2
23
26 SEE NOTE 12
R11
15
R10
14
C7
19
SP1
R9
17
C6
19
FT1
R8
16
R7
18
C5
21
SEE NOTE 11
FT3
FT4
C2
21
R1
18
R2
16
FT2
C3
19
R4
17
SP2
C4
19
R5
14
R6
15
Q1
23
SEE NOTE 11
25
R12
18
C9
19
C10
19
FT8
10
12
REF
R15
14
R16
15
R14
17
R13
16
FT7
Q3
23
C8
21
FT9
(+)
(-)
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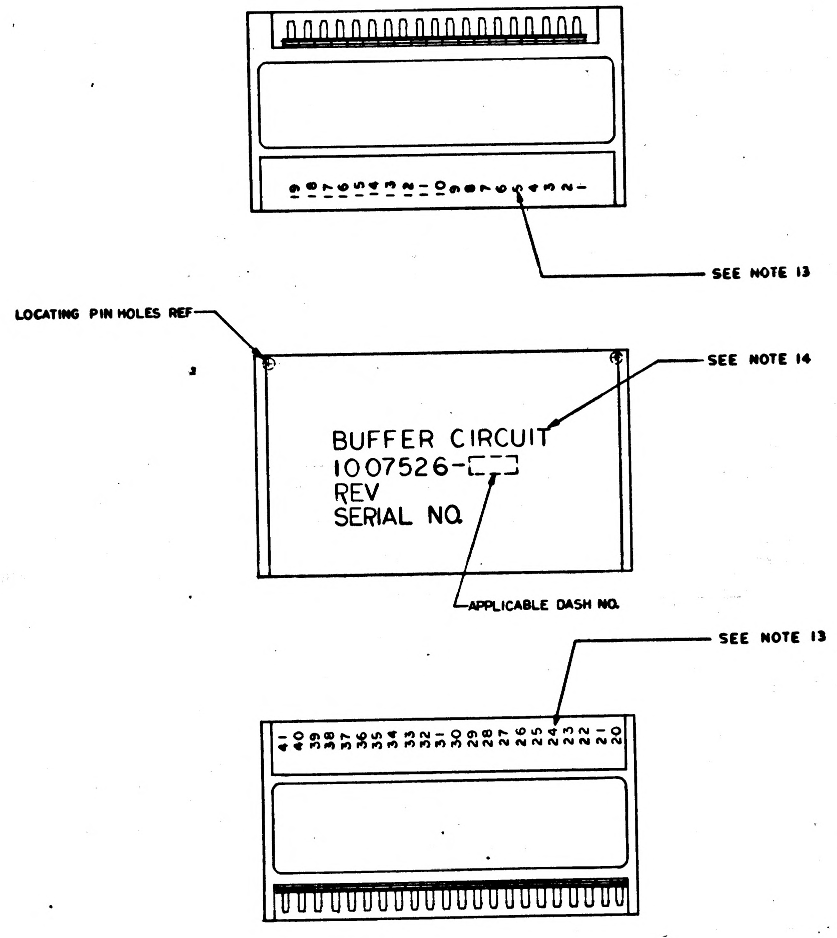
eb


SEE NOTE 13
LOCATING PIN HOLES REF
SEE NOTE 14
BUFFER CIRCUIT
1007526-[ ]
REV
SERIAL NO.
APPLICABLE DASH NO.
SEE NOTE 13
41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20

MARKING VIEW
SCALE 2/1

NEXT ASSY	USED ON
1007578	
1007579	

APPLICATION

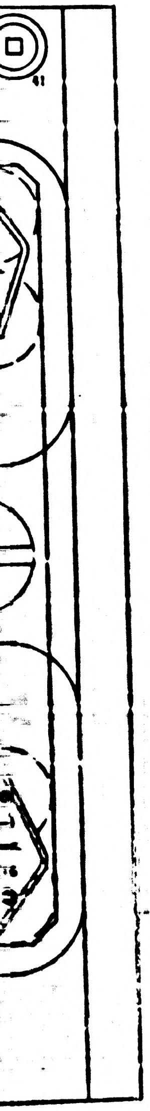
UNLESS OTHERWISE SP
DIMENSIONS ARE IN
TOLERANCES ON
FRACTIONS
± XX

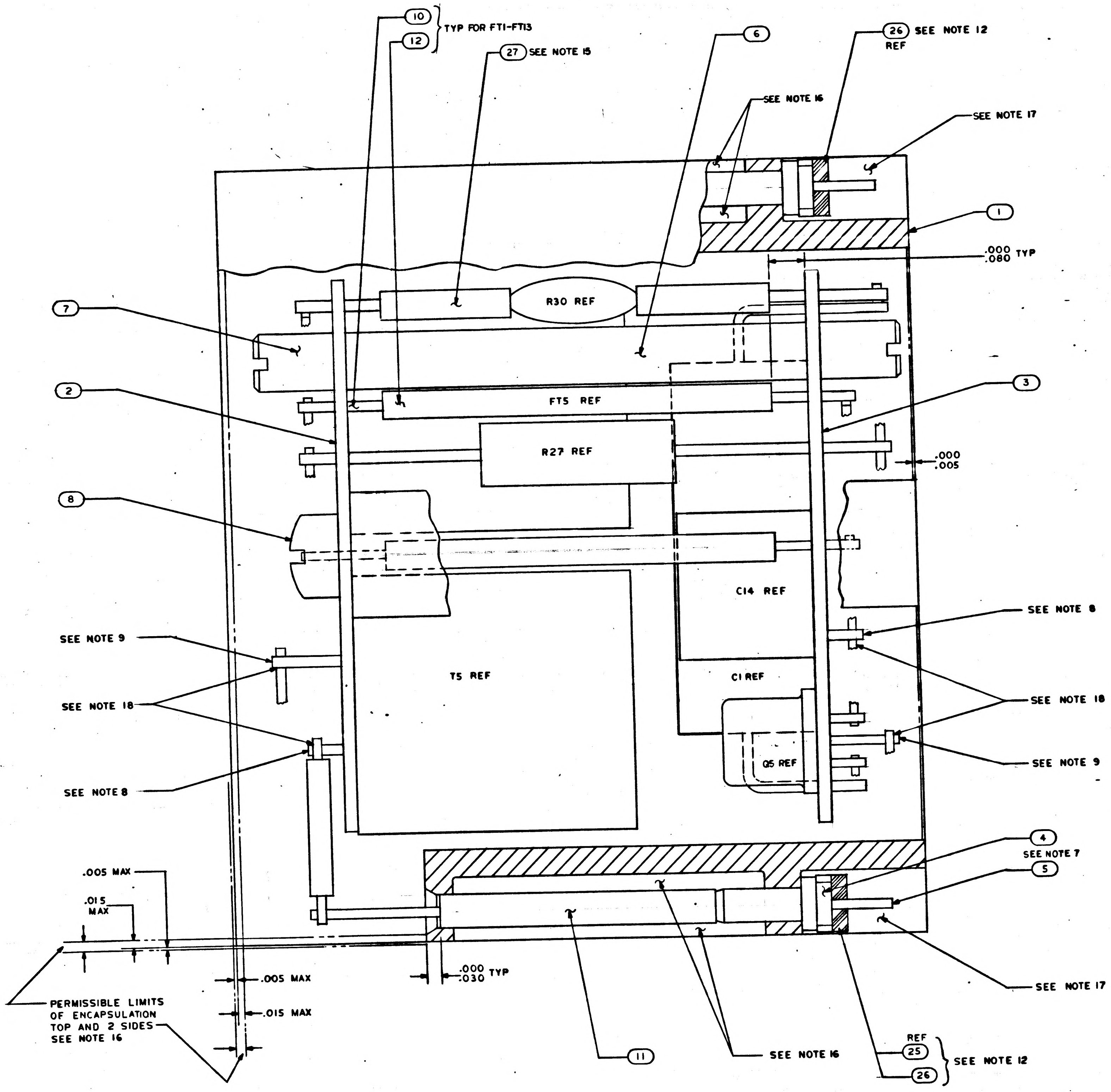
MASTER

1007526

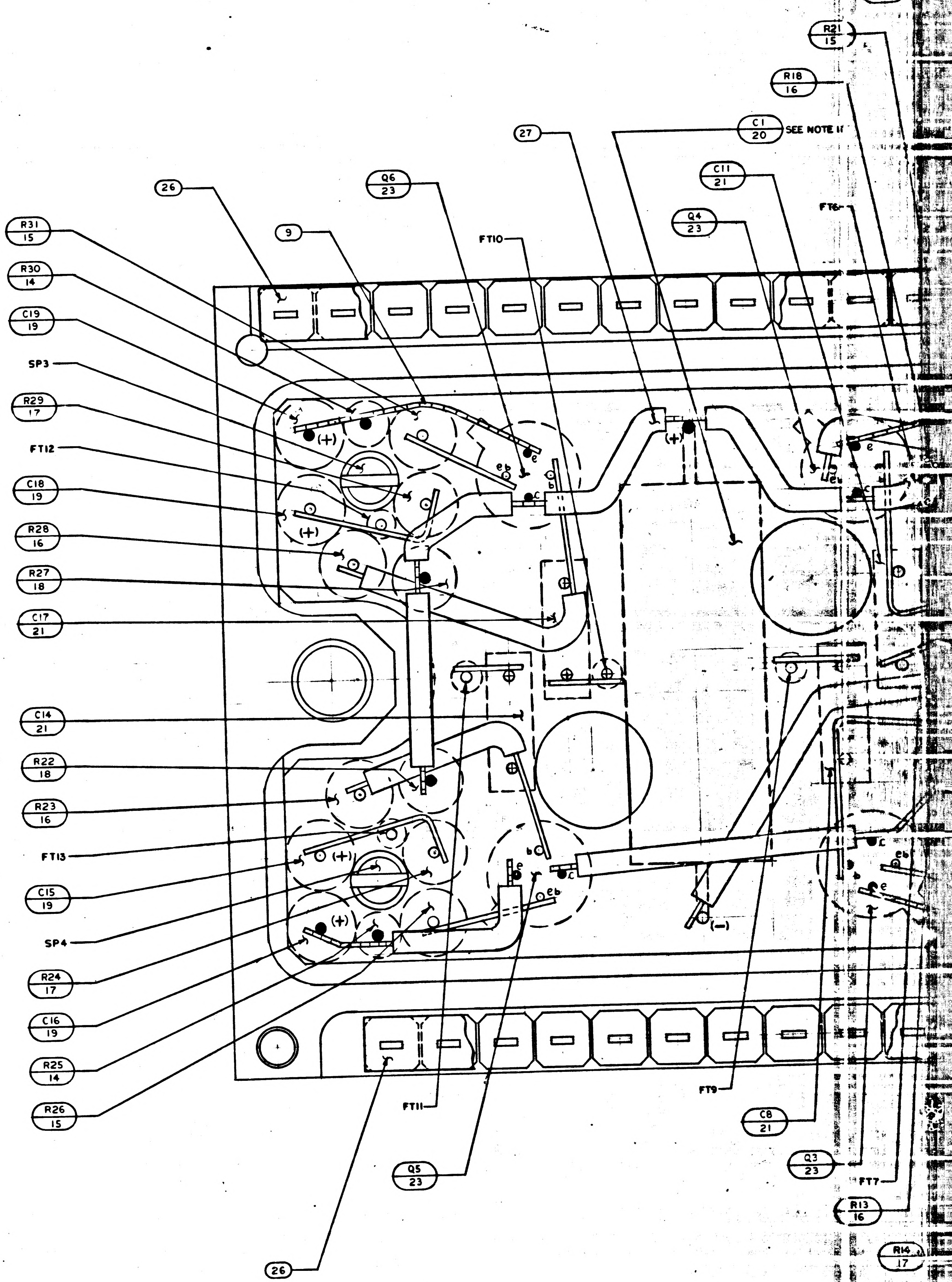
INCHES

F3





10
12
TYP FOR FT1-FT13
27 SEE NOTE 15
6
26 SEE NOTE 12 REF
SEE NOTE 16
SEE NOTE 17
1
.000 .080 TYP
R30 REF
7
2
FT5 REF
3
R27 REF
.000 .005
8
C14 REF
SEE NOTE 8
T5 REF
C1 REF
SEE NOTE 9
SEE NOTE 18
SEE NOTE 18
SEE NOTE 8
Q5 REF
SEE NOTE 9
4
SEE NOTE 7
5
.005 MAX
.015 MAX
.005 MAX
.015 MAX
.000 .030 TYP
SEE NOTE 17
PERMISSIBLE LIMITS OF ENCAPSULATION TOP AND 2 SIDES SEE NOTE 16
11
SEE NOTE 16
REF 25
26
SEE NOTE 12



R19 17
R21 15
R18 16
C1 20 SEE NOTE 11
27
C11 21
26
Q6 23
Q4 23
FT6
R31 15
9
FT10
R30 14
C19 19
SP3
R29 17
FT12
C18 19
R28 16
R27 18
C17 21
C14 21
R22 18
R23 16
FT13
C15 19
SP4
R24 17
C16 19
R25 14
R26 15
FT11
FT9
C8 21
Q3 23
FT7
R13 16
R14 17
Q5 23
26
(+)
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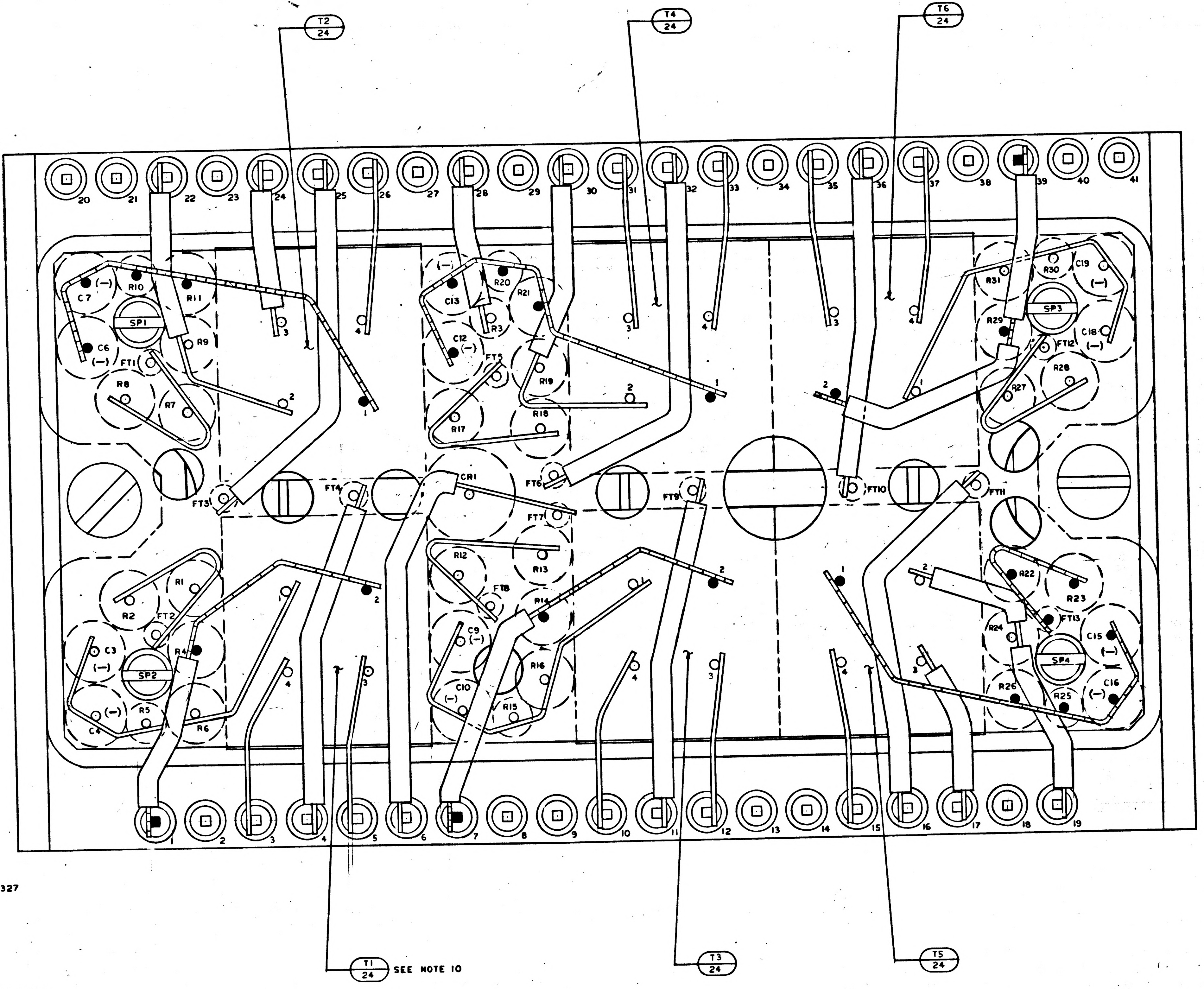
T2
24
T4
24
T6
24
T1
24
SEE NOTE 10
T3
24
T5
24
20
21
22
23
24
25
26
27
28
29
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31
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34
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41
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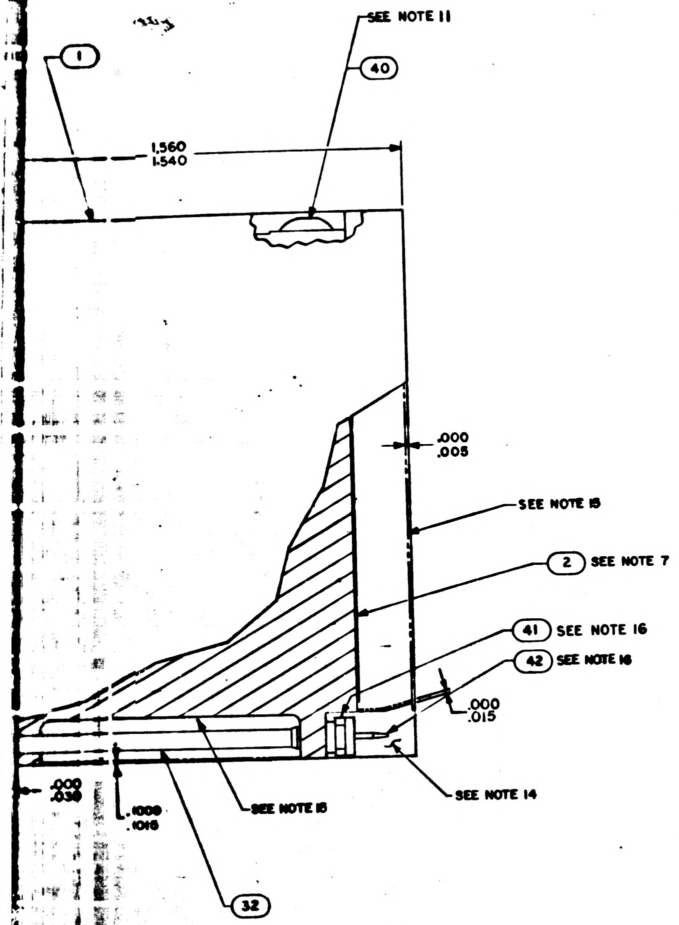
11
12
13
14
15
16
17
18
19
C7
R10
R11
SP1
C6
R9
FT1
R8
R7
FT3
FT4
C13
R20
R21
R3
C12
FT5
R19
R17
R18
CR1
FT6
FT7
R12
R13
FT8
R14
C9
C10
R16
R15
FT9
FT10
FT11
R31
R30
C19
SP3
R29
C18
FT12
R28
R27
R1
R2
FT2
C3
R4
SP2
R5
R6
C4
R22
R23
FT13
R24
C15
SP4
C16
R26
R25
(-)
K

NOTES

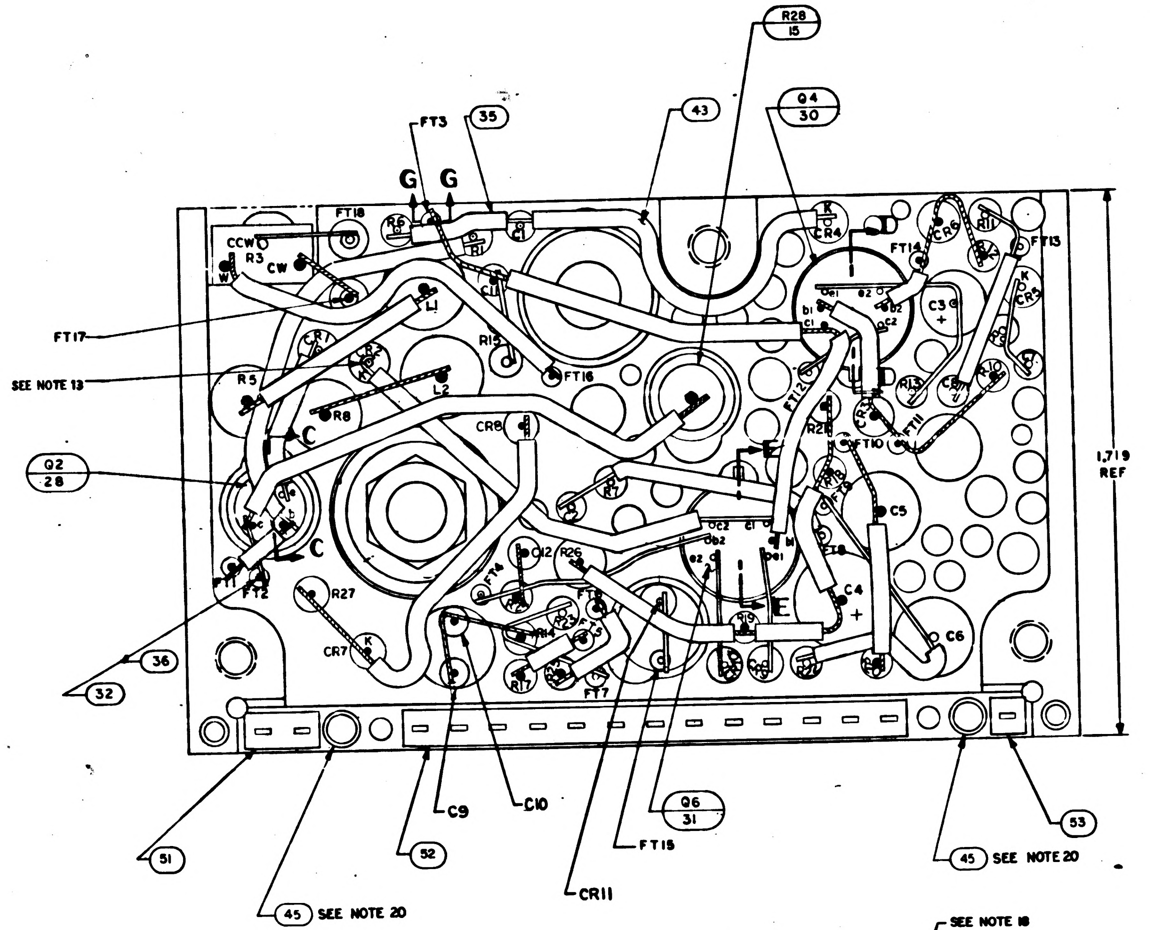
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. FT DENOTES FEED THRU
4. K DENOTES CATHODE SIDE OF DIODE
5. SP DENOTES SPACER
6. WELD PER ND 1002005
7. ASSEMBLE FIND NO 4 AND FIND 5 PER ND 1002136
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING
9. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING
10. BOND T1 THRU T6 TO FIND NO 2 PER ND 1002004 TYPE I
11. BOND Q1 THRU Q6 AND C1, C2, C5, C8, C11, C14 AND C17 TO FIND NO 3 PER ND 1002004 TYPE I
12. BOND FIND NO 25 AND FIND 26 TO FIND NO 4 PER ND 1002237
13. MARK .100/.060 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
14. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
15. TYPICAL SLEEVING FOR FIND NO 14
16. ENCAPSULATE MODULE PER ND 1002002 BLACK POLYURETHANE FOAM REMOVE ALL FLASHING
17. INDICATED AREAS TO BE FREE OF ENCAPSULATION
18. WORKMANSHIP REQUIREMENTS PER ND 1002069

1007526

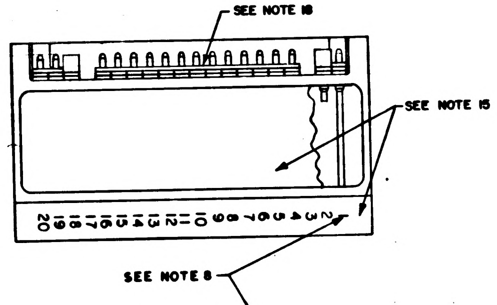
REVISIONS 10699			
SYM	DESCRIPTION	DATE	APPRD ✓
A	REVISED PER TDRR 5962	9 FEB 65	



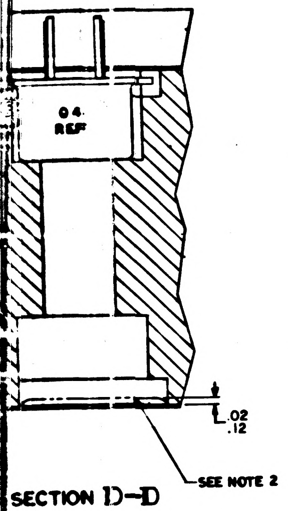
SEE NOTE 11
①
40
1.560
1.540
.000
.005
SEE NOTE 15
2 SEE NOTE 7
41 SEE NOTE 16
42 SEE NOTE 16
.000
.015
SEE NOTE 14
.000
.030
.1000
.1015
SEE NOTE 15
32



R28
15
FT3
35
43
Q4
30
G
G
FT18
R6
R1
C1
CR4
FT14
CR6
R11
FT13
CCW
R3
CW
W
L1
C11
C3
CR5
FT17
CR1
R2
R15
FT16
SEE NOTE 13
R5
L2
R8
CR8
FT12
R13
CR9
R10
R21
FT11
FT10
C
1.719
REF
Q2
28
R7
C2
C5
C
C12
R26
FT1
FT2
R27
FT4
R24
FT8
R14
R23
FT5
E
C4
CR7
R17
FT7
R19
R22
C6
36
32
51
45 SEE NOTE 20
52
C9
C10
Q6
31
FT15
CR11
53
45 SEE NOTE 20

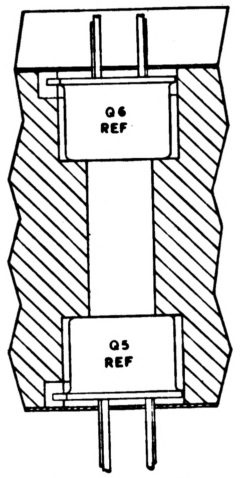


SEE NOTE 18
SEE NOTE 15
20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
SEE NOTE 8



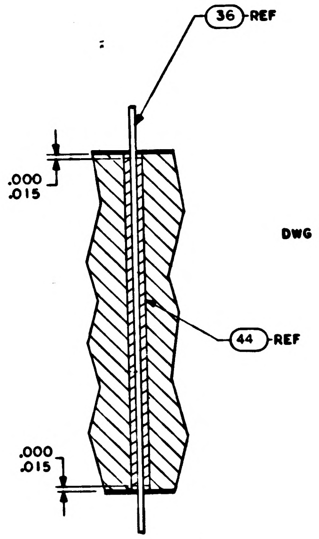
Q4
REF
Q5
.02
.12
SEE NOTE 2

SECTION D–D



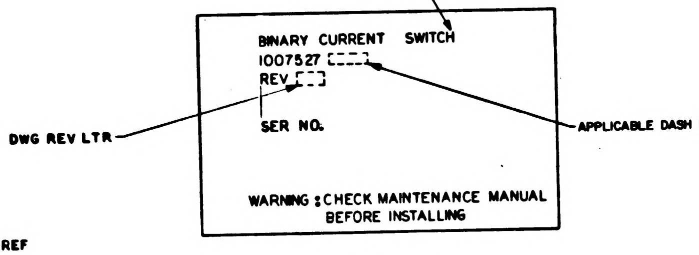
Q6
REF
Q5
REF

SECTION E–E



36 REF
.000
.015
44 REF
.000
.015

SECTION G-G



DWG REV LTR
APPLICABLE DASH NO.

BINARY CURRENT SWITCH
1007527
REV
SER NO.

WARNING : CHECK MAINTENANCE MANUAL
BEFORE INSTALLING

MARKING VIEW
SCALE 2/1

QUANTITY REQUIRED					LIST OF MATERIALS		
			011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
			1		1008540-1	GASKET, CONNECTOR MINIATURE	53
			1		1008540-13	GASKET, CONNECTOR MINIATURE	52
			1		1008540-2	GASKET, CONNECTOR MINIATURE	51
			2		1006777-1	CAPACITOR	50
			X		1009523	SCHEMATIC	REF
			2		1006777-16	CAPACITOR	49
			1		1006750-40	RESISTOR	48
			1		1010372-6	DIODE, ZENER	47
							46
			2		1008256	POLARIZING PIN	45
			AR		1006776 - 22	INSULATION SLEEVING	44
			AR		1006776 - 21	INSULATION SLEEVING	43
			16		1006782 — 4	CONTACT, WRAPOST MALE MINAT	42
			16		1006775	INSULATOR, WRAPOST MALE MINAT	41
			2		1000093 — 3	SCREW, BOTTON HEAD	40
			1		MS 35650 — 104	NUT, PLAIN, HEX	39
			1		1008020—1	WASHER, FLAT	38
			2		1008024—1	WASHER, INSULATOR	37
			AR		1006757—8	WIRE, ELEC, .020 DIA	36
			AR		1006757—L	WIRE, ELEC, .010 X .020	35
			2		1008025—1	INSULATOR BUSHING	34
			1		1008021 — 1	INSULATOR, BUSHING	33
			AR		1006776—20	INSULATION SLEEVING	32
			1		1010715 -1	TRANSISTOR	31
			2		1010376 — 4	TRANSISTOR	30
			1		1010269 — 1	TRANSISTOR	29
			2		1010357-1	TRANSISTOR	28
			2		1010388 — 39	INDUCTOR	27
			3		1010394	DIODE	26
			1		1010286-20	DIODE	25
			2		1010462 - 6	DIODE, ZENER	24
			3		1010385	DIODE	23
			2		1006777—24	CAP., FIXED CER	22
			2		1006777—33	CAP., FIXED CER	21
			1		1010393 —039	CAP., FIXED TANT	20
			1		1006755 —73	CAP., FIXED TANT	19
			2		1006777 —13	CAP., FIXED CER	18
			1		1006750 —15	RESISTOR, FIXED MF	17
			2		1006750 —56	RESISTOR, FIXED MF	16
			1		1010389 - 88	RESISTOR, FIXED MF	15
			2		1010369 — 85	RESISTOR, FIXED MF	14
			1		1006750-78	RESISTOR, FIXED MF	13
			4		1006750 —53	RESISTOR, FIXED MF	12
			1		1006750 —1	RESISTOR, FIXED MF	11
			4		1006750—67	RESISTOR, FIXED MF	10
			4		1006750—81	RESISTOR, FIXED MF	9
			2		1010389 —78	RESISTOR, FIXED WW	8
							7
			1		1010373 —12	RESISTOR, VAR	6
			1		1010497	DIODE	5
			1		1010364—697	RESISTOR, FIXED MF	4
			1		1008581	INSULATOR, TOP	3
			1		1008580	INSULATOR, BOTTOM	2
			1		1007035	HEATSINK	1

1007527

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX±.02 XXX±.005 ANGLES ± 1/2
DO NOT SCALE THIS DRAWING
MATERIAL —//—
HEAT TREATMENT —//—
FINAL FINISH —//—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN J. Kilroy DATE 23 SEP 64
CHECKED A. Ulrich 25 SEP 64
APPROVAL
APPROVAL D. R. Frost 12/4/64
NASA APPROVAL W. J. Rhine 12-8-64
MIT APPROVAL

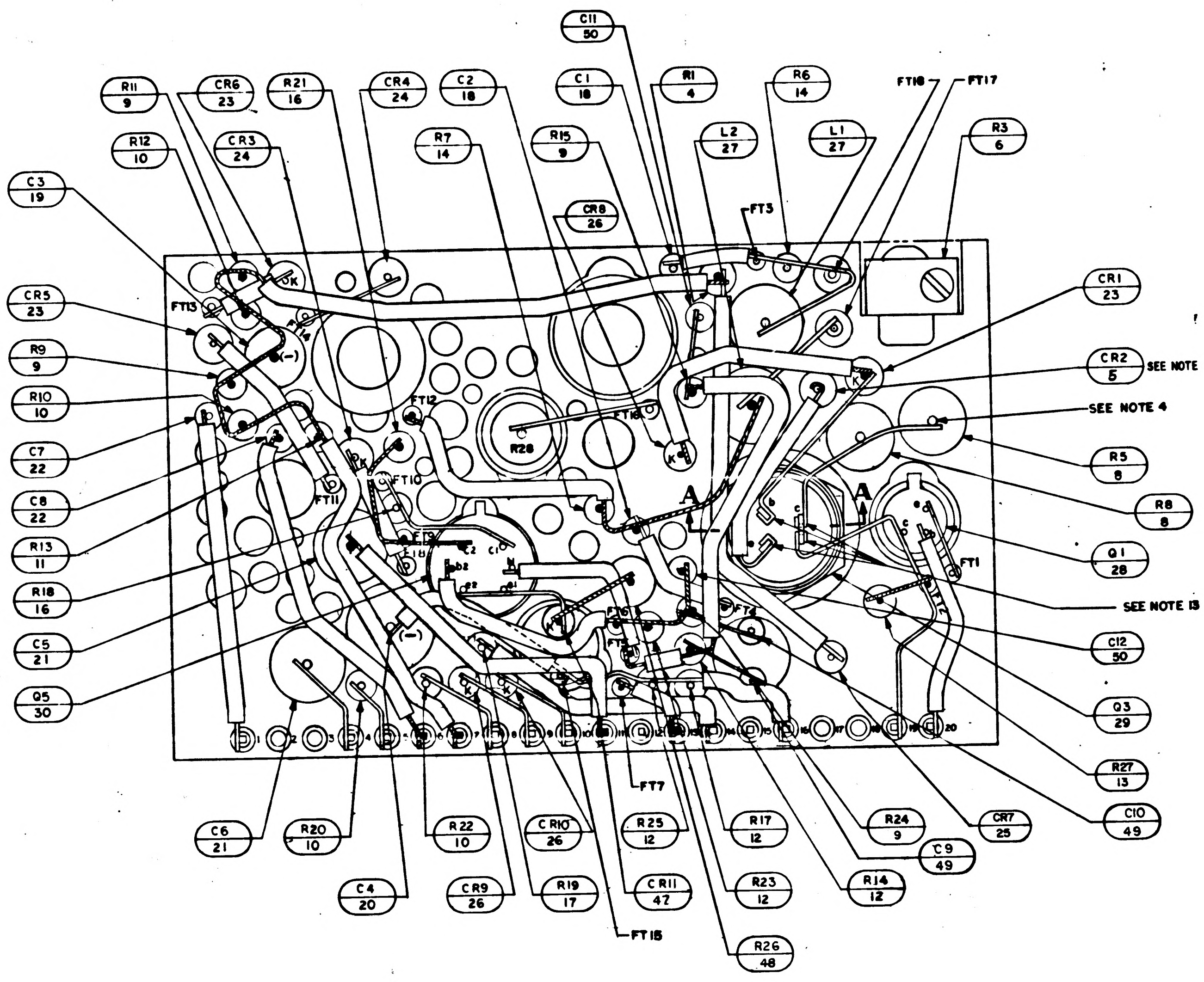
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BINARY CURRENT SWITCH COMPUTER OUTPUT ASSEMBLY

CODE IDENT NO.
SIZE J
NASA DRAWING NO. 1007527
SCALE 5/1
WT
SHEET 1 OF 1

271007527

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.


C11 50
R11 9
CR6 23
R21 16
CR4 24
C2 18
C1 18
R1 4
R6 14
FT16
FT17
R12 10
CR3 24
R7 14
R15 9
L2 27
L1 27
R3 6
C3 19
CR8 26
FT3
CR5 23
FT13
R9 9
R10 10
C7 22
C8 22
R13 11
R18 16
C5 21
Q5 30
FT12
FT10
FT11
R28
A
A
FT1
CR1 23
CR2 5
SEE NOTE 13
SEE NOTE 4
R5 6
R8 6
Q1 28
SEE NOTE 13
C12 50
Q3 29
R27 13
C10 49
C6 21
R20 10
R22 10
CR10 26
R25 12
FT7
R17 12
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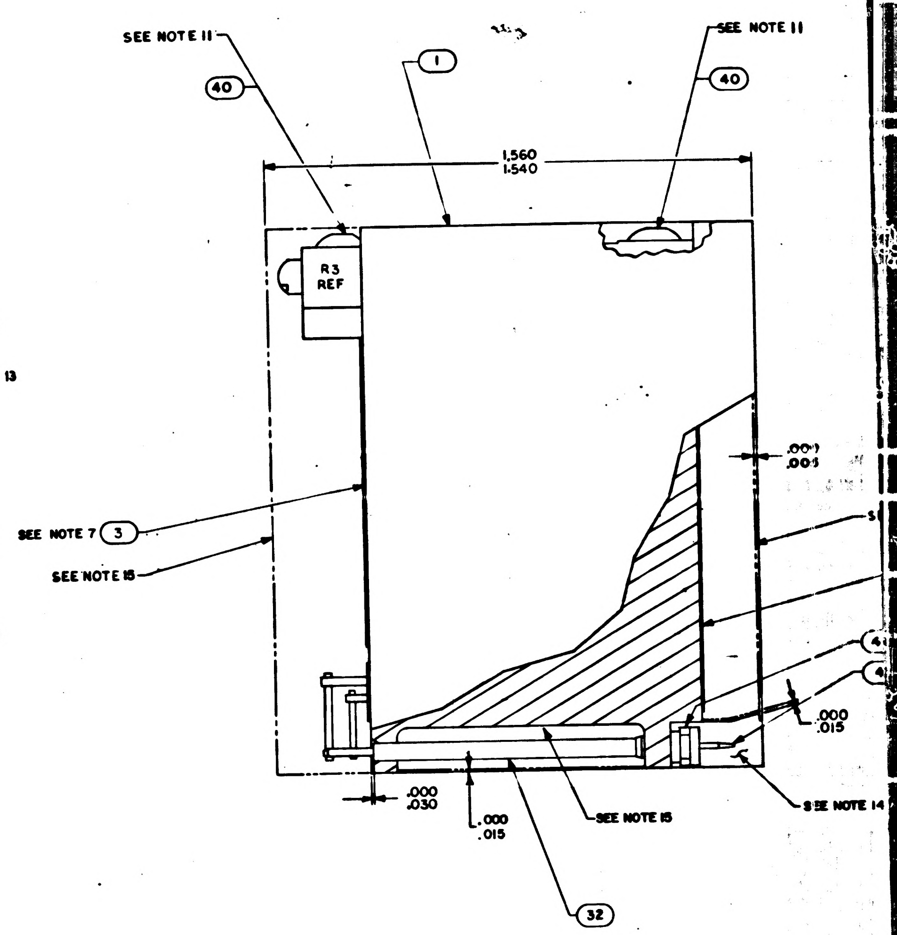
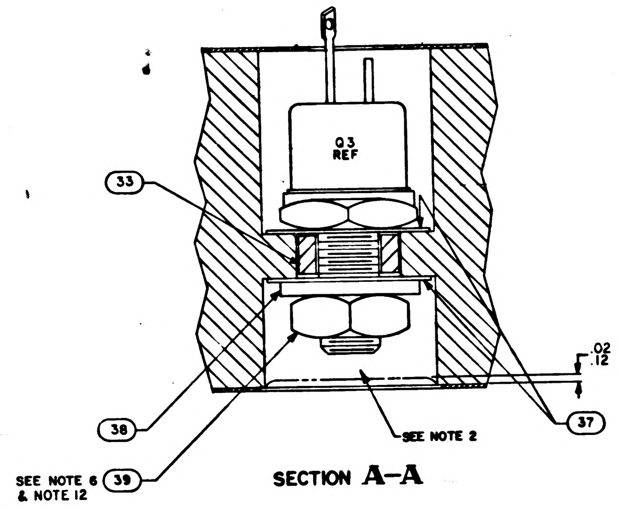
C4 20
CR9 26
R19 17
CR11 47
R23 12
R14 12
FT15
R26 48
20

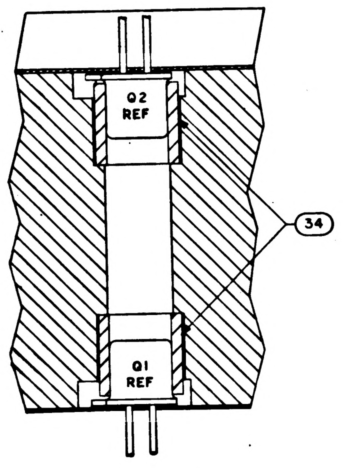

SEE NOTE 11
SEE NOTE 11
40
1
40
1.560
1.540
R3 REF
.001
.005
SEE NOTE 7
3
SEE NOTE 15
.000
.015
SEE NOTE 14
.000
.030
.000
.015
SEE NOTE 15
32

NOTES:

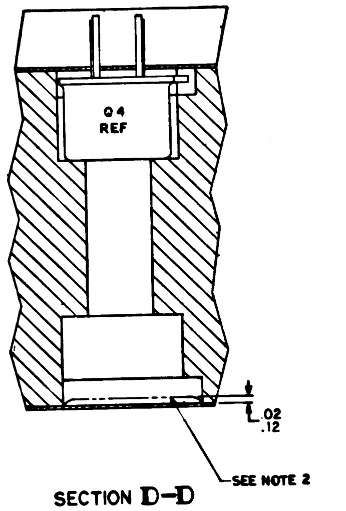
1. INTERPRET DRAWING IN ACCORDANCE WITHE STANDARDS PRESCRIBED BY MIL-D-70327.
2. FILL PER ND1002117
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. APPLY SEALING COMPOUND MIL-S-40083 CLASS 31 TO FIND NO. 39.
7. ON FIND NUMBERS 2 AND 3 ;
   - BROKEN PATHS INDICATE INSULATION SLEEVING.
   - K INDICATES CATHODE SIDE OF DIODE.
   - FT ( ) INDICATES FEED THRU
   - PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
   - C INDICATES COLLECTOR LEAD OF TRANSISTOR.
   - B INDICATES BASE LEAD OF TRANSISTOR.
   - E INDICATES EMITTER LEAD OF TRANSISTOR.
   - C ( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR.
   - B ( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR.
   - E ( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR.
8. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE)PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
9. STAKE FIND NO.4 THRU FIND NO.31, FIND NO.33 AND FIND NO.34 PER ND 1002009, METHOD C
10. AR DENOTES AS REQUIRED.
11. APPLY ZINC CHROMATE PRIMER MIL-P-6808 (ASG) TO THREADS OF FIND NO.40.
12. MOUNTING TORQUE FOR FIND NO.29 10/15 INCH POUND.
13. SOLDER PER ND 1002071.
14. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY NOT EXCEED THE NORMAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. MUST MEET REQUIREMENTS OF ND 1002136.
17. PROCURE PER PS-1007027
18. BOND FIND NO.51, 52 AND 53 TO FIND NO.41 PER ND1002237.
19. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
20. BOND FIND NO. 45 TO FIND NO.1 PER ND1002004 TYPE I


Q3 REF
33
.02
.12
38
SEE NOTE 2
37
SEE NOTE 6 & NOTE 12
39

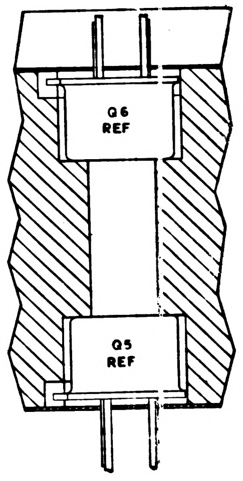
SECTION A–A


Q2 REF
34
Q1 REF

SECTION C–C


Q4 REF
.02
.12
SEE NOTE 2

SECTION D–D


Q6 REF
Q5 REF

SECTION E–E

REVISIONS			
SYM	DESCRIPTION	DATE	APPR
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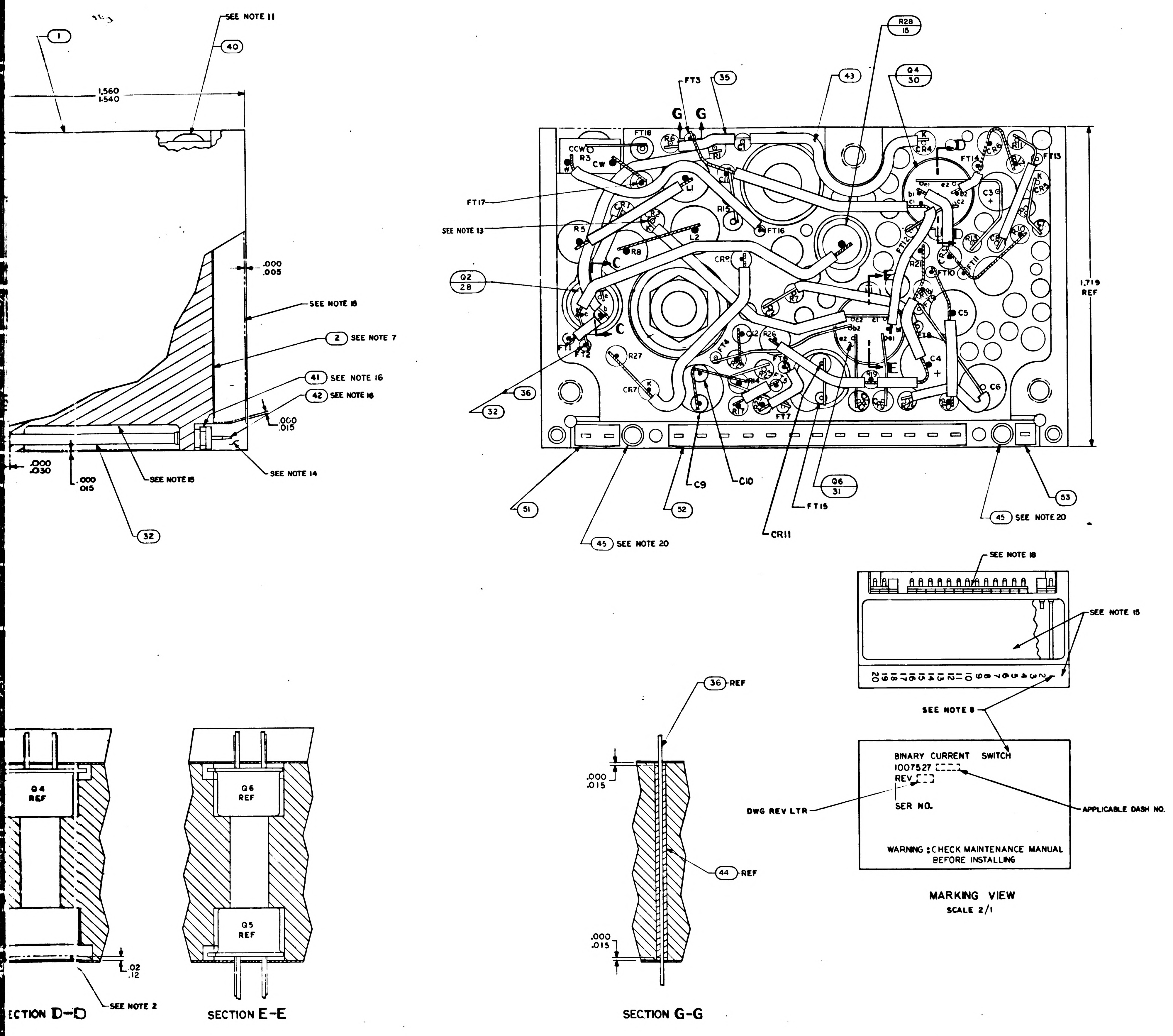
3	REVISED PER TDRR 6825	4 MAR 65	


SEE NOTE 11
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1.560
1.540
.000
.005
SEE NOTE 15
2 SEE NOTE 7
41 SEE NOTE 16
42 SEE NOTE 16
.000
.015
SEE NOTE 14
.000
.030
.000
.015
SEE NOTE 15
32
FT3
35
G G
43
R28
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Q4
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FT18
CCW
R3
CW
FT17
SEE NOTE 13
R5
L2
R8
FT16
R15
FT14
FT13
C3
FT12
R21
FT10
FT11
Q2
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CR8
R27
CR7
C12
R26
FT4
FT2
FT1
C5
C4
C6
FT8
FT9
FT7
R17
36
32
1.719
REF
51
45 SEE NOTE 20
C9
C10
52
CR11
Q6
31
FT15
45 SEE NOTE 20
53
SEE NOTE 18
SEE NOTE 15
SEE NOTE 8
36 REF
44 REF
.000
.015
.000
.015
Q4
REF
Q6
REF
Q5
REF
.02
.12
SEE NOTE 2
SECTION D-D
SECTION E-E
SECTION G-G
BINARY CURRENT SWITCH
1007527
REV
SER NO.
DWG REV LTR
APPLICABLE DASH NO.
WARNING : CHECK MAINTENANCE MANUAL BEFORE INSTALLING

MARKING VIEW
SCALE 2/1

			011	EFFEC-TIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
			1		1010830-20	DIODE, ZENER	55
			2		1010833-1	DIODE, ZENER	54
			1		1008540-1	GASKET, CONNECTOR MINIATURE	53
			1		1008540-13	GASKET, CONNECTOR MINIATURE	52
			1		1008540-2	GASKET, CONNECTOR MINIATURE	51
			2		1006777-1	CAPACITOR	50
			☒		1009523	SCHEMATIC	REF
			2		1006777-16	CAPACITOR	49
			1		1006750-40	RESISTOR	48
			1		1010372-6	DIODE, ZENER	47
							46
			2		1008256	POLARIZING PIN	45
			AR		1006776 - 22	INSULATION SLEEVING	44
			AR		1006776 - 21	INSULATION SLEEVING	43
			16		1006782 — 4	CONTACT, WRAPOST MALE MINAT	42
			16		1006775	INSULATOR, WRAPOST MALE MINAT	41
			2		1000093 — 3	SCREW, BOTTON HEAD	40
			1		MS 35650 — 104	NUT, PLAIN, HEX	39
			1		1008020—1	WASHER, FLAT	38
			2		1008024—1	WASHER, INSULATOR	37
			AR		1006757—8	WIRE, ELEC, .020 DIA	36
			AR		1006757—1	WIRE, ELEC, .010 X .020	35
			2		1008025—1	INSULATOR BUSHING	34
			1		1008021 — 1	INSULATOR, BUSHING	33
			AR		1006776—20	INSULATION SLEEVING	32
			1		1010715 —1	TRANSISTOR	31
			2		1010376 — 4	TRANSISTOR	30
			1		1010269 — 1	TRANSISTOR	29
			2		1010357-1	TRANSISTOR	28
			2		1010388 — 39	INDUCTOR	27
			3		1010394	DIODE	26
			1		1010286-20	DIODE	25
			~~2~~		~~1010462 -6~~	~~DIODE, ZENER~~	24
					1010385	DIODE	23
			2		1006777—24	CAP., FIXED CER	22
			2		1006777—33	CAP., FIXED CER	21
			1		1010393 —039	CAP., FIXED TANT	20
			1		1006755 —73	CAP., FIXED TANT	19
			2		1006777 —13	CAP., FIXED CER	18
			1		1006750 —15	RESISTOR, FIXED MF	17
			2		1006750 —56	RESISTOR, FIXED MF	16
			1		1010389 - 88	RESISTOR, FIXED MF	15
			2		1010369 — 85	RESISTOR, FIXED MF	14
			1		1006750-78	RESISTOR, FIXED MF	13
			4		1006750 —53	RESISTOR, FIXED MF	12
			1		1006750 —1	RESISTOR, FIXED MF	11
			4		1006750—67	RESISTOR, FIXED MF	10
			4		1006750 —81	RESISTOR, FIXED MF	9
			2		1010389 —78	RESISTOR, FIXED WW	8
							7
			1		1010373 —12	RESISTOR, VAR	6
					1010497	DIODE	5
			1		1010364—697	RESISTOR, FIXED MF	4
			1		1008581	INSULATOR, TOP	3
			1		1008580	INSULATOR, BOTTOM	2
			1		1007035	HEATSINK	1
QUANTITY REQUIRED					LIST OF MATERIALS		

1007527

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX±.02 XXX±.005 ANGLES ± 1/2
DO NOT SCALE THIS DRAWING
MATERIAL —//—
HEAT TREATMENT —//—
FINAL FINISH —//—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN J. Kilmer DATE 23 SEP 64
CHECKED Q. Usnich 25 SEP 64
APPROVAL
APPROVAL D. R. Test 12/4/64
NASA APPROVAL 12-8-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BINARY CURRENT SWITCH
COMPUTER OUTPUT
ASSEMBLY

CODE IDENT NO.
SIZE J
NASA DRAWING NO. 1007527
SCALE 5/1
WT
SHEET 1 OF 1

2710007527

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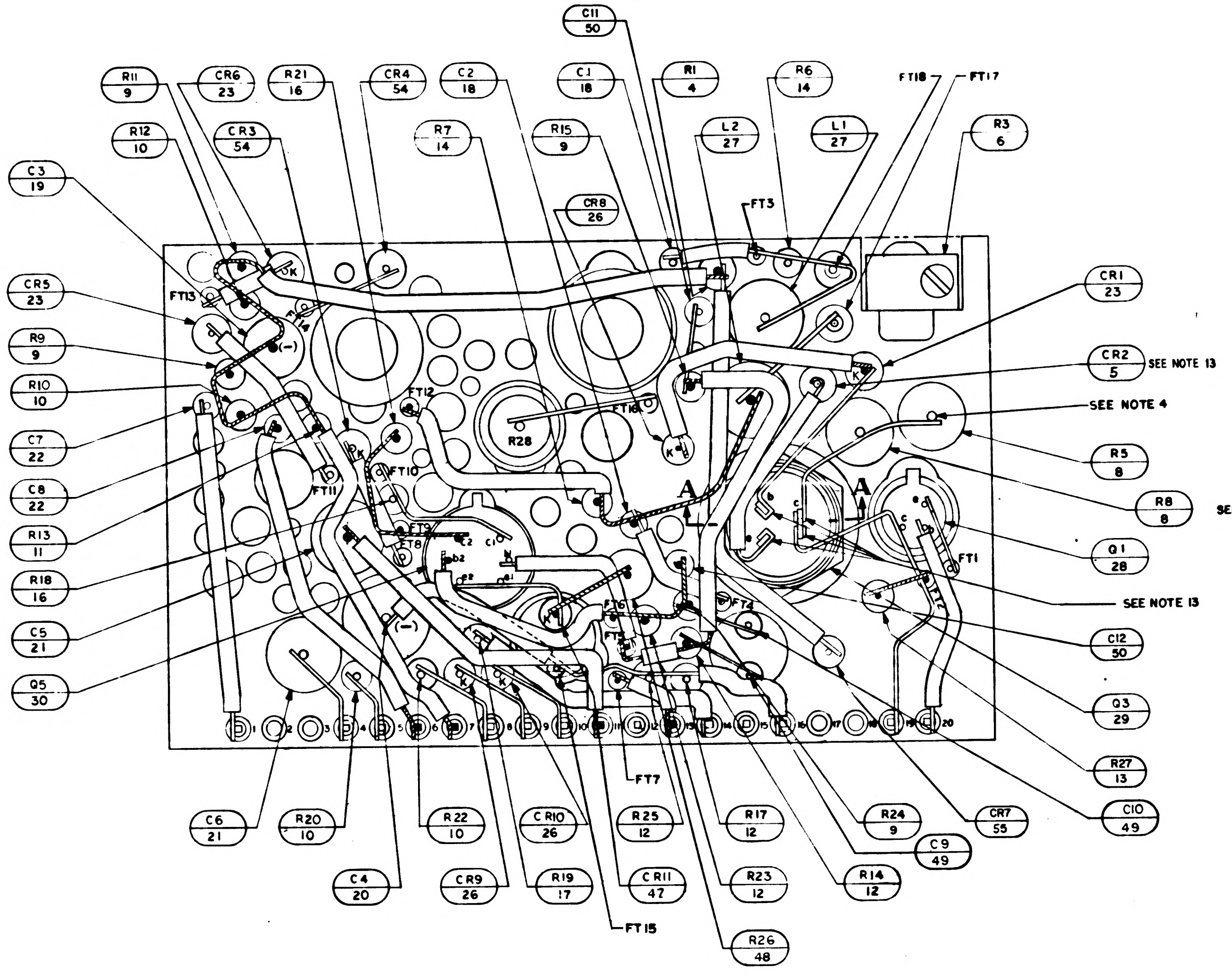
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R1 4
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FT18
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R7 14
R15 9
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L1 27
CR8 26
FT3
C3 19
CR5 23
FT13
FT14
R9 9
R10 10
FT12
R28
FT16
C7 22
C8 22
FT10
FT11
FT9
FT8
R13 11
R18 16
C5 21
Q5 30
A
A
CR1 23
CR2 5
SEE NOTE 13
SEE NOTE 4
R5 8
R8 8
Q1 28
FT1
SEE NOTE 13
FT2
FT4
FT5
FT6
C12 50
Q3 29
R27 13
C10 49
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C6 21
R20 10
R22 10
CR10 26
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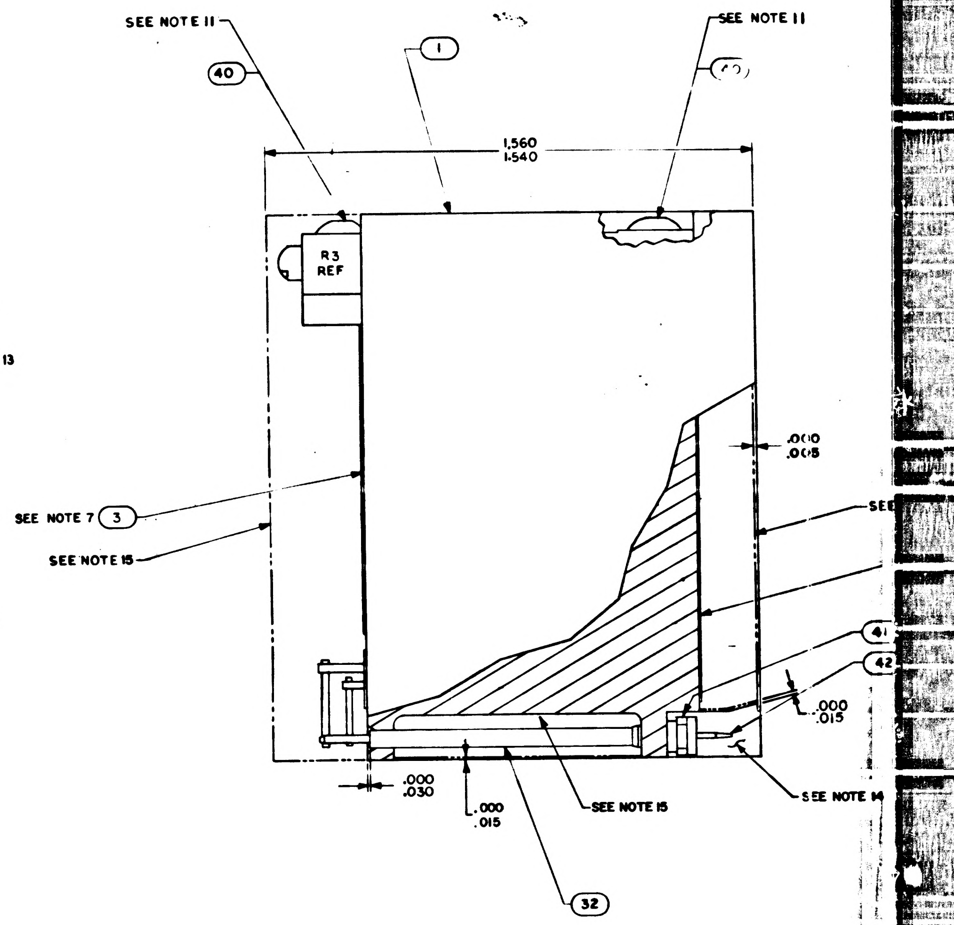
R23 12
R14 12
FT15
R26 48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SEE NOTE 11
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1.540
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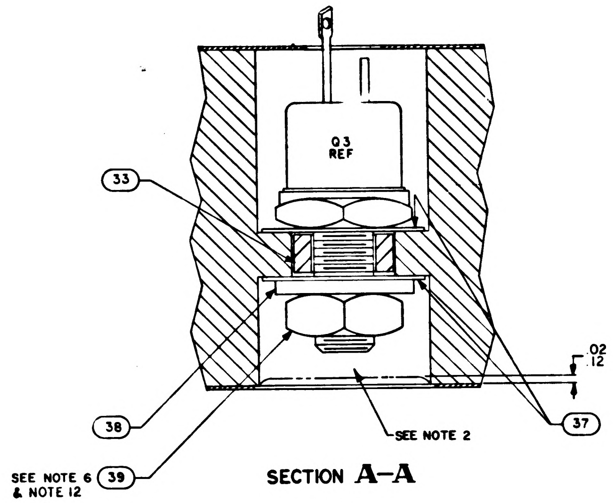
.000
.005
SEE NOTE 7
3
SEE NOTE 15
41
42
.000
.015
.000
.030
.000
.015
SEE NOTE 15
SEE NOTE 14
32

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITHE STANDARDS PRESCRIBED BY MIL-D-70327.
2. FILL PER ND1002117
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. APPLY SEALING COMPOUND MIL-S-40083 CLASS 31 TO FIND NO. 39.
7. ON FIND NUMBERS 2 AND 3 ;
   BROKEN PATHS INDICATE INSULATION SLEEVING.
   K INDICATES CATHODE SIDE OF DIODE.
   FT ( ) INDICATES FEED THRU
   PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
   C INDICATES COLLECTOR LEAD OF TRANSISTOR.
   B INDICATES BASE LEAD OF TRANSISTOR.
   E INDICATES EMITTER LEAD OF TRANSISTOR.
   C ( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR.
   B ( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR.
   E ( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR.
8. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE)PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
9. STAKE FIND NO.4 THRU FIND NO.31, FIND NO.33 AND FIND NO.34 PER ND 1002009, METHOD C
10. AR DENOTES AS REQUIRED.
11. APPLY ZINC CHROMATE PRIMER MIL-P-6808 (ASG) TO THREADS OF FIND NO.40.
12. MOUNTING TORQUE FOR FIND NO.29 10/15 INCH POUND.
13. SOLDER PER ND 1002071.
14. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY NOT EXCEED THE NORMAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. MUST MEET REQUIREMENTS OF ND 1002136.
17. PROCURE PER PS-1007027
18. BOND FIND NO.51, 52 AND 53 TO FIND NO.41 PER ND1002237
19. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
20. BOND FIND NO. 45 TO FIND NO.1 PER ND1002004 TYPE I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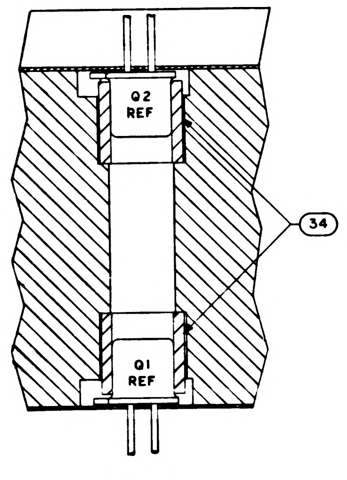
.02
.12
SEE NOTE 2
38
37
SEE NOTE 6 & NOTE 12
39

SECTION A–A


Q2 REF
Q1 REF
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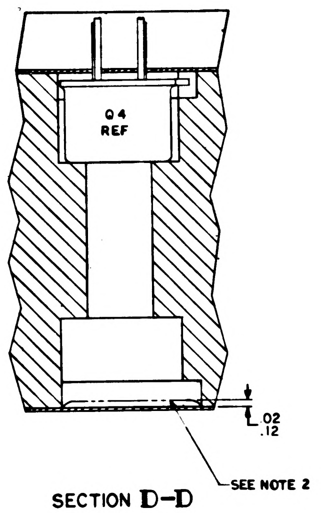
SECTION C–C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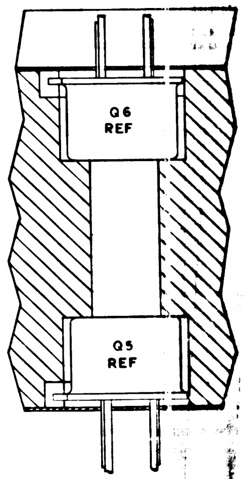
SEE NOTE 2

SECTION D–D


Q6 REF
Q5 REF

SECTION E–E

1007527 LTR B SH 1

17 1007527

SYM	DESCRIPTION	DATE	APPROV
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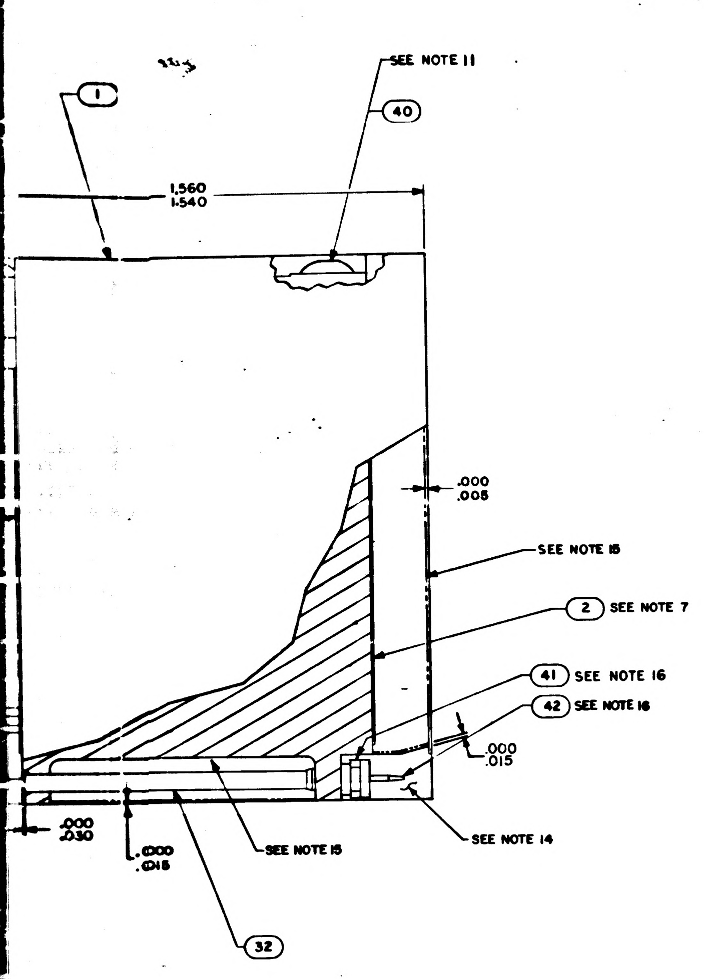
B	REVISED PER TDRR 16825	4 MAR 65	
C	REVISED PER TDRR 17341	12 MAR 65	



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SEE NOTE 11
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1.540
.000
.005
SEE NOTE 15
2 SEE NOTE 7
41 SEE NOTE 16
42 SEE NOTE 16
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.015
SEE NOTE 14
SEE NOTE 15
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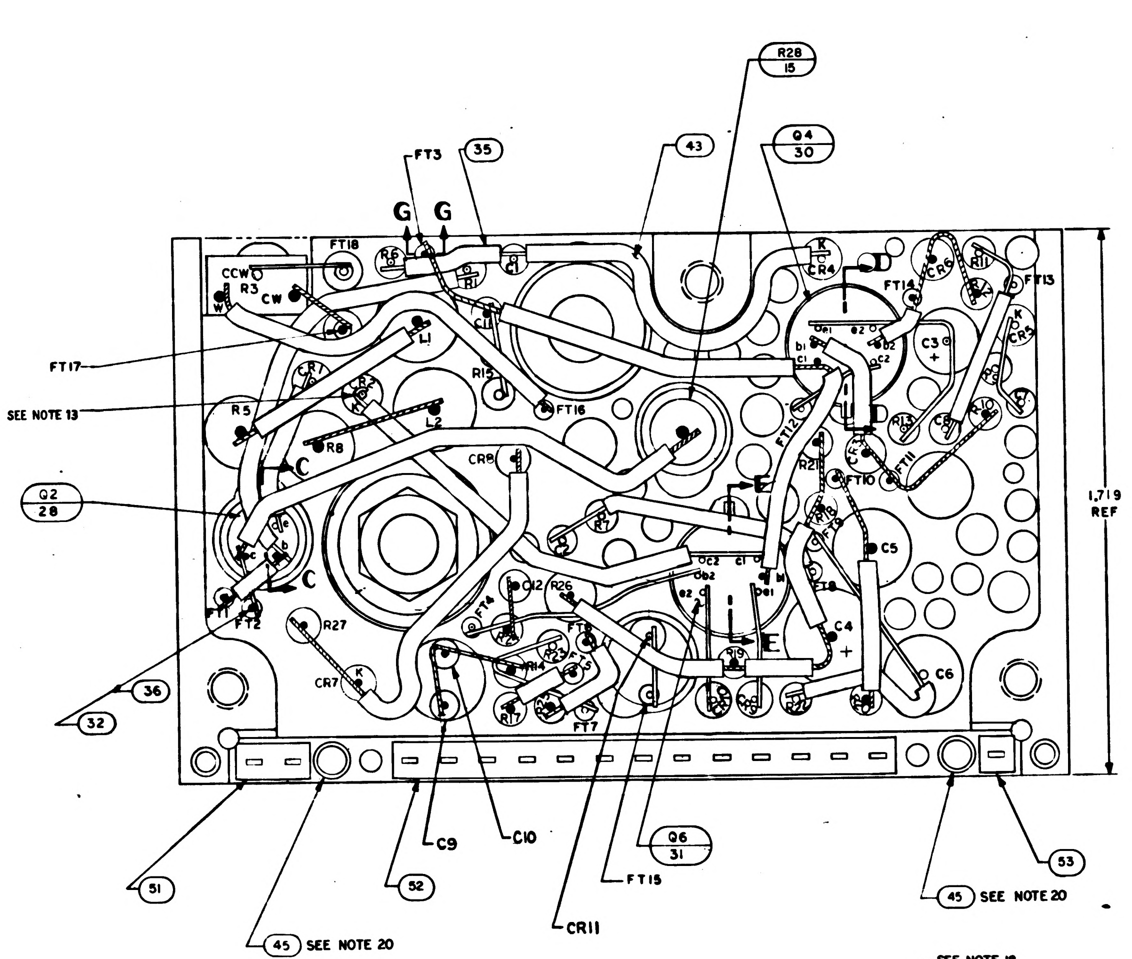
.030
.000
.015
32



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Q4
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43
FT3
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G G
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CW
R3
W
FT17
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L1
L2
R15
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CR8
D
CR4
FT14
C3
FT13
FT12
FT11
FT10
R21
E
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FT8
C4
C6
Q2
28
C
C
FT2
R27
CR7
C12
R26
FT4
R14
FT7
FT5
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REF
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32
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CR11
Q6
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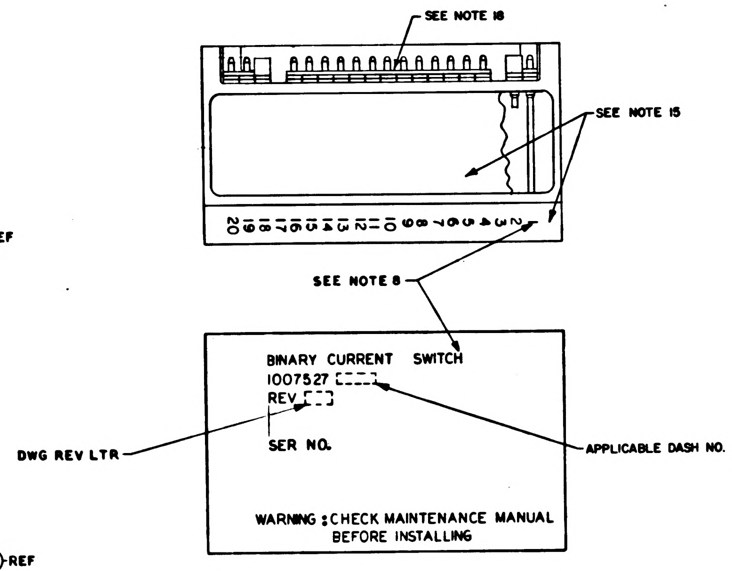
FT15
45 SEE NOTE 20
53



SEE NOTE 18
SEE NOTE 15
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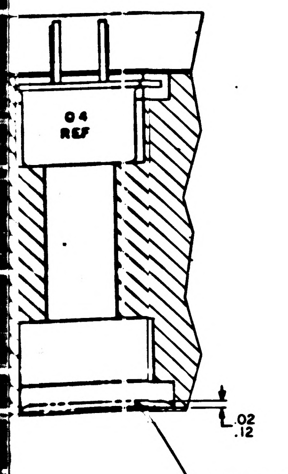
SEE NOTE 8
BINARY CURRENT SWITCH
1007527
REV
SER NO.
WARNING: CHECK MAINTENANCE MANUAL BEFORE INSTALLING
DWG REV LTR
APPLICABLE DASH NO.

MARKING VIEW
SCALE 2/1



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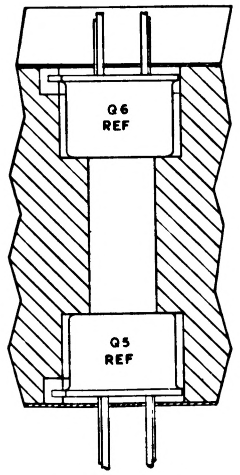
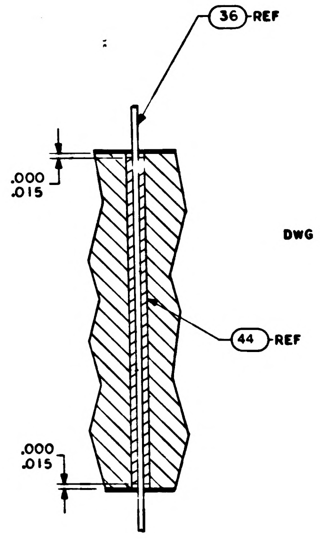
SEE NOTE 2

SECTION D-D



Q6
REF
Q5
REF

SECTION E-E



36 REF
.000
.015
44 REF
.000
.015

SECTION G-G

			011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
			1		1010830-20	DIODE, ZENER	55
			2		1010833-1	DIODE, ZENER	54
			1		1008540-1	GASKET, CONNECTOR MINIATURE	53
			1		1008540-13	GASKET, CONNECTOR MINIATURE	52
			1		1008540-2	GASKET, CONNECTOR MINIATURE	51
			2		1006777-1	CAPACITOR	50
			X		1009523	SCHEMATIC	REF
			2		1006777-16	CAPACITOR	49
			1		1006750-40	RESISTOR	48
			1		1010372-6	DIODE, ZENER	47
							46
			2		1008256	POLARIZING PIN	45
			AR		1006776 - 22	INSULATION SLEEVING	44
			AR		1006776 - 21	INSULATION SLEEVING	43
			16		1006782 — 4	CONTACT, WRAPOST MALE MINAT	42
			16		1006775	INSULATOR, WRAPOST MALE MINAT	41
			2		1000093 — 3	SCREW, BOTTON HEAD	40
			1		MS 35650 — 104	NUT, PLAIN, HEX	39
			1		1008020—1	WASHER, FLAT	38
			2		1008024—1	WASHER, INSULATOR	37
			AR		1006757—8	WIRE, ELEC., .020 DIA	36
			AR		1006757—L	WIRE, ELEC., .010 X .020	35
			2		1008025—1	INSULATOR BUSHING	34
			1		1008021—1	INSULATOR, BUSHING	33
			AR		1006776—20	INSULATION SLEEVING	32
			1		1010715 —1	TRANSISTOR	31
			2		1010376 — 4	TRANSISTOR	30
			1		1010269 — 1	TRANSISTOR	29
			2		1010357-1	TRANSISTOR	28
			2		1010388 — 39	INDUCTOR	27
			3		1010394	DIODE	26
			~~1~~		~~1010286-20~~	~~DIODE~~	~~25~~
			~~2~~		~~1010462-6~~	~~DIODE, ZENER~~	~~24~~
			3		1010385	DIODE	23
			2		1006777—24	CAP., FIXED CER	22
			2		1006777—33	CAP., FIXED CER	21
			1		1010393 —039	CAP., FIXED TANT	20
			1		1006755 —73	CAP., FIXED TANT	19
			2		1006777 —13	CAP., FIXED CER	18
			1		1006750 —15	RESISTOR, FIXED MF	17
			2		1006750 —56	RESISTOR, FIXED MF	16
			1		1010389 - 88	RESISTOR, FIXED MF	15
			2		1010369 - 85	RESISTOR, FIXED MF	14
			1		1006750-78	RESISTOR, FIXED MF	13
			4		1006750 —53	RESISTOR, FIXED MF	12
			1		1006750 —1	RESISTOR, FIXED MF	11
			4		1006750—67	RESISTOR, FIXED MF	10
			4		1006750—81	RESISTOR, FIXED MF	9
			2		1010389 —78	RESISTOR, FIXED WW	8
							7
			1		1010373 —12	RESISTOR, VAR	6
			1		1010497	DIODE	5
			1		1010364—697	RESISTOR, FIXED MF	4
			1		1008581	INSULATOR, TOP	3
			1		1008580	INSULATOR, BOTTOM	2
			1		1007035	HEATSINK	1

QUANTITY REQUIRED
LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS XX±.02 XXX±.005
ANGLES ± 1/2
DO NOT SCALE THIS DRAWING
MATERIAL —//—
HEAT TREATMENT —//—
FINAL FINISH —//—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN J. Kilroy DATE 23 SEP 64
CHECKED A. Ulrich 25 SEP 64
APPROVAL
APPROVAL D. R. Test 12/4/64
NASA APPROVAL W. J. Rhine 12-8-64
MIT APPROVAL

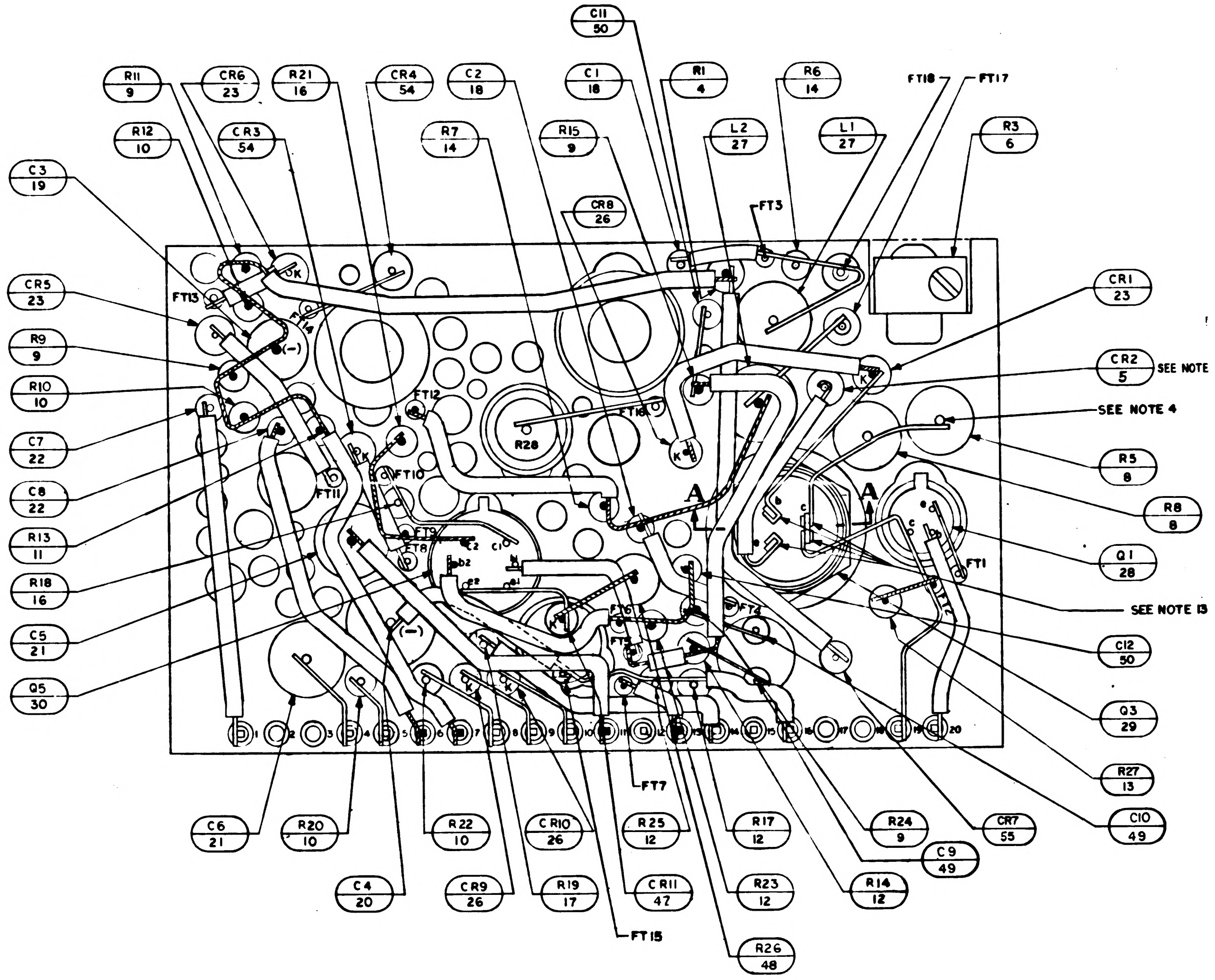
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BINARY CURRENT SWITCH
COMPUTER OUTPUT
ASSEMBLY

CODE IDENT NO.
SIZE J
NASA DRAWING NO. 1007527
SCALE 5/1
WT
SHEET 1 OF 1

1007527 C

3H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R21 16
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CR5 23
FT13
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R10 10
C7 22
C8 22
R13 11
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CR2 5
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SEE NOTE 4
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Q3 29
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FT12
FT11
FT10
FT9
FT8
FT16
FT1
FT4
FT7
R28
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(-)
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R22 10
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R25 12
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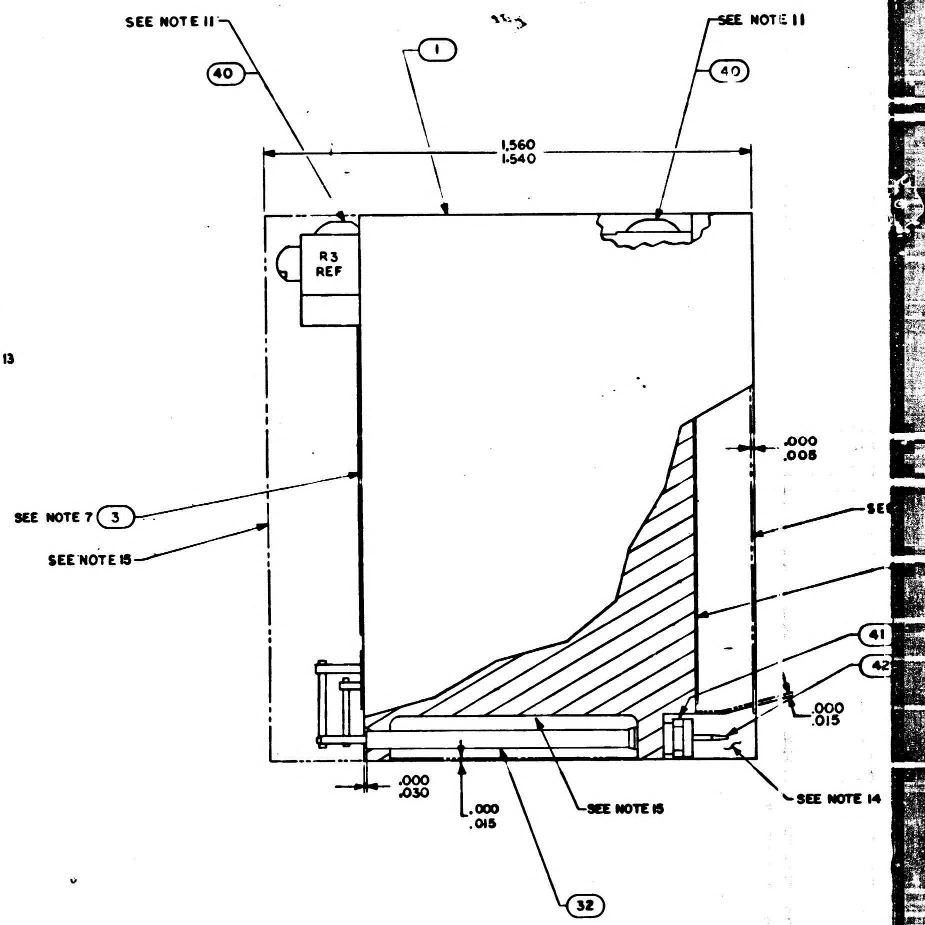
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SEE NOTE 11
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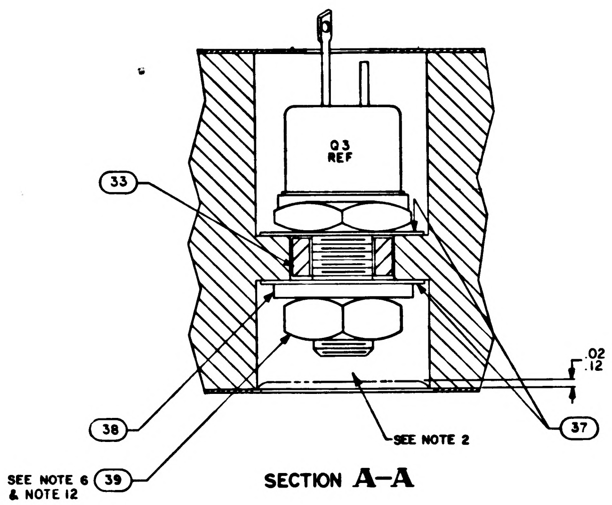
1.540
R3 REF
.000
.005
SEE NOTE 7
3
SEE NOTE 15
41
42
.000
.015
.000
.030
.000
.015
SEE NOTE 15
SEE NOTE 14
32

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITHE STANDARDS PRESCRIBED BY MIL-D-70327.
2. FILL PER ND1002117
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. APPLY SEALING COMPOUND MIL-S-40083 CLASS 31 TO FIND NO. 39.
7. ON FIND NUMBERS 2 AND 3 ;
   BROKEN PATHS INDICATE INSULATION SLEEVING.
   K INDICATES CATHODE SIDE OF DIODE.
   FT ( ) INDICATES FEED THRU
   PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
   C INDICATES COLLECTOR LEAD OF TRANSISTOR.
   B INDICATES BASE LEAD OF TRANSISTOR.
   E INDICATES EMITTER LEAD OF TRANSISTOR.
   C ( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR.
   B ( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR.
   E ( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR.
8. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE)PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
9. STAKE FIND NO.4 THRU FIND NO.31, FIND NO.33 AND FIND NO.34 PER ND 1002009, METHOD C
10. AR DENOTES AS REQUIRED.
11. APPLY ZINC CHROMATE PRIMER MIL-P-6808 (ASG) TO THREADS OF FIND NO.40.
12. MOUNTING TORQUE FOR FIND NO.29 10/15 INCH POUND.
13. SOLDER PER ND 1002071.
14. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY NOT EXCEED THE NORMAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. MUST MEET REQUIREMENTS OF ND 1002136.
17. PROCURE PER PS-1007027
18. BOND FIND NO.51, 52 AND 53 TO FIND NO.41 PER ND1002237.
19. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
20. BOND FIND NO. 45 TO FIND NO. 1 PER ND1002004 TYPE I
21. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.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SEE NOTE 6 & NOTE 12
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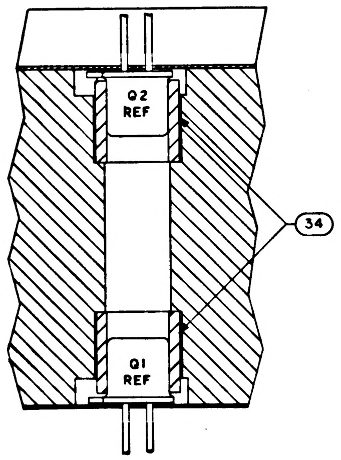
SEE NOTE 2
37
.02
.12

SECTION A–A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Q1 REF
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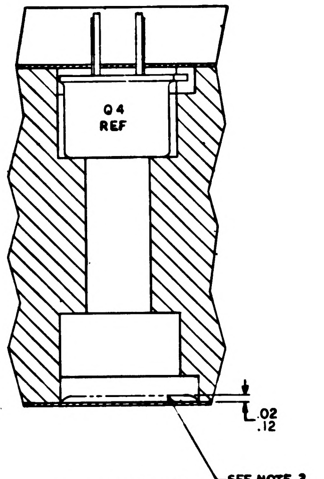
SECTION C–C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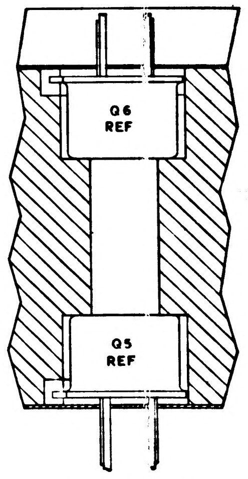
SEE NOTE 2

SECTION D–D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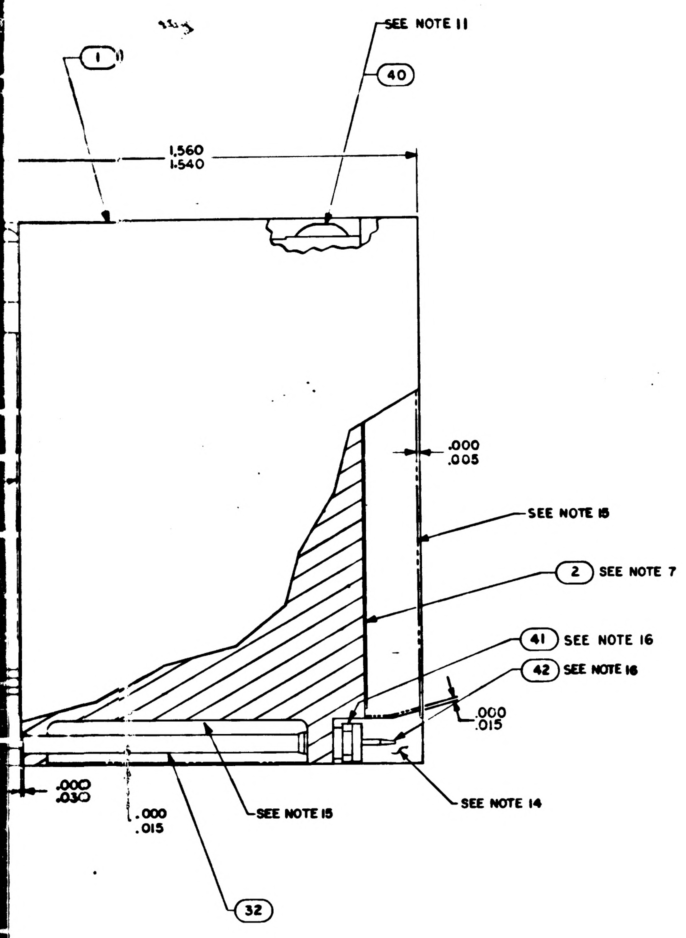
Q5 REF

SECTION E–E

SYM	DESCRIPTION	DATE	APPR
A	REVISED PER TDRR 5962	9 FEB 65	
B	REVISED PER TDRR 16825	4 MAR 65	
C	REVISED PER TDRR 17341	12 MAR 65	
D	REVISED PER TDRR17623	30 MAR 65	RJJ



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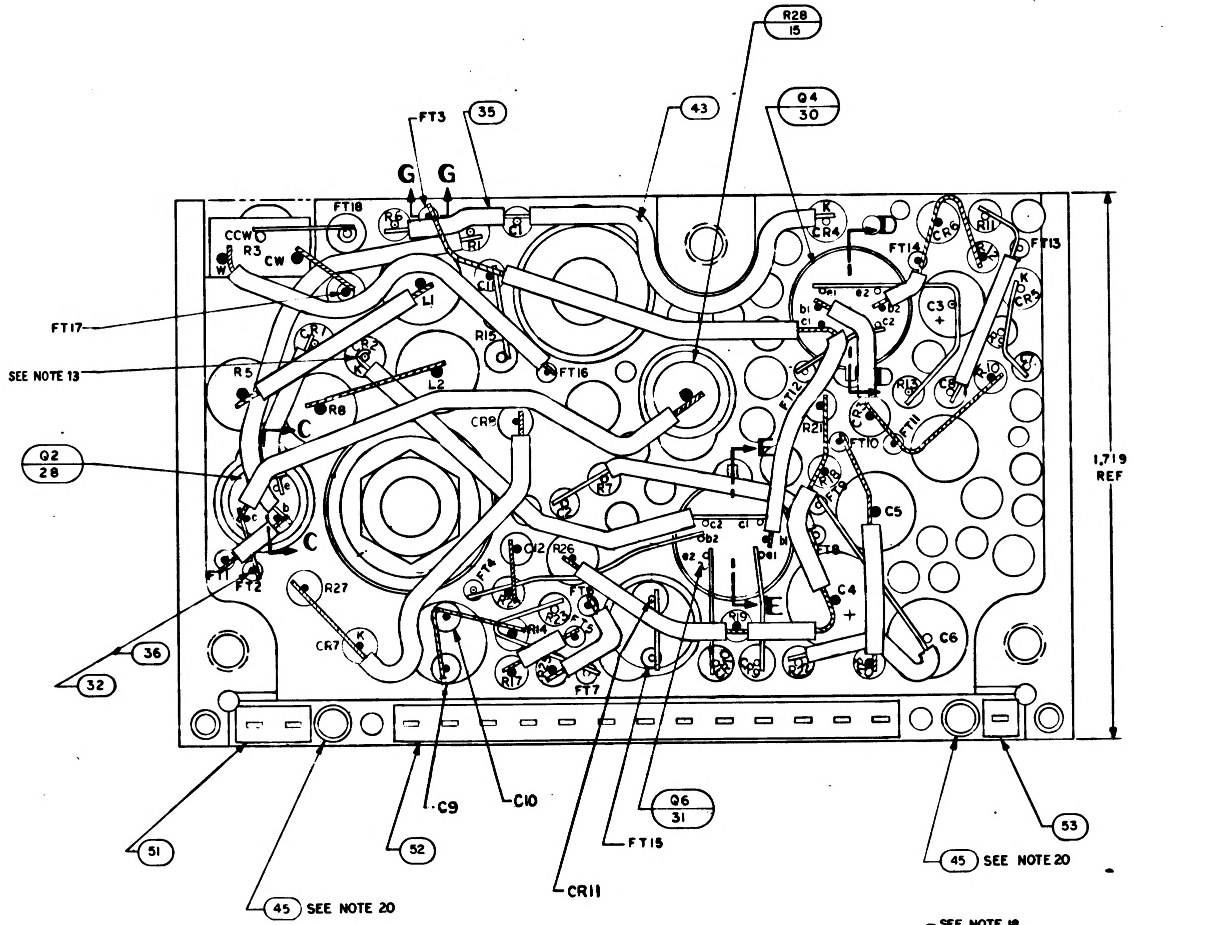
SEE NOTE 11
1.560
1.540
.000
.005
SEE NOTE 15
2 SEE NOTE 7
41 SEE NOTE 16
42 SEE NOTE 16
.000
.015
.000
.030
.000
.015
SEE NOTE 15
SEE NOTE 14
32



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FT3
G
G
FT18
FT17
SEE NOTE 13
Q2
28
CCW
CW
R3
R5
R8
L1
L2
R15
FT16
CR4
FT14
FT13
C3
C5
C4
C6
CR9
R21
FT10
FT12
C
E
R7
R27
R26
CR7
FT1
FT2
FT7
R17
1,719
REF
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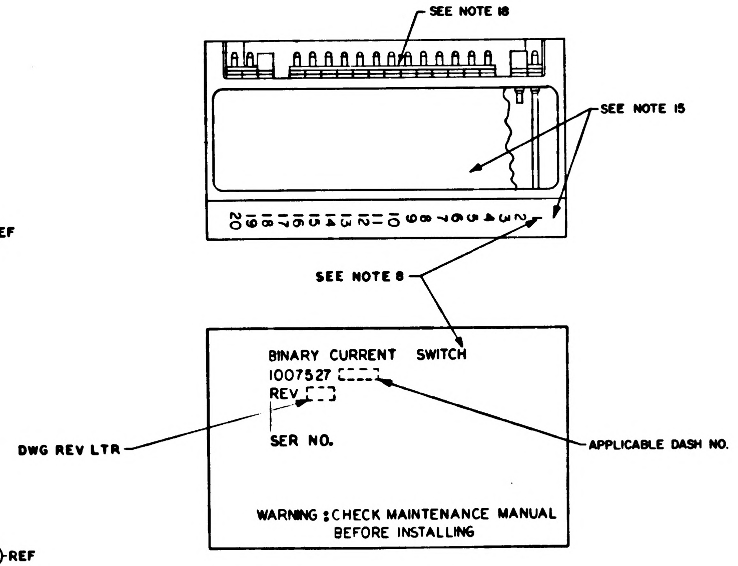
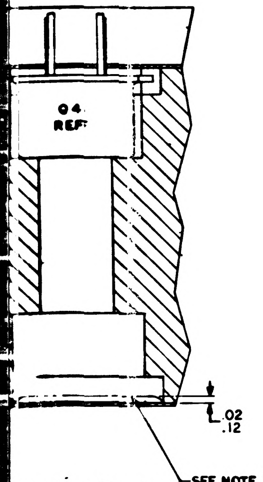
32
51
45 SEE NOTE 20
52
C9
C10
CR11
FT15
Q6
31
45 SEE NOTE 20
53



SEE NOTE 18
SEE NOTE 15
20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2
SEE NOTE 8
BINARY CURRENT SWITCH
1007527
REV
SER NO.
DWG REV LTR
APPLICABLE DASH NO.
WARNING : CHECK MAINTENANCE MANUAL BEFORE INSTALLING

MARKING VIEW
SCALE 2/1



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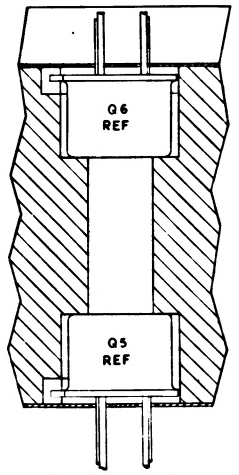
SEE NOTE 2

SECTION D-D



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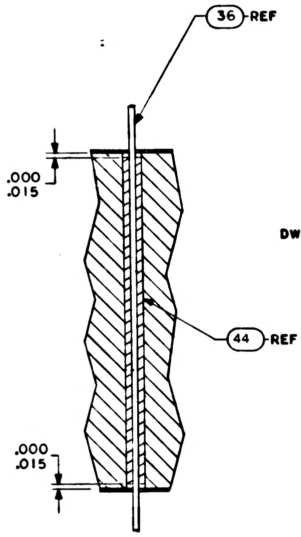
REF
Q5
REF

SECTION E-E



36 REF
.000
.015
44 REF
.000
.015

SECTION G-G

			011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
			1		1010830-20	DIODE, ZENER	55
			2		1010833-1	DIODE, ZENER	54
			1		1008540-1	GASKET, CONNECTOR MINIATURE	53
			1		1008540-13	GASKET, CONNECTOR MINIATURE	52
			1		1008540-2	GASKET, CONNECTOR MINIATURE	51
			2		1006777-1	CAPACITOR	50
			X		1009523	SCHEMATIC	REF
			2		1006777-16	CAPACITOR	49
			1		1006750-40	RESISTOR	48
			1		1010372-6	DIODE, ZENER	47
							46
			2		1008256	POLARIZING PIN	45
			AR		1006776 - 22	INSULATION SLEEVING	44
			AR		1006776 - 21	INSULATION SLEEVING	43
			[illegible]		1006782 - 4	CONTACT, WRAPOST MALE MINAT	42
			16		1006775	INSULATOR, WRAPOST MALE MINAT	41
			2		1000093 - 3	SCREW, BOTTON HEAD	40
			1		MS 35650 - 104	NUT, PLAIN, HEX	39
			1		1008020-1	WASHER, FLAT	38
			2		1008024-1	WASHER, INSULATOR	37
			AR		1006757-8	WIRE, ELEC, .020 DIA	36
			AR		1006757-1	WIRE, ELEC, .010 x .020	35
			2		1008025-1	INSULATOR BUSHING	34
			1		1008021-1	INSULATOR, BUSHING	33
			AR		1006776-20	INSULATION SLEEVING	32
			1		1010715 -1	TRANSISTOR	31
			2		1010376 - 4	TRANSISTOR	30
			1		1010269 - 1	TRANSISTOR	29
			2		1010357-1	TRANSISTOR	28
			2		1010388 - 39	INDUCTOR	27
			3		1010394	DIODE	26
			1		1010286-20	DIODE	25
			2		1010462 - 6	DIODE, ZENER	24
			[illegible]		1010385	DIODE	23
			2		1006777-24	CAP., FIXED CER	22
			2		1006777-33	CAP., FIXED CER	21
			1		1010393 -039	CAP., FIXED TANT	20
			1		1006755 -73	CAP., FIXED TANT	19
			2		1006777 -13	CAP., FIXED CER	18
			1		1006750 -15	RESISTOR, FIXED MF	17
			2		1006750 -56	RESISTOR, FIXED MF	16
			1		1010389 - 88	RESISTOR, FIXED MF	15
			2		1010369 - 85	RESISTOR, FIXED MF	14
			1		1006750-78	RESISTOR, FIXED MF	13
			4		1006750-53	RESISTOR, FIXED MF	12
			1		1006750-1	RESISTOR, FIXED MF	11
			4		1006750-67	RESISTOR, FIXED MF	10
			4		1006750-81	RESISTOR, FIXED MF	9
			2		1010389 -78	RESISTOR, FIXED WW	8
							7
			1		1010373 - 12	RESISTOR, VAR	6
			1		1010497	DIODE	5
			1		1010364-697	RESISTOR, FIXED MF	4
			1		1008581	INSULATOR, TOP	3
			1		1008580	INSULATOR, BOTTOM	2
			1		1007035	HEATSINK	1

QUANTITY REQUIRED
LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX±.02 XXX±.005 ANGLES ± 1/2
DO NOT SCALE THIS DRAWING
MATERIAL —//—
HEAT TREATMENT —//—
FINAL FINISH —//—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN J. Kilroman DATE 23 SEP 64
CHECKED D. Udrich 25 SEP 64
APPROVAL
APPROVAL D. R. Teat 12/4/64
NASA APPROVAL 12-8-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BINARY CURRENT SWITCH
COMPUTER OUTPUT
ASSEMBLY

CODE IDENT NO. | SIZE J | NASA DRAWING NO. 1007527
SCALE 5/1 | WT | SHEET 1 OF 1

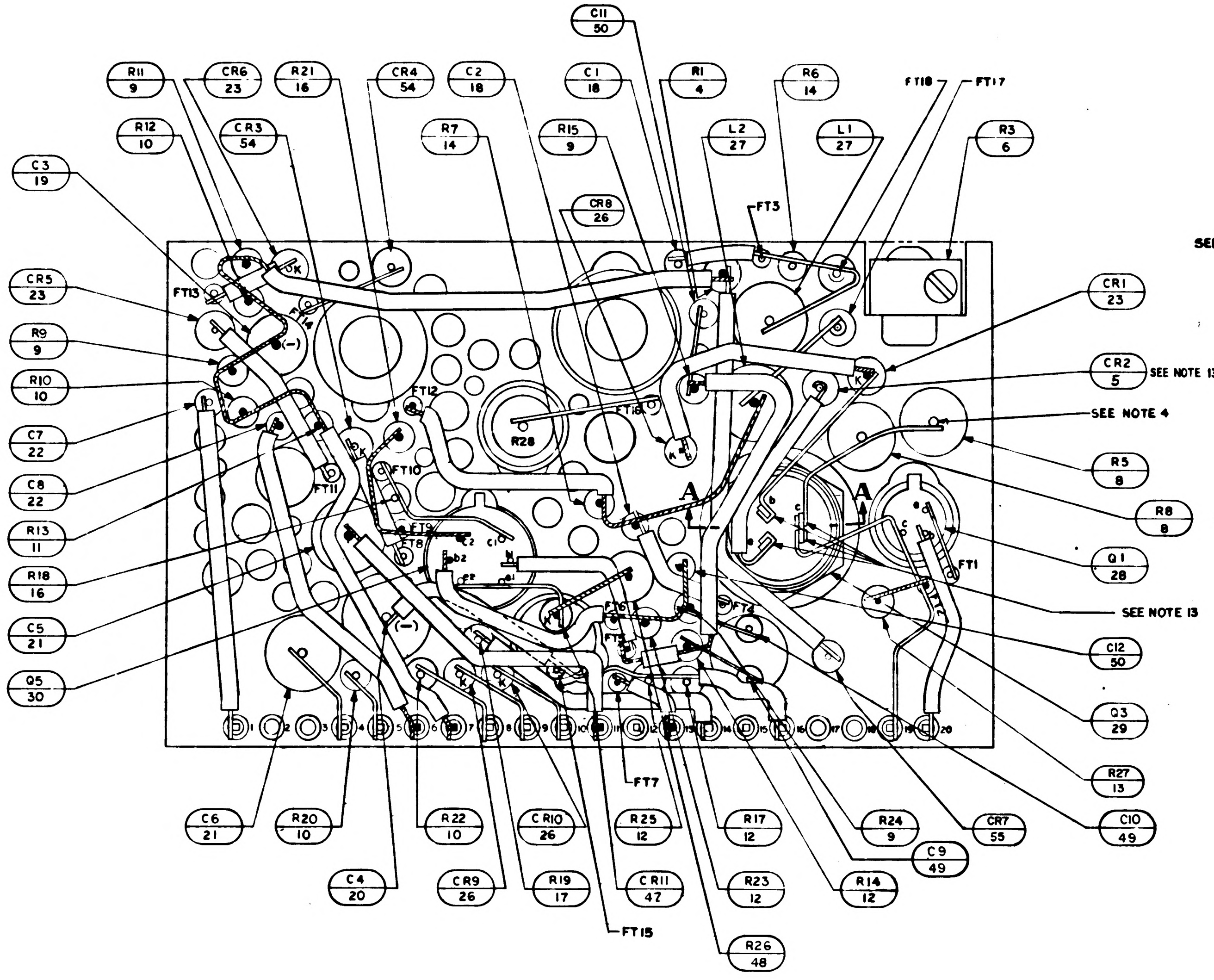
D 1007527

3H

1007527 REV LTR C SH 1

2/1007527

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.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R11 9
CR6 23
R21 16
CR4 54
C2 18
C1 18
R1 4
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R12 10
CR3 54
R7 14
R15 9
L2 27
L1 27
R3 6
FT18
FT17
C3 19
CR8 26
FT3
CR5 23
FT13
R9 9
R10 10
C7 22
C8 22
R13 11
R18 16
C5 21
Q5 30
CR1 23
CR2 5
SEE NOTE 13
SEE NOTE 4
R5 8
R8 8
Q1 28
SEE NOTE 13
C12 50
Q3 29
R27 13
C10 49
CR7 55
C9 49
R24 9
R14 12
R17 12
R23 12
R26 48
R25 12
CR11 47
FT15
R19 17
CR10 26
CR9 26
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FT16
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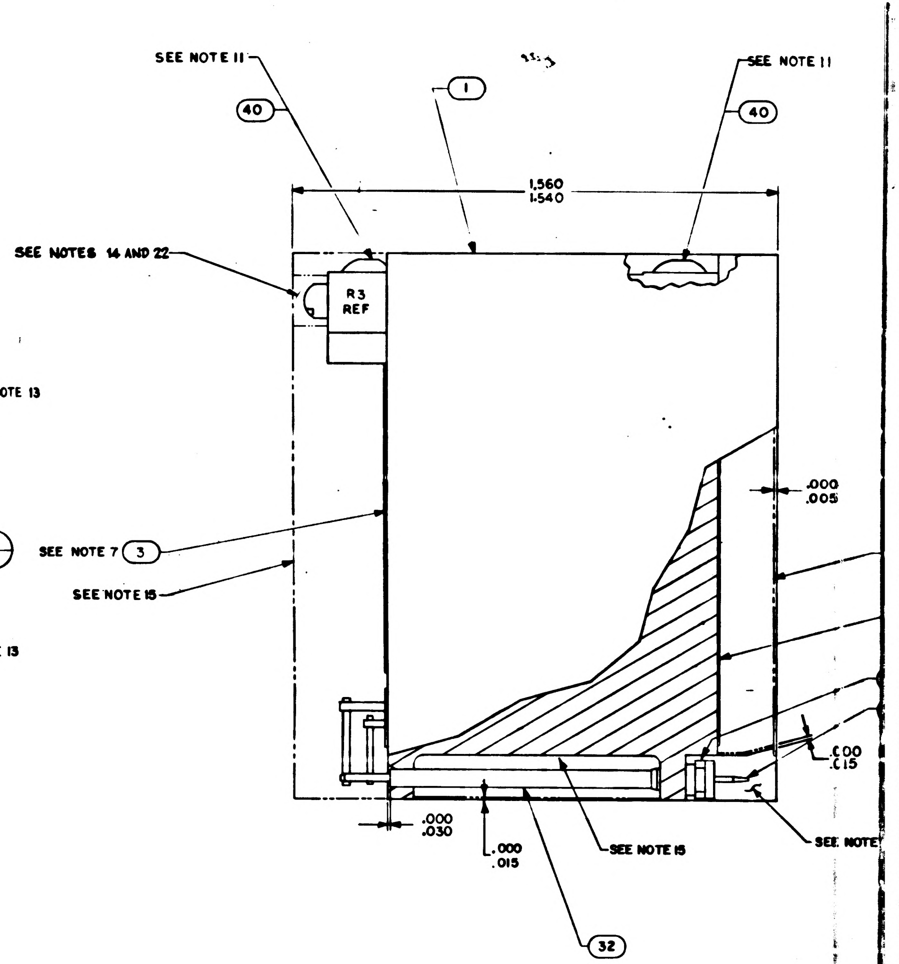
A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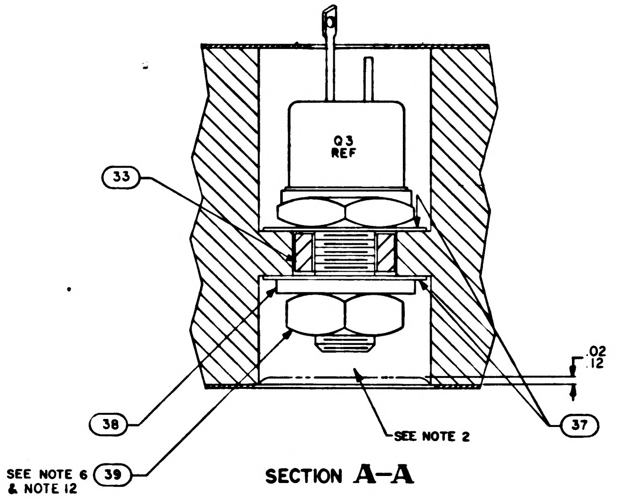
SEE NOTE 11
40
1.560
1.540
SEE NOTES 14 AND 22
R3 REF
.000
.005
SEE NOTE 7
3
SEE NOTE 15
.000
.015
.000
.030
.000
.015
SEE NOTE 15
SEE NOTE
32

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITHE STANDARDS PRESCRIBED BY MIL-D-70327.
2. FILL PER ND1002117
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. APPLY SEALING COMPOUND MIL-S-40083 CLASS 31 TO FIND NO. 39.
7. ON FIND NUMBERS 2 AND 3 ;
   - BROKEN PATHS INDICATE INSULATION SLEEVING.
   - K INDICATES CATHODE SIDE OF DIODE.
   - FT ( ) INDICATES FEED THRU
   - PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
   - C INDICATES COLLECTOR LEAD OF TRANSISTOR.
   - B INDICATES BASE LEAD OF TRANSISTOR.
   - E INDICATES EMITTER LEAD OF TRANSISTOR.
   - C ( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR.
   - B ( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR.
   - E ( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR.
8. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE)PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
9. STAKE FIND NO.4 THRU FIND NO.31, FIND NO.33 AND FIND NO.34 PER ND 1002009, METHOD C
10. AR DENOTES AS REQUIRED.
11. APPLY ZINC CHROMATE PRIMER MIL-P-6808 (ASG) TO THREADS OF FIND NO.40.
12. MOUNTING TORQUE FOR FIND NO.29 10/15 INCH POUND.
13. SOLDER PER ND 1002071.
14. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY NOT EXCEED THE NORMAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. MUST MEET REQUIREMENTS OF ND 1002136.
17. PROCURE PER PS-1007027
18. BOND FIND NO.51, 52 AND 53 TO FIND NO.41 PER ND1002237.
19. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
20. BOND FIND NO. 45 TO FIND NO.1 PER ND1002004 TYPE I
21. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.
22. SEAL CALIBRATION POT R3 PER ND1002009 METHOD C AFTER ALL THE REQUIREMENTS OF FTM 1007027 HAVE BEEN SATISFIED.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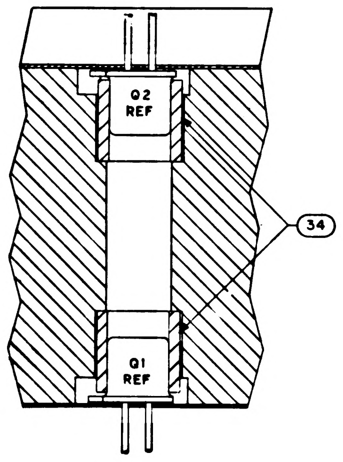
.12
SEE NOTE 2
37
38
SEE NOTE 6 & NOTE 12
39

SECTION A–A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Q1 REF
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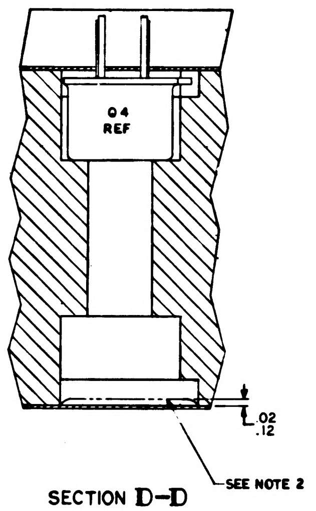
SECTION C–C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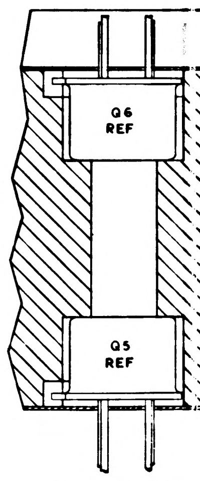
SEE NOTE 2

SECTION D–D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Q5 REF

SECTION E–E

REVISIONS 14699			
SYM	DESCRIPTION	DATE	APPROV
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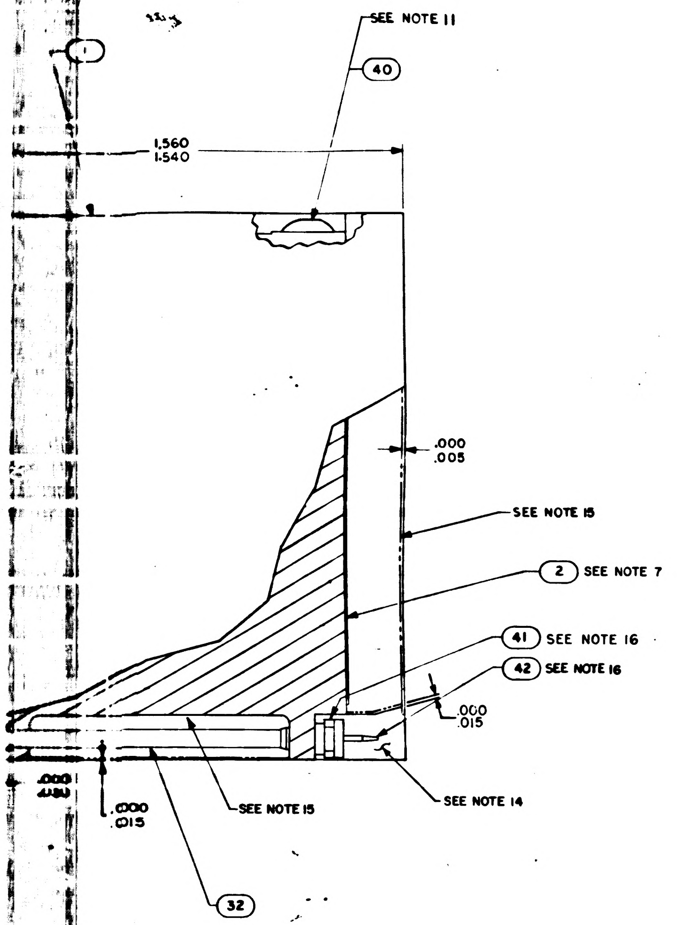
B	REVISED PER TDRR 16825	4 MAR 65	Em
C	REVISED PER TDRR 17341	12 MAR 65	EF
D	REVISED PER TDRR17623	26 MAR 65	RJJ W.T.
E	REVISED PER TDRR 19386	2 JUN 65	M.G. MEM


SEE NOTE 11
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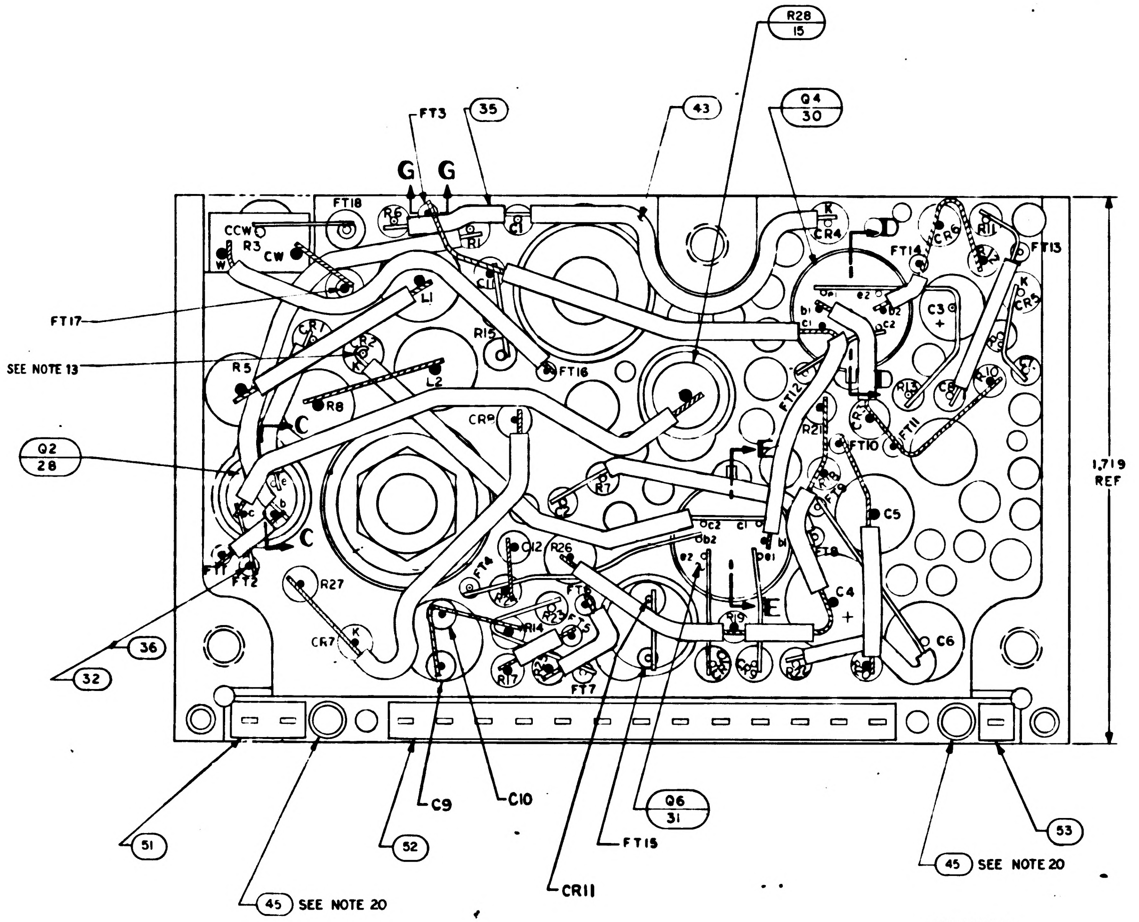
1.560
1.540
.000
.005
SEE NOTE 15
2 SEE NOTE 7
41 SEE NOTE 16
42 SEE NOTE 16
.000
.015
.000
.015
SEE NOTE 15
SEE NOTE 14
32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FT18
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CW
R6
R1
K
CR4
FT14
CR6
R11
FT13
FT17
L1
R15
C3
CR1
C2
SEE NOTE 13
R5
L2
FT16
CR8
FT12
CR2
R8
C
E
Q2
28
CR9
R7
R2
FT10
FT11
C5
1.719
REF
C
R27
Q12
R26
FT4
FT6
C4
CR7
R14
R17
FT7
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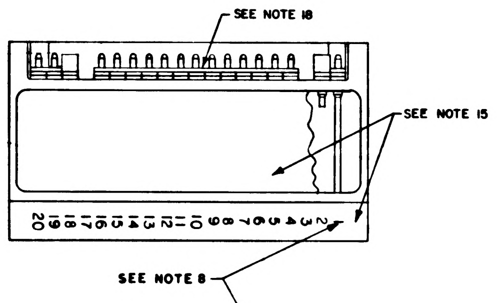
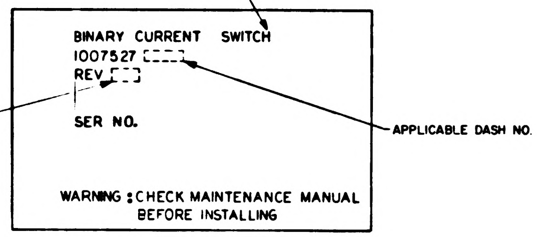
53


SEE NOTE 18
SEE NOTE 15
20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
SEE NOTE 8

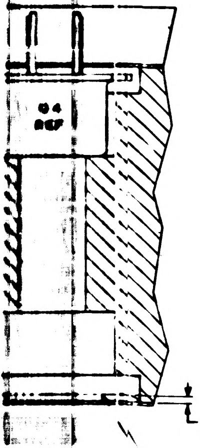

DWG REV LTR
APPLICABLE DASH NO.

BINARY CURRENT SWITCH
1007527 -
REV
SER NO.

WARNING : CHECK MAINTENANCE MANUAL BEFORE INSTALLING

MARKING VIEW

SCALE 2/1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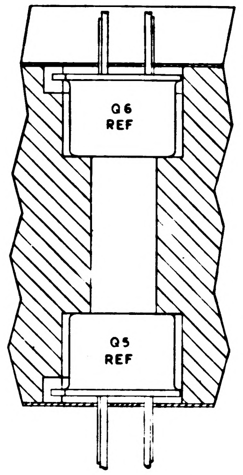
REF
.02
.12
SEE NOTE 2

SECTION D-D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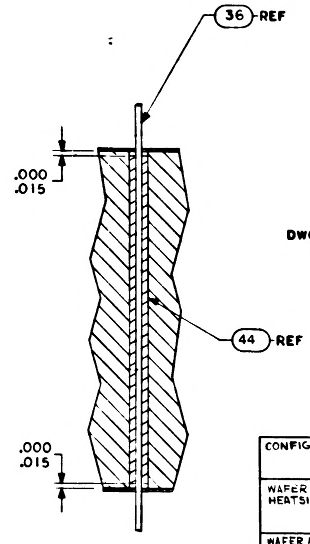
REF
Q5
REF

SECTION E-E


36 REF
.000
.015
44 REF
.000
.015

SECTION G-G

TABLE I

CONFIGURATION	MAT	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER AT PERIMETER	HEATSINK - FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	ADHESIVE	.12 MIN. 100% OF PERIMETER .25 MIN. 80% OF PERIMETER	.25 MIN 100% OF PERIMETER	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	ADHESIVE	CORNER FILLET & VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	.25 MIN 100% OF PERIMETER	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	PRIMER	N/A	N/A	.25 MIN. WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 TO .06 OF EXTERNAL EDGE

			1		1010830-20	DIODE, ZENER	55
			2		1010833-1	DIODE, ZENER	54
			1		1008540-1	GASKET, CONNECTOR MINIATURE	53
			1		1008540-13	GASKET, CONNECTOR MINIATURE	52
			1		1008540-2	GASKET, CONNECTOR MINIATURE	51
			2		1006777-1	CAPACITOR	50
			☒		1009523	SCHEMATIC	REF
			2		1006777-16	CAPACITOR	49
			1		1006750-40	RESISTOR	48
			1		1010372-6	DIODE, ZENER	47
							46
			2		1008256	POLARIZING PIN	45
			AR		1006776 - 22	INSULATION SLEEVING	44
			AR		1006776 - 21	INSULATION SLEEVING	43
			16		1006782 - 4	CONTACT, WRAPOST MALE MINAT	42
			16		1006775	INSULATOR, WRAPOST MALE MINAT	41
			2		1000093 - 3	SCREW, BOTTON HEAD	40
			1		MS 35650 - 104	NUT, PLAIN, HEX	39
			1		1008020-1	WASHER, FLAT	38
			2		1008024-1	WASHER, INSULATOR	37
			AR		1006757-8	WIRE, ELEC, .020 DIA	36
			AR		1006757-1	WIRE, ELEC, .010 X .020	35
			2		1008025-1	INSULATOR BUSHING	34
			1		1008021-1	INSULATOR, BUSHING	33
			AR		1006776-20	INSULATION SLEEVING	32
			1		1010715-1	TRANSISTOR	31
			2		1010376-4	TRANSISTOR	30
			1		1010269-1	TRANSISTOR	29
			2		1010357-1	TRANSISTOR	28
			2		1010388-39	INDUCTOR	27
			3		1010394	DIODE	26
			~~1~~		~~1010286-20~~	~~DIODE~~	~~25~~
			~~2~~		~~1010462-6~~	~~DIODE, ZENER~~	~~24~~
			3		1010385	DIODE	23
			2		1006777-24	CAP., FIXED CER	22
			2		1006777-33	CAP., FIXED CER	21
			1		1010393-039	CAP., FIXED TANT	20
			1		1006755-73	CAP., FIXED TANT	19
			2		1006777-13	CAP., FIXED CER	18
			1		1006750-15	RESISTOR, FIXED MF	17
			2		1006750-56	RESISTOR, FIXED MF	16
			1		1010389-88	RESISTOR, FIXED MF	15
			2		1010369-85	RESISTOR, FIXED MF	14
			1		1006750-78	RESISTOR, FIXED MF	13
			4		1006750-53	RESISTOR, FIXED MF	12
			1		1006750-1	RESISTOR, FIXED MF	11
			4		1006750-67	RESISTOR, FIXED MF	10
			4		1006750-81	RESISTOR, FIXED MF	9
			2		1010389-78	RESISTOR, FIXED WW	8
							7
			1		1010373-12	RESISTOR, VAR	6
			1		1010497	DIODE	5
			1		1010364-697	RESISTOR, FIXED MF	4
			1		1008581	INSULATOR, TOP	3
			1		1008580	INSULATOR, BOTTOM	2
			1		1007035	HEATSINK	1
			011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
QUANTITY REQUIRED					LIST OF MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX ±.02 XXX ±.005 ANGLES ± 1/2°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN J. Kilcommons DATE 23 SEP 64
CHECKED 25 SEP 64
APPROVAL
APPROVAL 12/4/64
NASA APPROVAL 12-8-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BINARY CURRENT SWITCH
COMPUTER OUTPUT
ASSEMBLY

CODE IDENT NO 80230
SIZE J
NASA DRAWING NO. 1007527
SCALE 5/1
WT
SHEET 1 OF 1

1007527 REV LTR E SH 1

27-1007527

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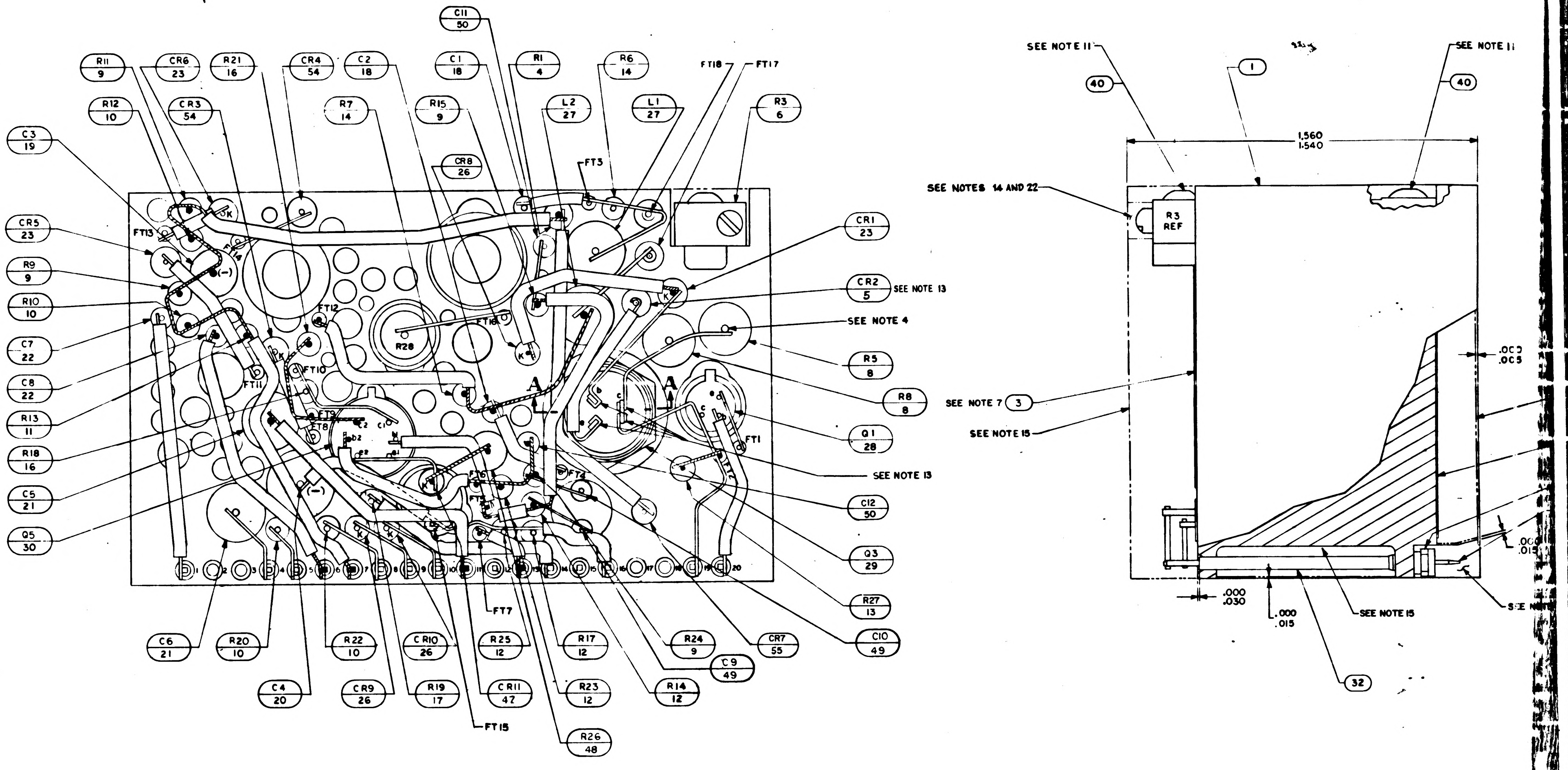
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R15 9
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L1 27
R3 6
C3 19
CR8 26
FT3
CR5 23
FT13
CR1 23
R9 9
CR2 5
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R10 10
FT12
R28
FT16
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C7 22
A
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R5 8
C8 22
FT11
FT10
R8 8
R13 11
FT8
Q1 28
R18 16
FT1
SEE NOTE 13
C5 21
FT5
FT4
C12 50
(-)
(-)
Q5 30
Q3 29
K
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FT7
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R22 10
CR10 26
R25 12
R17 12
R24 9
CR7 55
C9 49
C4 20
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CR11 47
R23 12
R14 12
FT15
R26 48
SEE NOTE 11
SEE NOTE 11
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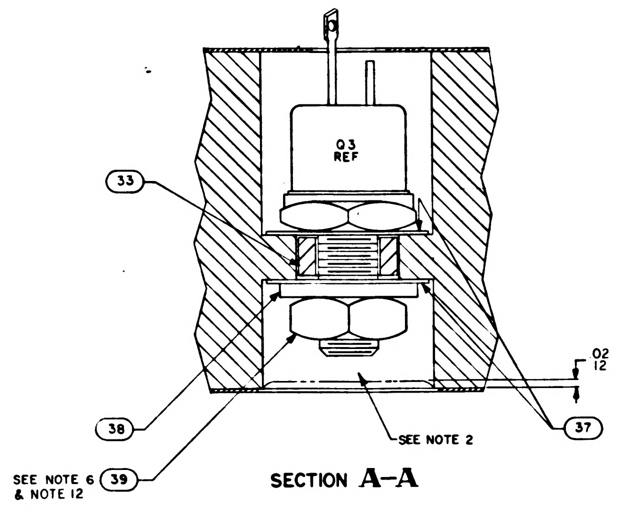
1.540
SEE NOTES 14 AND 22
R3 REF
SEE NOTE 7
3
SEE NOTE 15
.000
.005
.000
.015
.000
.030
.000
.015
SEE NOTE 15
SEE NOTE
32

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITHE STANDARDS PRESCRIBED BY MIL-D-70327.
2. FILL PER ND1002117
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. APPLY SEALING COMPOUND MIL-S-40083 CLASS 31 TO FIND NO. 39.
7. ON FIND NUMBERS 2 AND 3 ;
   - BROKEN PATHS INDICATE INSULATION SLEEVING.
   - K INDICATES CATHODE SIDE OF DIODE.
   - FT ( ) INDICATES FEED THRU
   - PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
   - C INDICATES COLLECTOR LEAD OF TRANSISTOR.
   - B INDICATES BASE LEAD OF TRANSISTOR.
   - E INDICATES EMITTER LEAD OF TRANSISTOR.
   - C ( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR.
   - B ( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR.
   - E ( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR.
8. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE)PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
9. STAKE FIND NO.4 THRU FIND NO.31, FIND NO.33 AND FIND NO.34 PER ND 1002009, METHOD C
10. AR DENOTES AS REQUIRED.
11. APPLY ZINC CHROMATE PRIMER MIL-P-6808 (ASG) TO THREADS OF FIND NO.40.
12. MOUNTING TORQUE FOR FIND NO.29 10/15 INCH POUND.
13. SOLDER PER ND 1002071.
14. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY NOT EXCEED THE NORMAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. MUST MEET REQUIREMENTS OF ND 1002136.
17. PROCURE PER PS-1007027
18. BOND FIND NO.51, 52 AND 53 TO FIND NO.41 PER ND1002237.
19. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
20. BOND FIND NO. 45 TO FIND NO.1 PER ND1002004 TYPE I
21. ~~BOND A .25 MIN WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE II.~~
22. SEAL CALIBRATION POT R3 PER ND 1002009 METHOD C AFTER ALL THE REQUIREMENTS OF FTM 1007027 HAVE BEEN SATISFIED.
23. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF PRIMER BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE I. PRIMER TO CONSIST OF SIX PARTS BY VOLUME OF 1012504-1 AND ONE PART BY VOLUME OF 1012504-2. APPLY. MATERIAL AND PRIMER AS INDICATED IN TABLE I.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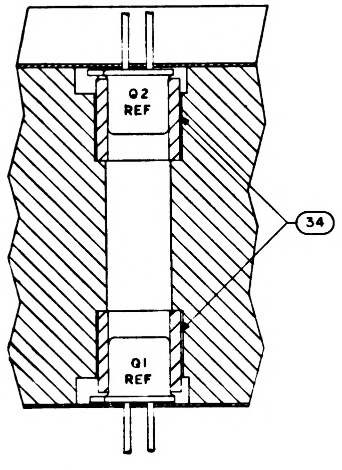
SEE NOTE 6
& NOTE 12
39

SECTION **A-A**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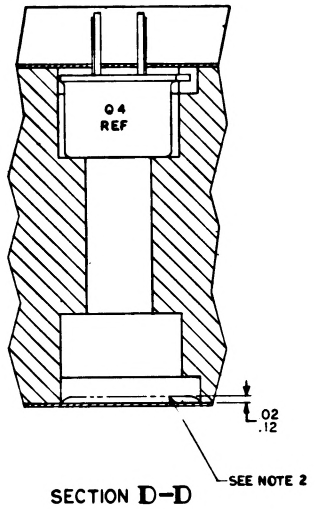
SECTION **C-C**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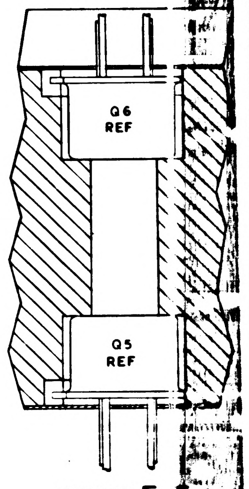
SEE NOTE 2

SECTION **D-D**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Q5 REF

SECTION E-E

1007527	REV E	SH 1

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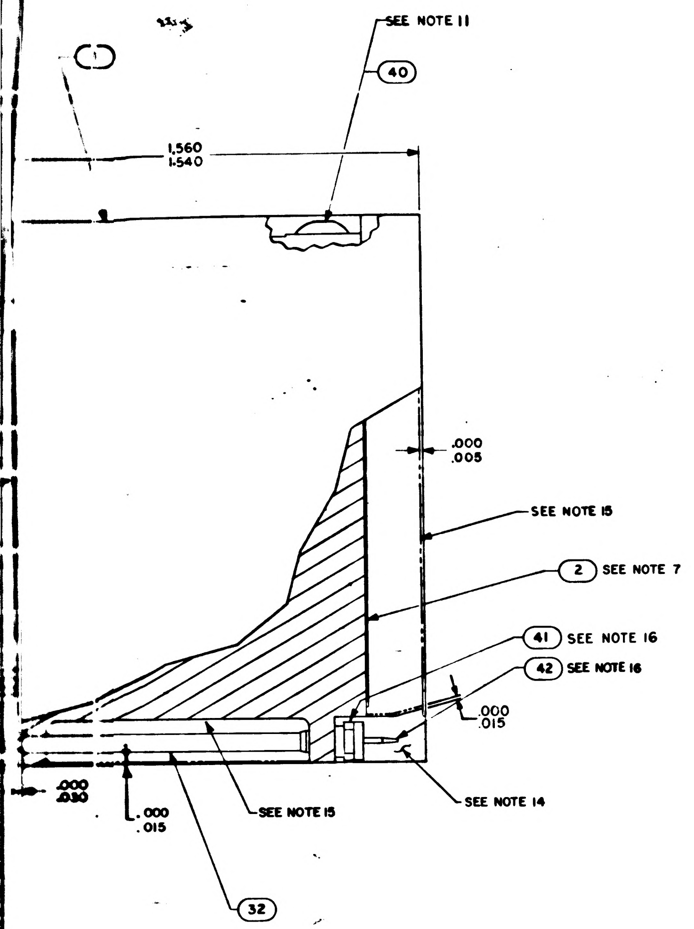
(M)	B	REVISED PER TDRR 16825	4 MAR 65	
(M)	C	REVISED PER TDRR 17341	12 MAR 65	EF
(M)	D	REVISED PER TDRR17623	26 MAR 65	RJJ
	E	REVISED PER TDRR 19386	2 JUN 65	M.G. MEM
	F	REVISED PER TDRR 19435	9 JUN 65	J.R.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41 SEE NOTE 16
42 SEE NOTE 16
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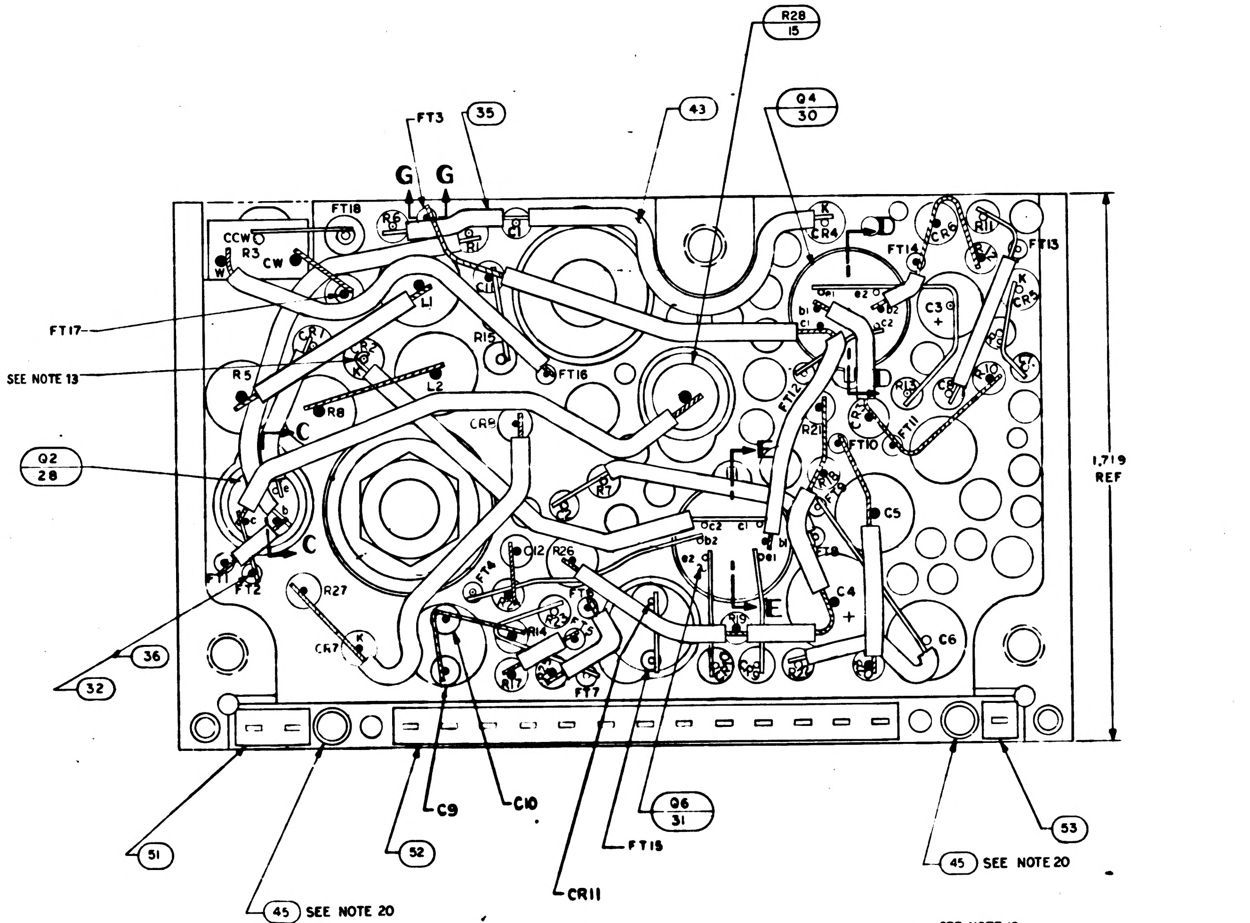
SEE NOTE 15
SEE NOTE 14
32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G G
FT18
CCW
R3
CW
R1
L1
FT17
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R5
R8
L2
CR9
R15
FT16
FT14
FT13
C3
CR4
K
D
FT12
R2
FT10
FT11
C5
C4
C6
FT8
E
Q2
28
C
FT1
FT2
R27
CR7
C12
R26
FT4
R14
FT7
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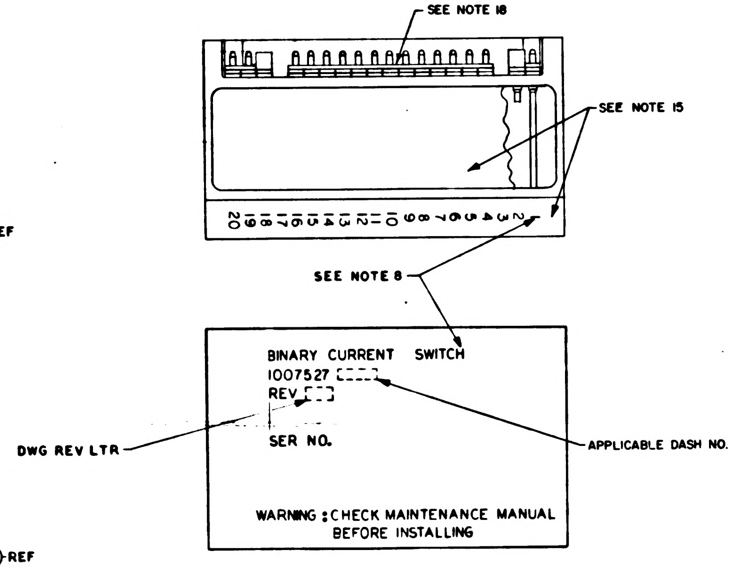
36
51
45 SEE NOTE 20
52
C9
C10
CR11
Q6
31
FT15
45 SEE NOTE 20
53


SEE NOTE 18
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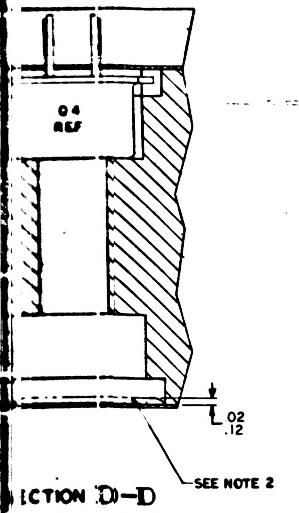
20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
SEE NOTE 8
BINARY CURRENT SWITCH
1007527
REV
SER NO.
DWG REV LTR
APPLICABLE DASH NO.
WARNING: CHECK MAINTENANCE MANUAL BEFORE INSTALLING

MARKING VIEW

SCALE 2/1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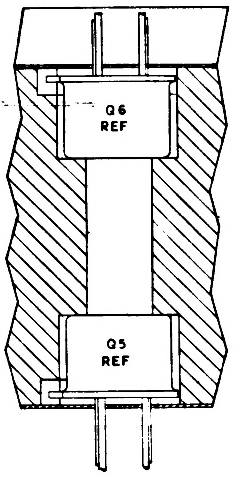
SECTION D-D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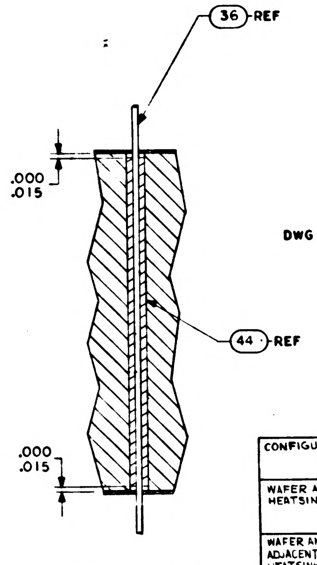
SECTION E-E


36 REF
44 REF
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.015
.000
.015

SECTION G-G

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN. WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03±.03 OF EXTERNAL EDGE

QUANTITY REQUIRED							
			011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
			1		1010830-20	DIODE, ZENER	55
			2		1010833-1	DIODE, ZENER	54
			1		1008540-1	GASKET, CONNECTOR MINIATURE	53
			1		1008540-13	GASKET, CONNECTOR MINIATURE	52
			1		1008540-2	GASKET, CONNECTOR MINIATURE	51
			2		1006777-1	CAPACITOR	50
			☒		1009523	SCHEMATIC	REF
			2		1006777-16	CAPACITOR	49
			1		1006750-40	RESISTOR	48
			1		1010372-6	DIODE, ZENER	47
							46
			2		1008256	POLARIZING PIN	45
			AR		1006776-22	INSULATION SLEEVING	44
			AR		1006776-21	INSULATION SLEEVING	43
			16		1006782-4	CONTACT, WRAPOST MALE MINAT	42
			16		1006775	INSULATOR, WRAPOST MALE MINAT	41
			2		1000093-3	SCREW, BOTTON HEAD	40
			1		MS 35650-104	NUT, PLAIN, HEX	39
			1		1008020-1	WASHER, FLAT	38
			2		1008024-1	WASHER, INSULATOR	37
			AR		1006757-8	WIRE, ELEC, .020 DIA	36
			AR		1006757-1	WIRE, ELEC, .010 X .020	35
			2		1008025-1	INSULATOR BUSHING	34
			1		1008021-1	INSULATOR, BUSHING	33
			AR		1006776-20	INSULATION SLEEVING	32
			1		1010715-1	TRANSISTOR	31
			2		1010376-4	TRANSISTOR	30
			1		1010269-1	TRANSISTOR	29
			2		1010357-1	TRANSISTOR	28
			2		1010388-39	INDUCTOR	27
			3		1010394	DIODE	26
			1		1010286-20	DIODE	25
			2		1010462-6	DIODE, ZENER	24
					1010385	DIODE	23
			2		1006777-24	CAP, FIXED CER	22
			2		1006777-33	CAP, FIXED CER	21
			1		1010393-039	CAP, FIXED TANT	20
			1		1006755-73	CAP, FIXED TANT	19
			2		1006777-13	CAP, FIXED CER	18
			1		1006750-15	RESISTOR, FIXED MF	17
			2		1006750-56	RESISTOR, FIXED MF	16
			1		1010389-88	RESISTOR, FIXED MF	15
			2		1010369-85	RESISTOR, FIXED MF	14
			1		1006750-78	RESISTOR, FIXED MF	13
			4		1006750-53	RESISTOR, FIXED MF	12
			1		1006750-1	RESISTOR, FIXED MF	11
			4		1006750-67	RESISTOR, FIXED MF	10
			4		1006750-81	RESISTOR, FIXED MF	9
			2		1010389-78	RESISTOR, FIXED WW	8
							7
			1		1010373-12	RESISTOR, VAR	6
			1		1010497	DIODE	5
			1		1010364-697	RESISTOR, FIXED MF	4
			1		1008581	INSULATOR, TOP	3
			1		1008580	INSULATOR, BOTTOM	2
			1		1007035	HEATSINK	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX±.02 XXX±.005 ANGLES ± 1/2°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-4065
DRAWN J. Kilroney DATE 28 SEP 64
CHECKED Q. Ulrich 25 SEP 64
APPROVAL
APPROVAL 12/4/64
NASA APPROVAL 12-8-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BINARY CURRENT SWITCH COMPUTER OUTPUT ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007527
SCALE 5/1
WT
SHEET 1 OF 1

1007527 F

3H

	REV LTR	SH
1007527	F	1

2/1007527

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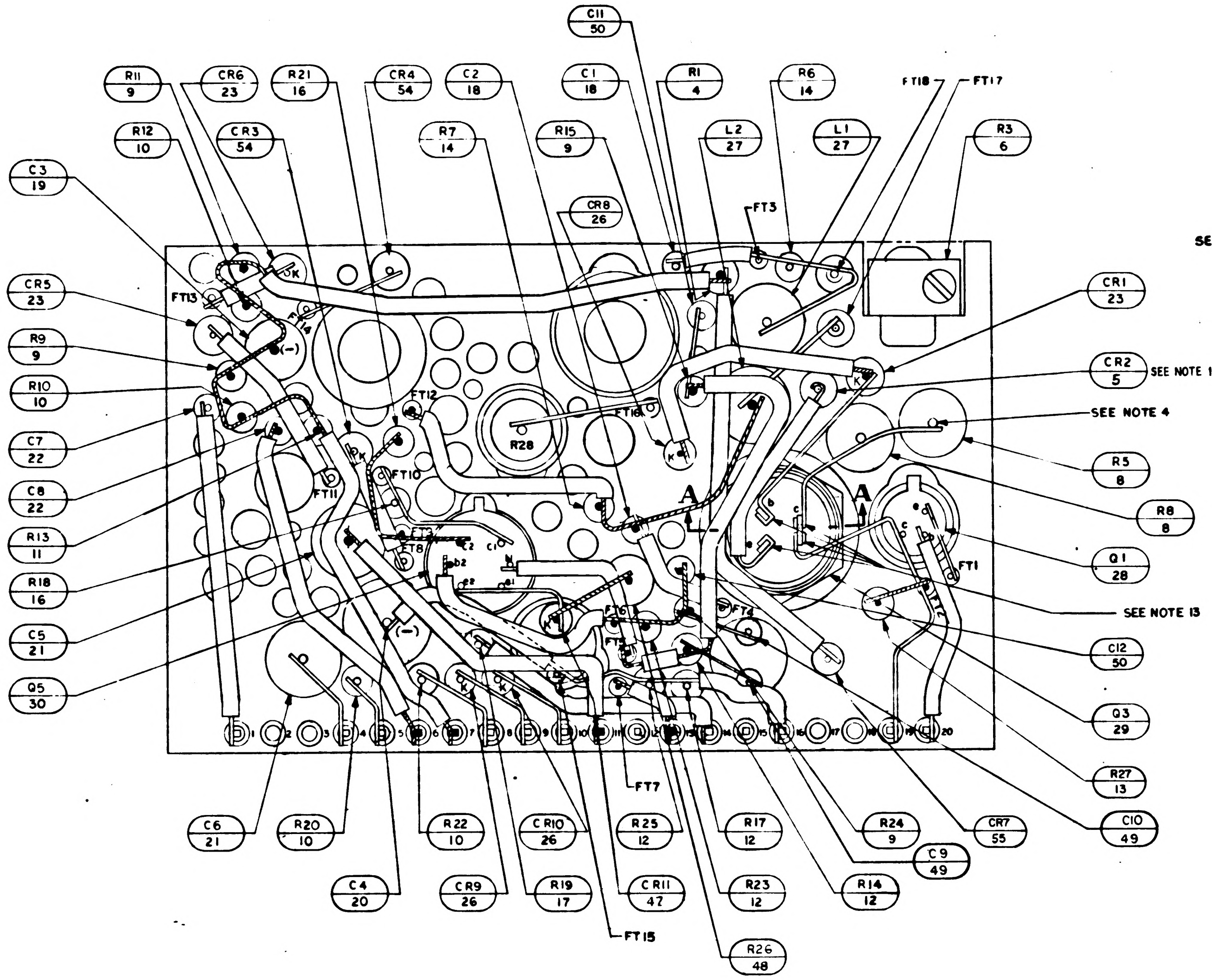
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L1 27
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C3 19
CR8 26
FT3
CR5 23
FT13
R9 9
R10 10
C7 22
C8 22
R13 11
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C5 21
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SEE NOTE 4
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C9 49
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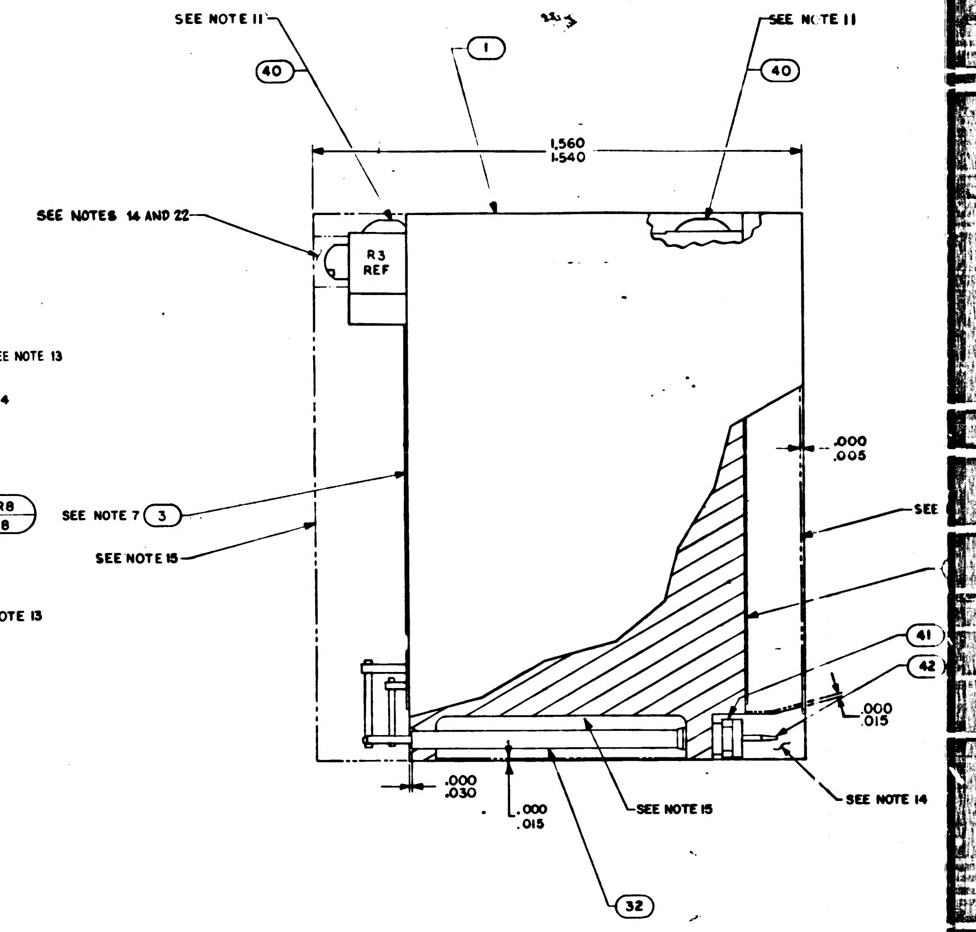
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.005
SEE
41
42
.000
.015
.000
.030
.000
.015
SEE NOTE 15
SEE NOTE 14
32

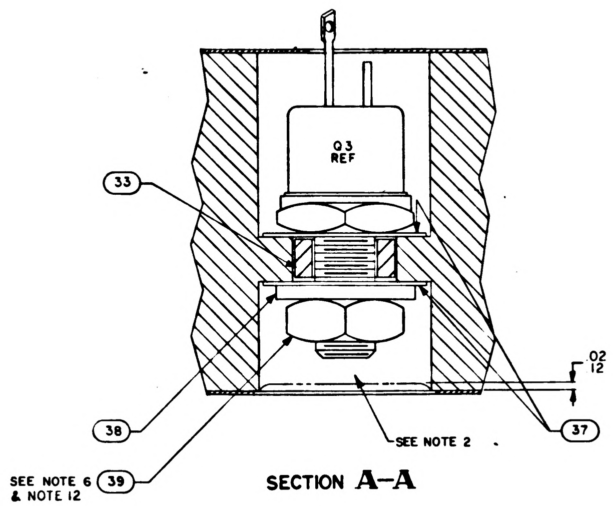
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITHE STANDARDS PRESCRIBED BY MIL-D-70327.
2. FILL PER ND1002117
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. APPLY SEALING COMPOUND MIL-S-40083 CLASS 31 TO FIND NO. 39.
7. ON FIND NUMBERS 2 AND 3 ;
   BROKEN PATHS INDICATE INSULATION SLEEVING.
   K INDICATES CATHODE SIDE OF DIODE.
   FT ( ) INDICATES FEED THRU
   PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
   C INDICATES COLLECTOR LEAD OF TRANSISTOR.
   B INDICATES BASE LEAD OF TRANSISTOR.
   E !NDICATES EMITTER LEAD OF TRANSISTOR.
   C ( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR.
   B ( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR.
   E ( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR.
8. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE)PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
9. STAKE FIND NO.4 THRU FIND NO.31, FIND NO.33 AND FIND NO.34 PER ND 1002009, METHOD C
10. AR DENOTES AS REQUIRED.
11. APPLY ZINC CHROMATE PRIMER MIL-P-6808 (ASG) TO THREADS OF FIND NO.40.
12. MOUNTING TORQUE FOR FIND NO.29 10/15 INCH POUND.
13. SOLDER PER ND 1002071.
14. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY NOT EXCEED THE NORMAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. MUST MEET REQUIREMENTS OF ND 1002136.
17. PROCURE PER PS-1007027
18. BOND FIND NO.51, 52 AND 53 TO FIND NO.41 PER ND1002237.
19. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
20. BOND FIND NO. 45 TO FIND NO.1 PER ND1002004 TYPE I

~~21. [illegible] TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A [illegible] WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS [illegible]~~

22. SEAL CALIBRATION POT R3 PER ND 1002009 METHOD C AFTER ALL THE REQUIREMENTS OF FTM 1007027 HAVE BEEN SATISFIED.
23. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.

34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SEE NOTE 6 & NOTE 12
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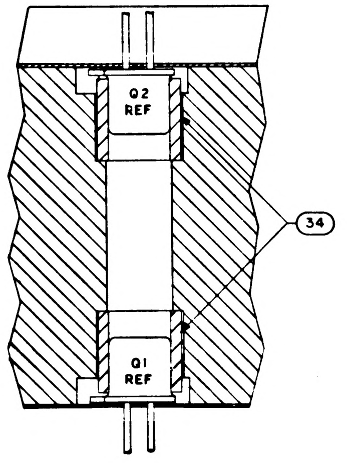
SEE NOTE 2
37
.02
.12

SECTION A–A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Q1 REF
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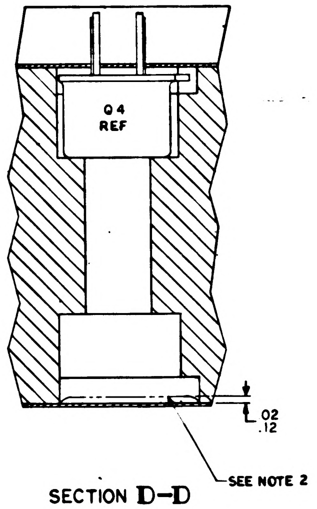
SECTION C–C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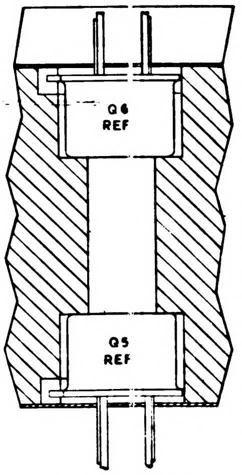
SEE NOTE 2

SECTION D–D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Q5 REF

SECTION E–E

REVISIONS			
SYM	DESCRIPTION	DATE	APPROV
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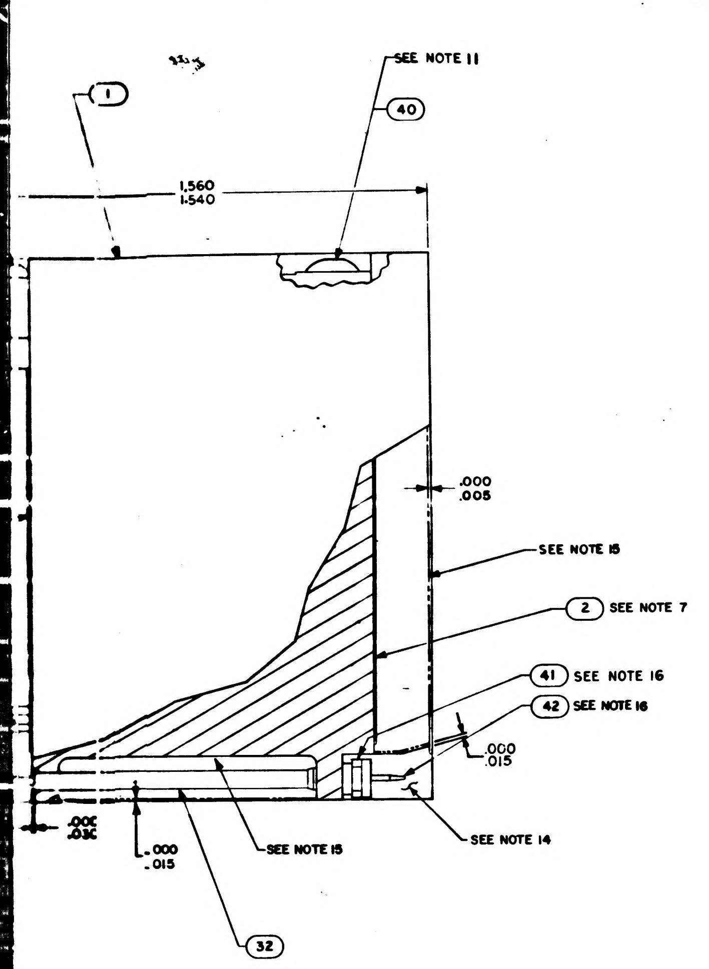
B	REVISED PER TDRR 16825	4 MAR 65	
C	REVISED PER TDRR 17341	12-MAR 65	
D	REVISED PER TDRR17623	26 MAR 65	RJJ
E	REVISED PER TDRR 19386	2-JUN 65	M.G.
F	REVISED PER TDRR 19435	[illegible]	
G	REVISED PER TDRR 19505	8-JUN-65	



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SEE NOTE 15
SEE NOTE 14
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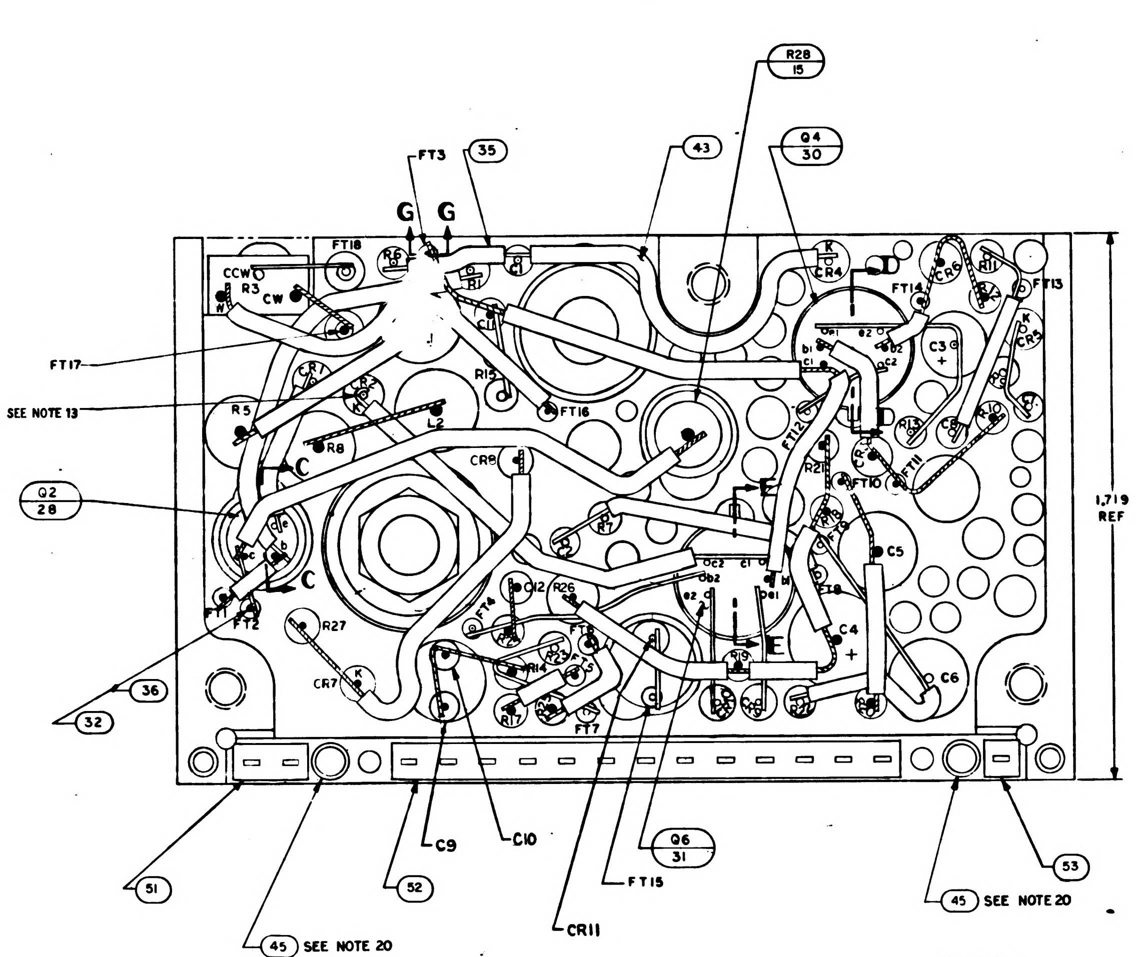

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R5
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R8
C11
FT16
CR4
FT14
FT13
CR3
C3
CR5
R11
R13
CR2
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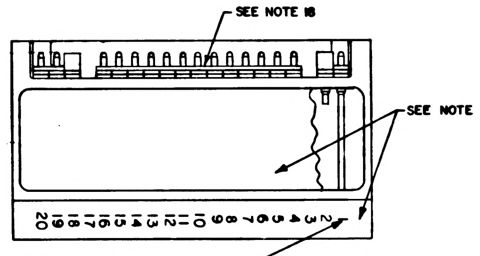

SEE NOTE 18
SEE NOTE 15
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SEE NOTE 8

BINARY CURRENT SWITCH
1007527 -
REV

SER NO.

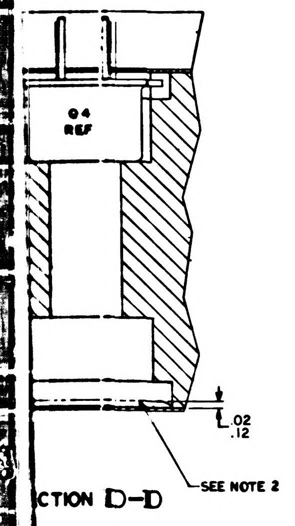
WARNING : CHECK MAINTENANCE MANUAL
BEFORE INSTALLING

DWG REV LTR

APPLICABLE DASH NO.

MARKING VIEW

SCALE 2/1



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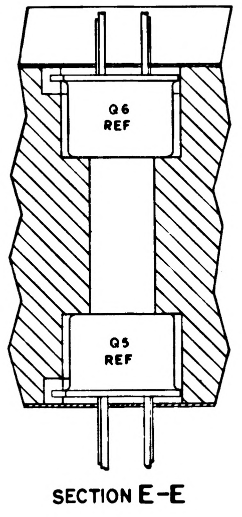
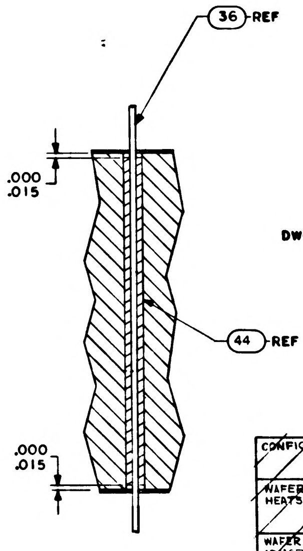
SECTION D-D



Q6
REF
Q5
REF

SECTION E-E



36 REF
.000
.015
44 REF
.000
.015

SECTION G-G

TABLE I

~~CONFIGURATION~~	~~BOND BETWEEN WAFER AND HEATSINK~~	~~TOP OF WAFER~~	~~HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE~~
~~WAFER AND FLAT HEATSINK~~	~~100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE, 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~WAFER AND ADJACENT VERTICAL HEATSINK SURFACE~~	~~CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~HEATSINK FOAM CONTACT SURFACE PERIMETER~~	~~N/A~~	~~N/A~~	~~.25 MIN. WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03±.03 OF EXTERNAL EDGE~~

			1		1010830-20	DIODE, ZENER	55
			2		1010833-1	DIODE, ZENER	54
			1		1008540-1	GASKET, CONNECTOR MINIATURE	53
			1		1008540-13	GASKET, CONNECTOR MINIATURE	52
			1		1008540-2	GASKET, CONNECTOR MINIATURE	51
			2		1006777-1	CAPACITOR	50
			☒		1009523	SCHEMATIC	REF
			2		1006777-16	CAPACITOR	49
			1		1006750-40	RESISTOR	48
			1		1010372-6	DIODE, ZENER	47
							46
			2		1008256	POLARIZING PIN	45
			AR		1006776 - 22	INSULATION SLEEVING	44
			AR		1006776 - 21	INSULATION SLEEVING	43
			16		1006782 — 4	CONTACT, WRAPOST MALE MINAT	42
			16		1006775	INSULATOR, WRAPOST MALE MINAT	41
			2		1000093 — 3	SCREW, BOTTON HEAD	40
			1		MS 35650 — 104	NUT, PLAIN, HEX	39
			1		1008020—1	WASHER, FLAT	38
			2		1008024—1	WASHER, INSULATOR	37
			AR		1006757—8	WIRE, ELEC, .020 DIA	36
			AR		1006757—L	WIRE, ELEC, .010 X .020	35
			2		1008025—1	INSULATOR BUSHING	34
			1		1008021 — 1	INSULATOR, BUSHING	33
			AR		1006776—20	INSULATION SLEEVING	32
			1		1010715 —1	TRANSISTOR	31
			2		1010376 — 4	TRANSISTOR	30
			1		1010269 — 1	TRANSISTOR	29
			2		1010357-1	TRANSISTOR	28
			2		1010388 — 39	INDUCTOR	27
			3		1010394	DIODE	26
			1		1010286-20	DIODE	25
			2		1010462 - 6	DIODE, ZENER	24
					1010385	DIODE	23
			2		1006777—24	CAP., FIXED CER	22
			2		1006777—33	CAP., FIXED CER	21
			1		1010393 —039	CAP., FIXED TANT	20
			1		1006755 —73	CAP., FIXED TANT	19
			2		1006777 —13	CAP., FIXED CER	18
			1		1006750 —15	RESISTOR, FIXED MF	17
			2		1006750 — 56	RESISTOR, FIXED MF	16
			1		1010389 - 88	RESISTOR, FIXED MF	15
			2		1010369 — 85	RESISTOR, FIXED MF	14
			1		1006750-78	RESISTOR, FIXED MF	13
			4		1006750 —53	RESISTOR, FIXED MF	12
			1		1006750 —1	RESISTOR, FIXED MF	11
			4		1006750—67	RESISTOR, FIXED MF	10
			4		1006750—81	RESISTOR, FIXED MF	9
			2		1010389 —78	RESISTOR, FIXEDWW	8
							7
			1		1010373 —12	RESISTOR, VAR	6
			1		1010497	DIODE	5
			1		1010364—697	RESISTOR, FIXED MF	4
			1		1008581	INSULATOR, TOP	3
			1		1008580	INSULATOR, BOTTOM	2
			1		1007035	HEATSINK	1
QUANTITY REQUIRED			011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
					LIST OF MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX±.02 XXX±.005 ANGLES ± 1/2
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN J. Kilmer DATE 23 SEP 64
CHECKED A. Usnich 25 SEP 64
APPROVAL
APPROVAL 12/4/64
NASA APPROVAL 12-5-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BINARY CURRENT SWITCH COMPUTER OUTPUT ASSEMBLY

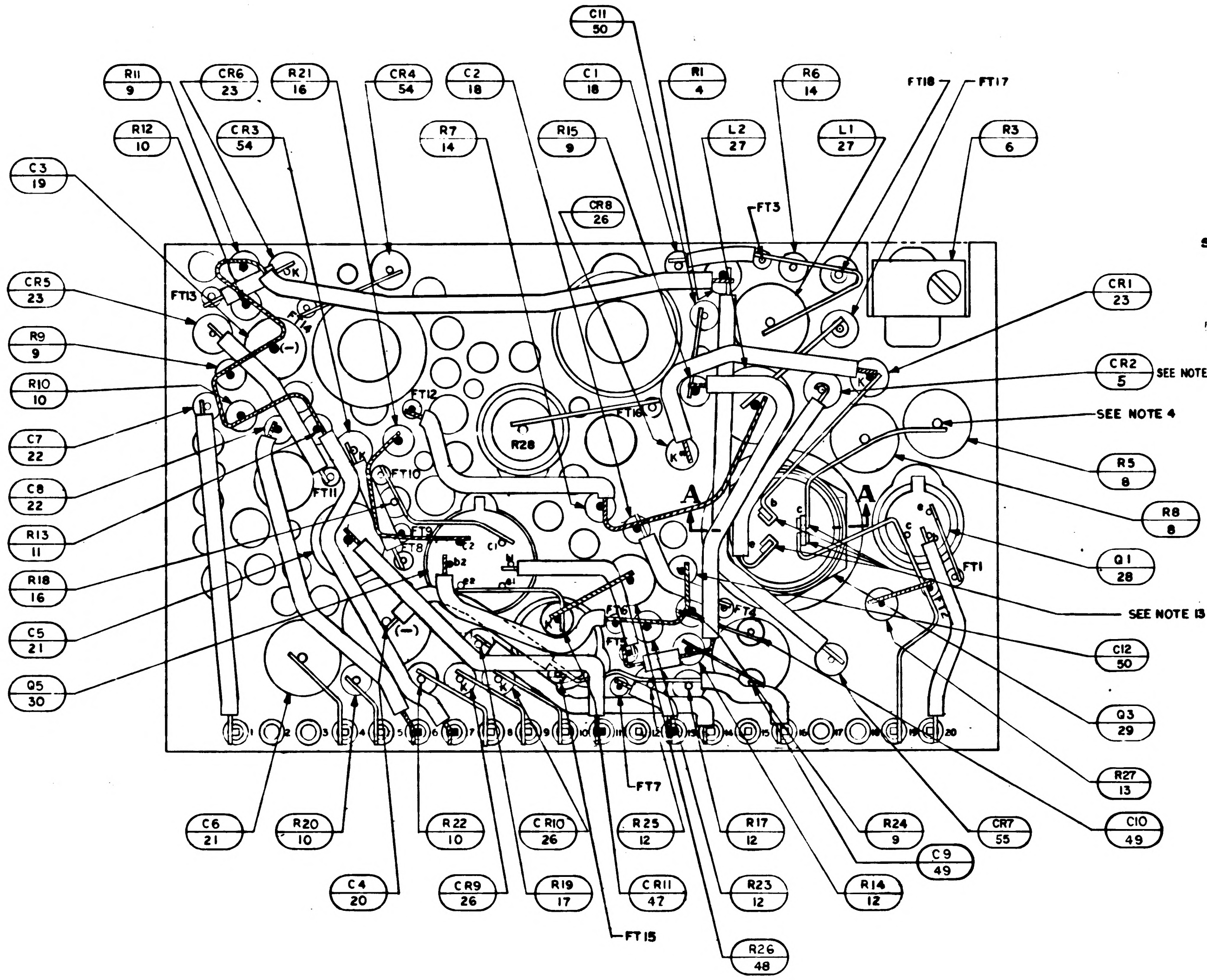
CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007527
SCALE 5/1
WT
SHEET 1 OF 1

1007527 G

1007527 REV G SH 1

27 1007527

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.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R15 9
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L1 27
R3 6
C3 19
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FT13
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R28
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R5 8
C8 22
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R8 8
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R18 16
FT6
FT4
FT2
SEE NOTE 13
C5 21
FT5
C12 50
Q5 30
K
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c b e
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Q3 29
FT7
R27 13
C6 21
R20 10
R22 10
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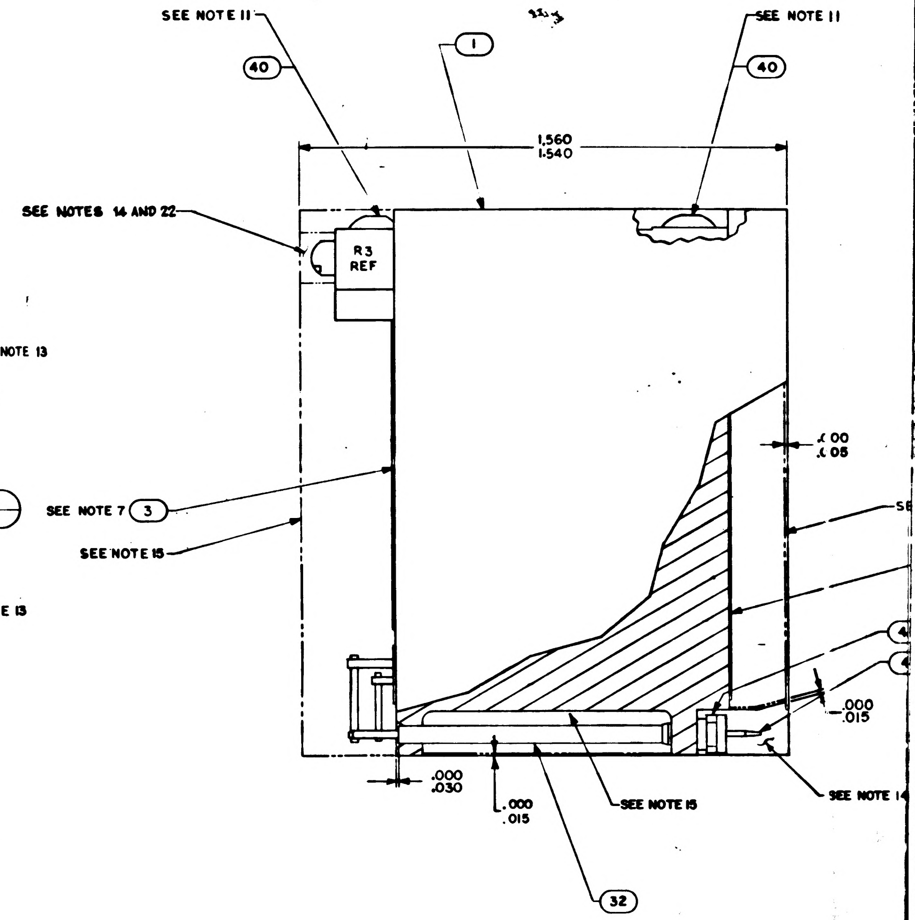
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SEE NOTES 14 AND 22
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SEE NOTE 7
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SEE NOTE 15
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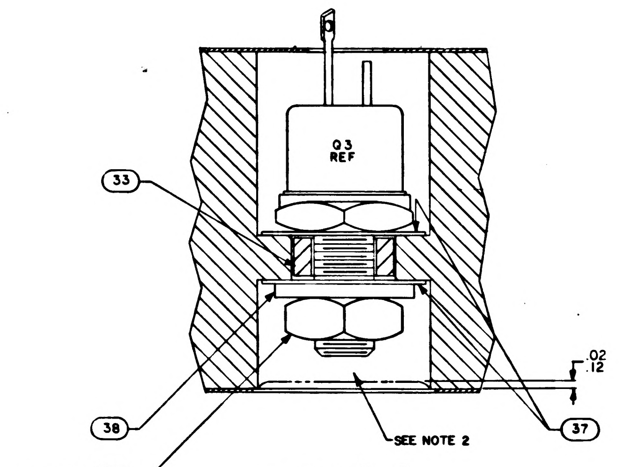
.030
.000
.015
SEE NOTE 15
SEE NOTE 14
32

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITHE STANDARDS PRESCRIBED BY MIL-D-70327.
2. FILL PER ND1002117

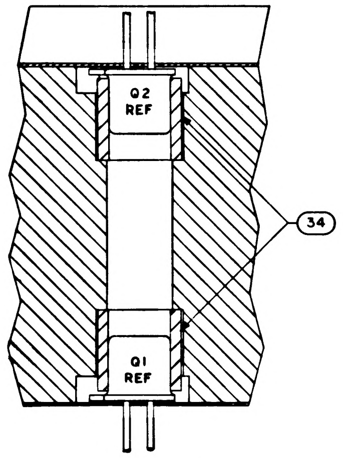
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. APPLY SEALING COMPOUND MIL-S-40083 CLASS 31 TO FIND NO. 39.
7. ON FIND NUMBERS 2 AND 3 ;
    BROKEN PATHS INDICATE INSULATION SLEEVING.
    K INDICATES CATHODE SIDE OF DIODE.
    FT ( ) INDICATES FEED THRU
    PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
    C INDICATES COLLECTOR LEAD OF TRANSISTOR.
    B INDICATES BASE LEAD OF TRANSISTOR.
    E INDICATES EMITTER LEAD OF TRANSISTOR.
    C ( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR.
    B ( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR.
    E ( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR.
8. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE)PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
9. STAKE FIND NO.4 THRU FIND NO.31, FIND NO.33 AND FIND NO.34 PER ND 1002009, METHOD H.
10. AR DENOTES AS REQUIRED.
11. APPLY ZINC CHROMATE PRIMER MIL-P-6808 (ASG) TO THREADS OF FIND NO.40.
12. MOUNTING TORQUE FOR FIND NO.29 10/15 INCH POUND.
13. SOLDER PER ND 1002071.
14. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY NOT EXCEED THE NORMAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. MUST MEET REQUIREMENTS OF ND 1002136.
17. PROCURE PER PS-1007027
18. BOND FIND NO.51, 52 AND 53 TO FIND NO.41 PER ND1002237.
19. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
20. BOND FIND NO. 45 TO FIND NO.1 PER ND1002004 TYPE I
21. ~~BOND A .25 [illegible] WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 [illegible] WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND [illegible]~~
22. SEAL CALIBRATION POT R3 PER ND1002009 METHOD C AFTER ALL THE REQUIREMENTS OF FTM 1007027 HAVE BEEN SATISFIED.
23. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II.~~ APPLY ~~MATERIAL AND COATING AS INDICATED IN TABLE I.~~


Q3 REF
33
38
SEE NOTE 6 & NOTE 12
39
SEE NOTE 2
.02
.12
37

SECTION A–A

24. *CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.*

25. *EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F. FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.*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Q1 REF
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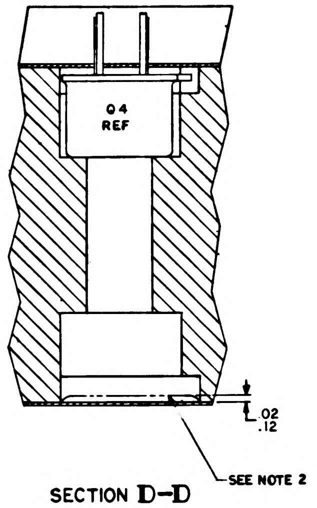
SECTION C–C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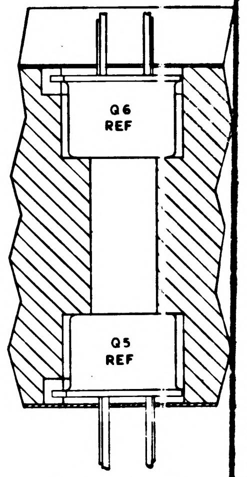
SEE NOTE 2

SECTION D–D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SECTION E–E

SYM	DESCRIPTION	DATE	APPROV
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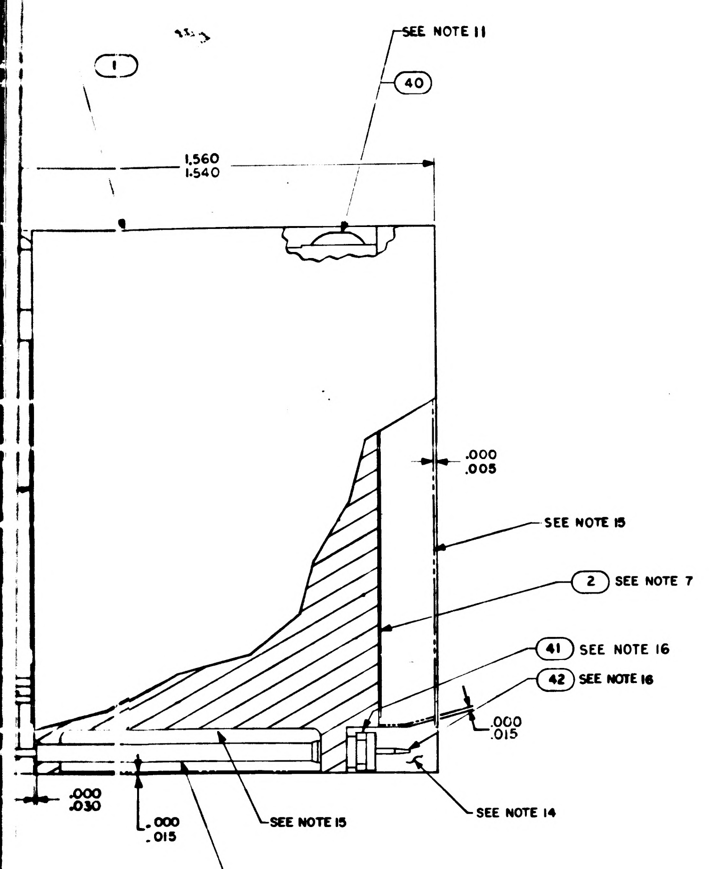
B	REVISED PER TDRR 16825	4 MAR 65	
C	REVISED PER TDRR 17341	12-MAR 65	
D	REVISED PER TDRR17623	30 MAR 65	RJJ
E	REVISED PER TDRR 19386	2- 65	
F	REVISED PER TDRR 19435	65	
G	REVISED PER TDRR 19505	30 JUN 65	
H	REVISED PER TDRR 20143	65	



SEE NOTE 11
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SEE NOTE 15
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SEE NOTE 15
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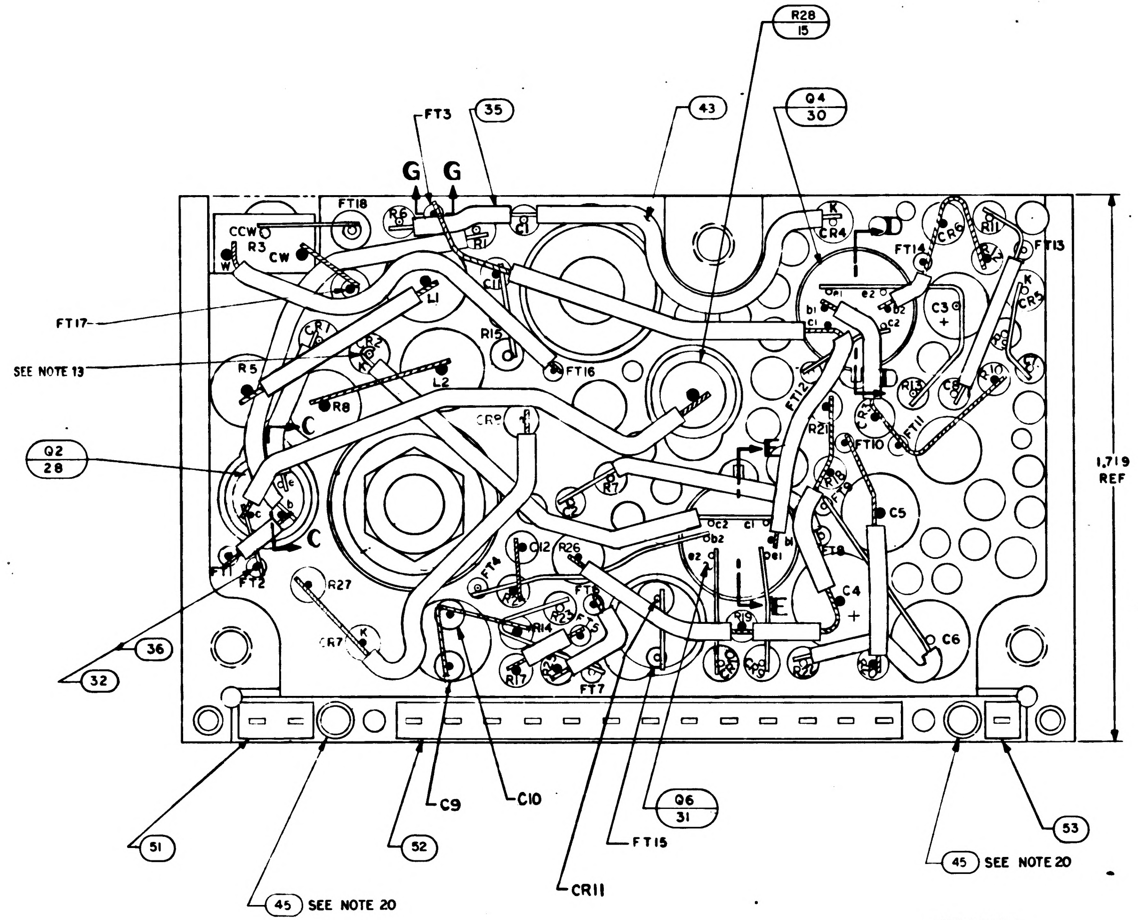

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CR9
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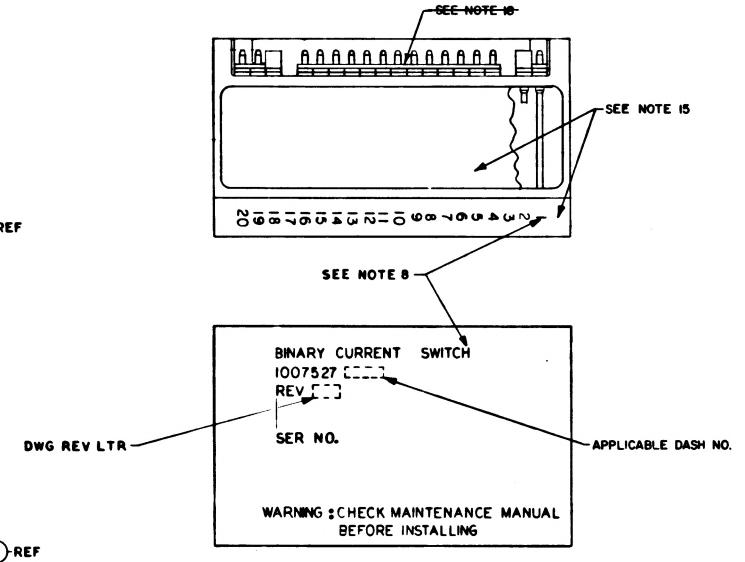

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SEE NOTE 15
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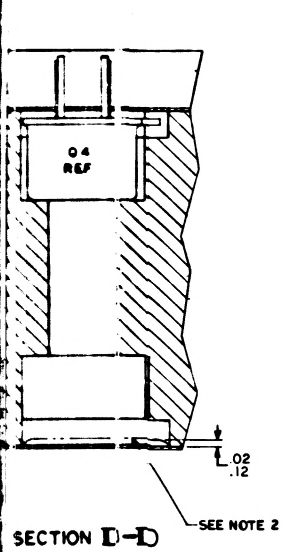
SEE NOTE 8
BINARY CURRENT SWITCH
1007527
REV
SER NO.
WARNING: CHECK MAINTENANCE MANUAL BEFORE INSTALLING
DWG REV LTR
APPLICABLE DASH NO.

MARKING VIEW

SCALE 2/1



Q4 REF
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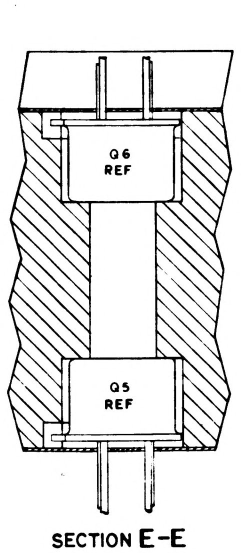
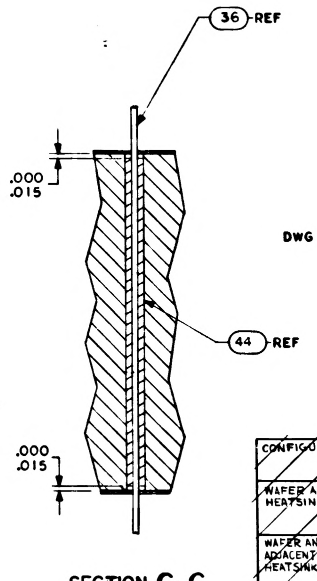
SEE NOTE 2

SECTION D-D



Q6 REF
Q5 REF

SECTION E-E



36 REF
.000
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44 REF
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SECTION G-G

TABLE I

~~CONFIGURATION~~	~~BOND BETWEEN WAFER AND HEATSINK~~	~~TOP OF WAFER~~	~~HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE~~
~~WAFER AND FLAT HEATSINK~~	~~100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE, 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~WAFER AND ADJACENT VERTICAL HEATSINK SURFACE~~	~~CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~HEATSINK FOAM CONTACT SURFACE PERIMETER~~	~~N/A~~	~~N/A~~	~~.25 MIN. WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03±.03 OF EXTERNAL EDGE~~

LIST OF MATERIALS

QUANTITY REQUIRED			011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
			1		1010830-20	DIODE, ZENER	55
			2		1010833-1	DIODE, ZENER	54
			1		1008540-1	GASKET, CONNECTOR MINIATURE	53
			1		1008540-13	GASKET, CONNECTOR MINIATURE	52
			1		1008540-2	GASKET, CONNECTOR MINIATURE	51
			2		1006777-1	CAPACITOR	50
			☒		1009523	SCHEMATIC	REF
			2		1006777-16	CAPACITOR	49
			1		1006750-40	RESISTOR	48
			1		1010372-6	DIODE, ZENER	47
							46
			2		1008256	POLARIZING PIN	45
			AR		1006776-22	INSULATION SLEEVING	44
			AR		1006776-21	INSULATION SLEEVING	43
			16		1006782-4	CONTACT, WRAPOST MALE MINAT	42
			16		1006775	INSULATOR, WRAPOST MALE MINAT	41
			2		1000093-3	SCREW, BOTTON HEAD	40
			1		MS 35650-104	NUT, PLAIN, HEX	39
			1		1008020-1	WASHER, FLAT	38
			2		1008024-1	WASHER, INSULATOR	37
			AR		1006757-8	WIRE, ELEC, .020 DIA	36
			AR		1006757-1	WIRE, ELEC, .010 X .020	35
			2		1008025-1	INSULATOR BUSHING	34
			1		1008021-1	INSULATOR, BUSHING	33
			AR		1006776-20	INSULATION SLEEVING	32
			1		1010715-1	TRANSISTOR	31
			2		1010376-4	TRANSISTOR	30
			1		1010269-1	TRANSISTOR	29
			2		1010357-1	TRANSISTOR	28
			2		1010388-39	INDUCTOR	27
			3		1010394	DIODE	26
			1		1010286-20	DIODE	25
			2		1010462-6	DIODE, ZENER	24
					1010385	DIODE	23
			2		1006777-24	CAP., FIXED CER	22
			2		1006777-33	CAP., FIXED CER	21
			1		1010393-039	CAP., FIXED TANT	20
			1		1006755-73	CAP., FIXED TANT	19
			2		1006777-13	CAP., FIXED CER	18
			1		1006750-15	RESISTOR, FIXED MF	17
			2		1006750-56	RESISTOR, FIXED MF	16
			1		1010389-88	RESISTOR, FIXED MF	15
			2		1010369-85	RESISTOR, FIXED MF	14
			1		1006750-78	RESISTOR, FIXED MF	13
			4		1006750-53	RESISTOR, FIXED MF	12
			1		1006750-1	RESISTOR, FIXED MF	11
			4		1006750-67	RESISTOR, FIXED MF	10
			4		1006750-81	RESISTOR, FIXED MF	9
			2		1010389-78	RESISTOR, FIXED WW	8
							7
			1		1010373-12	RESISTOR, VAR	6
			1		1010497	DIODE	5
			1		1010364-697	RESISTOR, FIXED MF	4
			1		1008581	INSULATOR, TOP	3
			1		1008580	INSULATOR, BOTTOM	2
			1		1007035	HEATSINK	1

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX ±.02 XXX ±.005 ANGLES ± 1/2°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-4065
DRAWN J. Kilroney DATE 23 SEP 64
CHECKED O. Ulsaich 25 SEP 64
APPROVAL
APPROVAL D. R. Test 12/4/64
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BINARY CURRENT SWITCH COMPUTER OUTPUT ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007527
SCALE 5/1
WT
SHEET 1 OF 1

1007527 H

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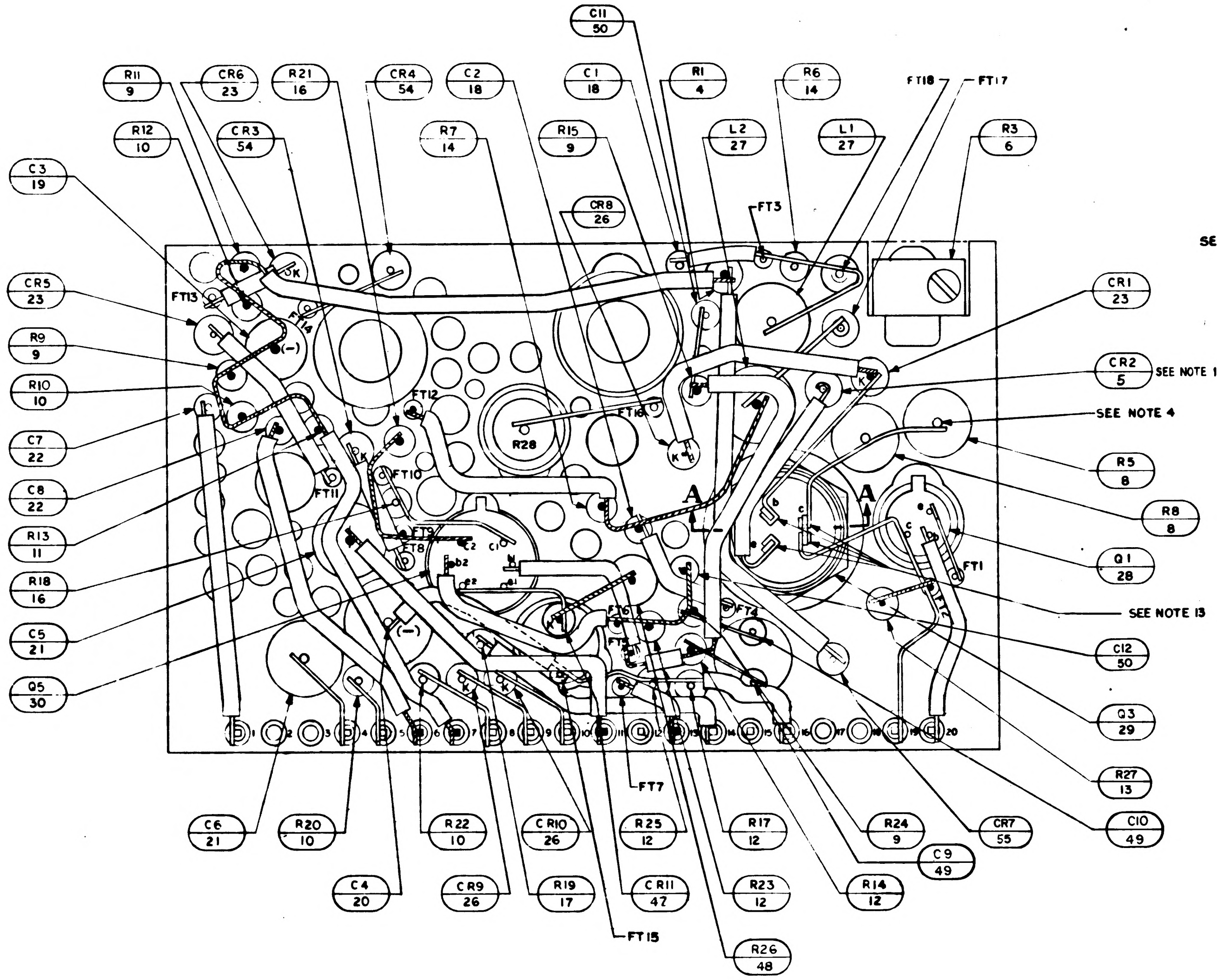
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R7 14
R15 9
L2 27
L1 27
R3 6
C3 19
CR8 26
FT3
CR5 23
FT13
CR1 23
R9 9
CR2 5
SEE NOTE 13
R10 10
FT12
FT16
R28
SEE NOTE 4
C7 22
FT11
FT10
A
A
R5 8
C8 22
R8 8
R13 11
FT2
FT8
Q1 28
FT1
R18 16
SEE NOTE 13
C5 21
FT4
FT6
FT5
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C6 21
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R22 10
CR10 26
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R17 12
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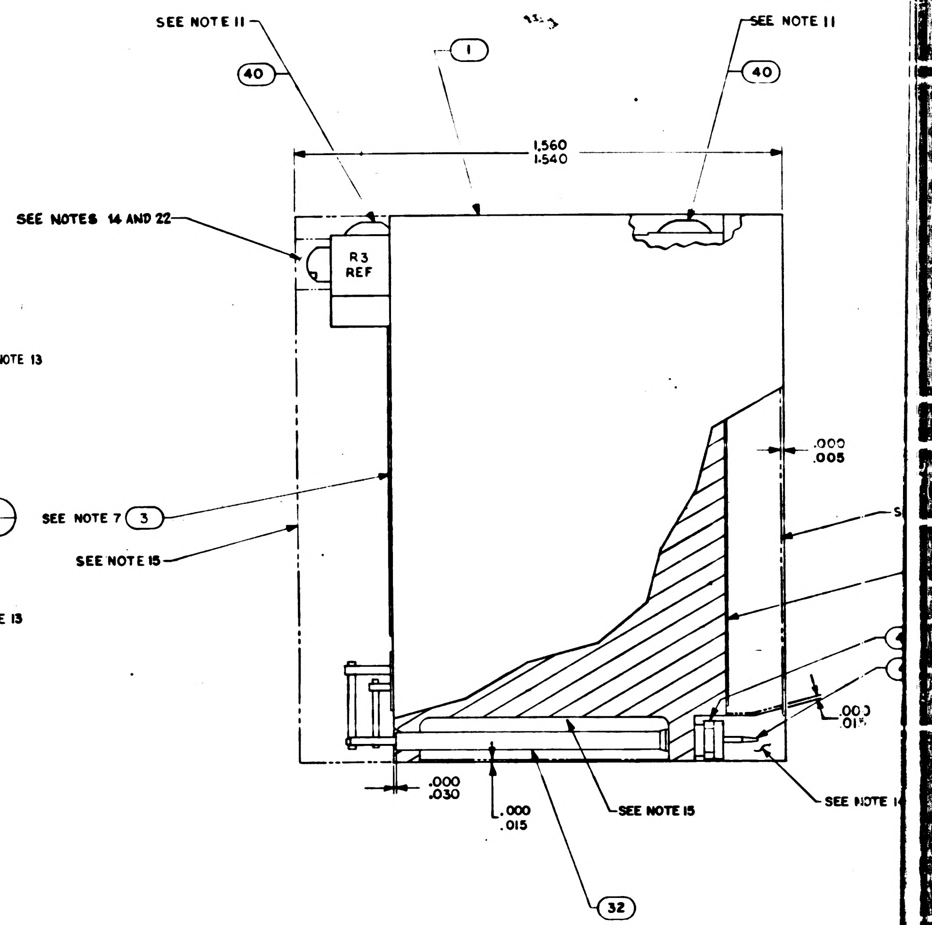
R14 12
FT15
R26 48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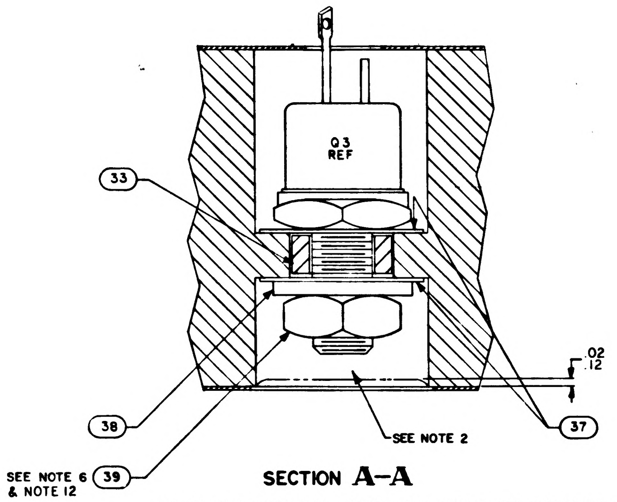
1.540
SEE NOTES 14 AND 22
R3 REF
.009
.005
SEE NOTE 7
3
SEE NOTE 15
.003
.01
.000
.030
.000
.015
SEE NOTE 15
SEE NOTE 14
32

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITHE STANDARDS PRESCRIBED BY MIL-D-70327.
2. FILL PER ND1002117
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. APPLY SEALING COMPOUND MIL-S-40083 CLASS 31 TO FIND NO. 39.
7. ON FIND NUMBERS 2 AND 3 ;
   - BROKEN PATHS INDICATE INSULATION SLEEVING.
   - K INDICATES CATHODE SIDE OF DIODE.
   - FT ( ) INDICATES FEED THRU
   - PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
   - C INDICATES COLLECTOR LEAD OF TRANSISTOR.
   - B INDICATES BASE LEAD OF TRANSISTOR.
   - E INDICATES EMITTER LEAD OF TRANSISTOR.
   - C ( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR.
   - B ( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR.
   - E ( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR.
8. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE)PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
9. STAKE FIND NO.4 THRU FIND NO.31, FIND NO.33 AND FIND NO.34 PER ND 1002009, METHOD H.
10. AR DENOTES AS REQUIRED.
11. APPLY ZINC CHROMATE PRIMER MIL-P-6808 (ASG) TO THREADS OF FIND NO.40.
12. MOUNTING TORQUE FOR FIND NO.29 10/15 INCH POUND.
13. SOLDER PER ND 1002071.
14. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY NOT EXCEED THE NORMAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. MUST MEET REQUIREMENTS OF ND 1002136.
17. PROCURE PER PS-1007027
18. ~~BOND FIND NO.51, 52 AND 53 TO FIND NO.41 PER ND1002237.~~
19. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
20. BOND FIND NO. 45 TO FIND NO.1 PER ND1002004 TYPE I
21. ~~BOND A .25 [illegible] PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN WIDE PERIMETER [illegible] OUTSIDE SURFACE OF THE INSULATORS PER ND [illegible]~~
22. SEAL CALIBRATION POT R3 PER ND 1002009 METHOD C AFTER ALL THE REQUIREMENTS OF FTM 1007027 HAVE BEEN SATISFIED.
23. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002197 TYPE II.~~ APPLY MATERIAL AND COATING AS ~~INDICATED IN TABLE I.~~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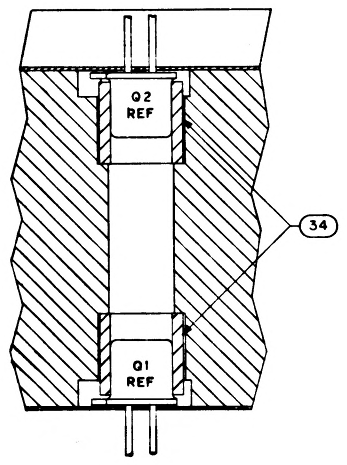
33
.02
.12
38
SEE NOTE 2
37
SEE NOTE 6 & NOTE 12
39

SECTION A-A

24. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
25. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F. FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.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Q1 REF
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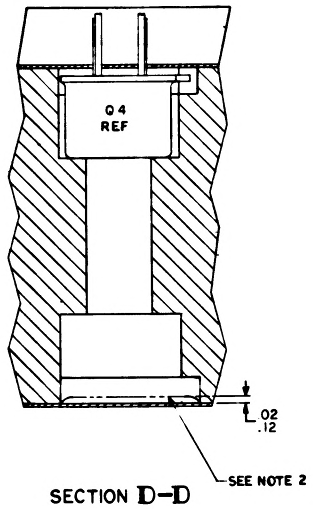
SECTION C-C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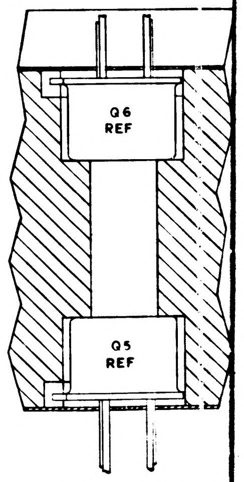
.12
SEE NOTE 2

SECTION D-D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Q5 REF

SECTION E-E

SYM	DESCRIPTION	DATE	APPROV
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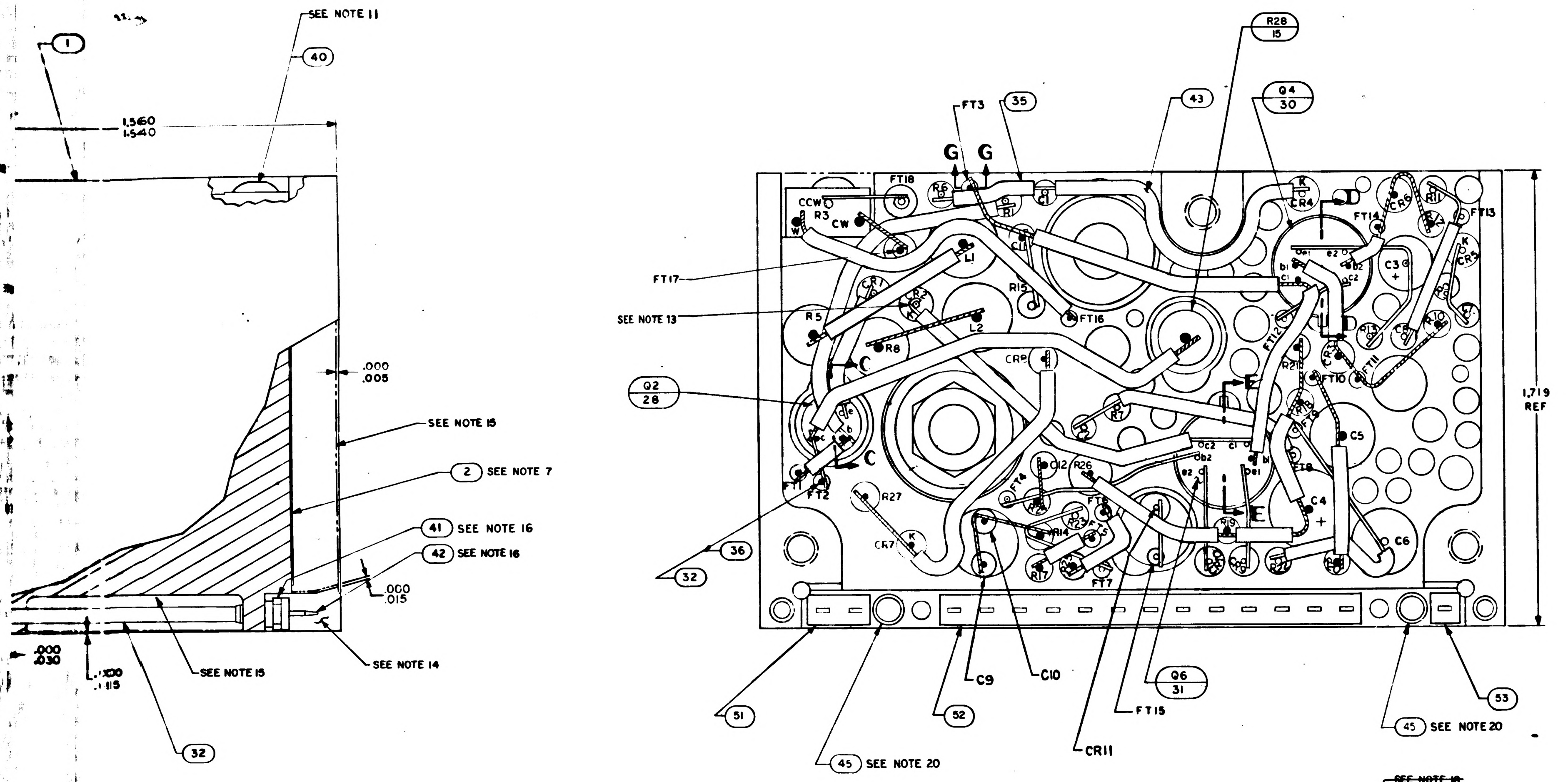
B	REVISED PER TDRR 6825	4 MAR 65	
C	REVISED PER TDRR 17341	12 MAR 65	
D	REVISED PER TDRR17623	30 MAR 65	RJJ
E	REVISED PER TDRR 19386	[illegible] 65	MG
F	REVISED PER TDRR 19435	[illegible] 65	
G	REVISED PER TDRR 19505	8 JUN 65	
H	REVISED PER TDRR 20.43	[illegible] 65	
J	REVISED PER TDRR 2 284	3 [illegible] 65	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.005
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2 SEE NOTE 7
41 SEE NOTE 16
42 SEE NOTE 16
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.030
.100
.115
SEE NOTE 15
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R28 15
Q4 30
FT3
35
43
G G
FT18
R3
CCW
CW
FT17
SEE NOTE 13
R5
R8
L1
L2
R15
FT16
CR4
FT14
FT13
C3
R11
CR5
Q2 28
C
CR9
E
FT10
C5
C4
C6
R27
CR7
R26
FT4
C12
FT5
FT7
FT8
FT1
FT2
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C10
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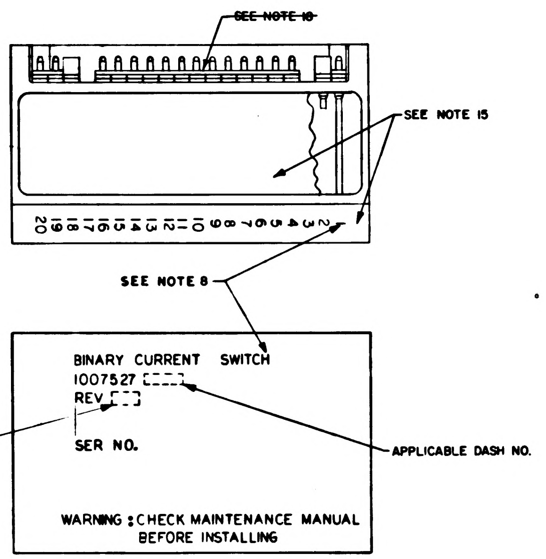
Q6 31
FT15
CR11
45 SEE NOTE 20
53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SEE NOTE 15
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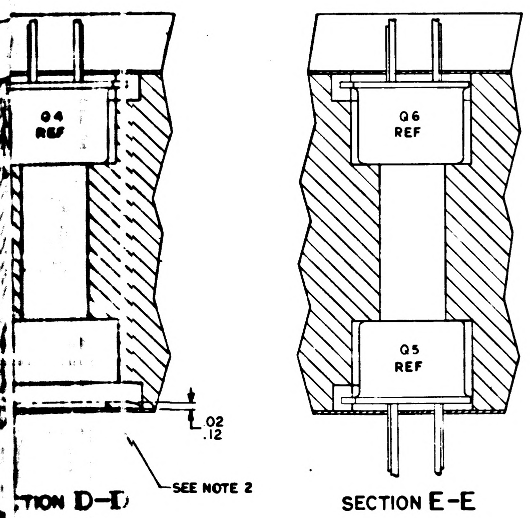
SEE NOTE 8
DWG REV LTR
APPLICABLE DASH NO.

BINARY CURRENT SWITCH
1007527
REV
SER NO.

WARNING : CHECK MAINTENANCE MANUAL
BEFORE INSTALLING

MARKING VIEW
SCALE 2/1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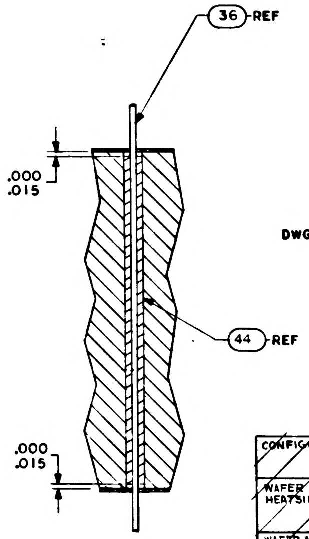
Q6 REF
Q5 REF
.02
.12
SEE NOTE 2

SECTION D-D SECTION E-E


36 REF
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44 REF
.000
.015

SECTION G-G

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN. WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

QUANTITY REQUIRED 011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1		1010830-20	DIODE, ZENER	55
2		1010833-1	DIODE, ZENER	54
1		1008540-1	GASKET, CONNECTOR MINIATURE	53
1		1008540-13	GASKET, CONNECTOR MINIATURE	52
1		1008540-2	GASKET, CONNECTOR MINIATURE	51
2		1006777-1	CAPACITOR	50
X		1009523	SCHEMATIC	REF
2		1006777-16	CAPACITOR	49
1		1006750-40	RESISTOR	48
1		1010372-6	DIODE, ZENER	47
				46
2		1008256	POLARIZING PIN	45
AR		1006776 - 22	INSULATION SLEEVING	44
AR		1006776 - 21	INSULATION SLEEVING	43
16		1006782 — 4	CONTACT, WRAPOST MALE MINAT	42
16		1006775	INSULATOR, WRAPOST MALE MINAT	41
2		1000093 — 3	SCREW, BOTTON HEAD	40
1		MS 35650 — 104	NUT, PLAIN, HEX	39
1		1008020—1	WASHER, FLAT	38
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AR		1006757—8	WIRE, ELEC, .020 DIA	36
AR		1006757—L	WIRE, ELEC, .010 X .020	35
2		1008025—1	INSULATOR BUSHING	34
1		1008021—1	INSULATOR, BUSHING	33
AR		1006776—20	INSULATION SLEEVING	32
1		1010715 - 2	TRANSISTOR	31
2		1010376 - 4	TRANSISTOR	30
1		1010269 - 1	TRANSISTOR	29
2		1010357-1	TRANSISTOR	28
2		1010388 - 39	INDUCTOR	27
3		1010394	DIODE	26
1		1010286-20	DIODE	25
2		1010462 - 6	DIODE, ZENER	24
		1010385	DIODE	23
2		1006777—24	CAP., FIXED CER	22
2		1006777—33	CAP., FIXED CER	21
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1		1006755—73	CAP., FIXED TANT	19
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2		1010369 - 85	RESISTOR, FIXED MF	14
1		1006750-78	RESISTOR, FIXED MF	13
4		1006750—53	RESISTOR, FIXED MF	12
1		1006750—1	RESISTOR, FIXED MF	11
4		1006750—67	RESISTOR, FIXED MF	10
4		1006750—81	RESISTOR, FIXED MF	9
2		1010389 —78	RESISTOR, FIXED WW	8
				7
1		1010373 —12	RESISTOR, VAR	6
1		1010497	DIODE	5
1		1010364—697	RESISTOR, FIXED MF	4
1		1008581	INSULATOR, TOP	3
1		1008580	INSULATOR, BOTTOM	2
1		1007035	HEATSINK	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX±.02 XXX±.005 ANGLES ± 1/2°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN J. Kilroman DATE 23 SEP 64
CHECKED A. Ulrich 25 SEP 64
APPROVAL
APPROVAL 12/4/64
NASA APPROVAL 12-8-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BINARY CURRENT SWITCH
COMPUTER OUTPUT
ASSEMBLY

CODE IDENT NO 80230
SIZE J
NASA DRAWING NO. 1007527
SCALE 5/1
WT
SHEET 1 OF 1

1007527

7527 REV J SH 1

2/1007527

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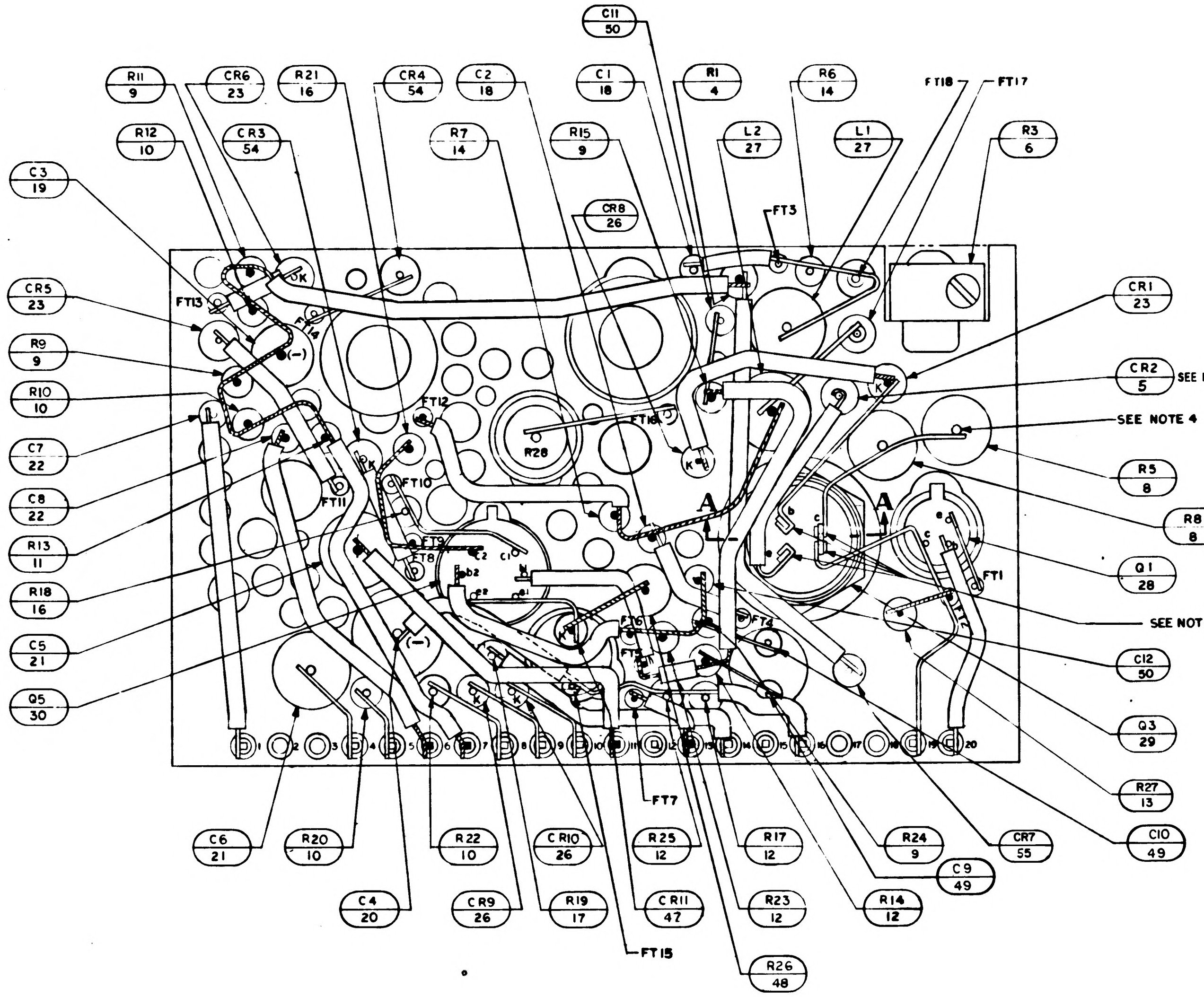
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CR5 23
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C7 22
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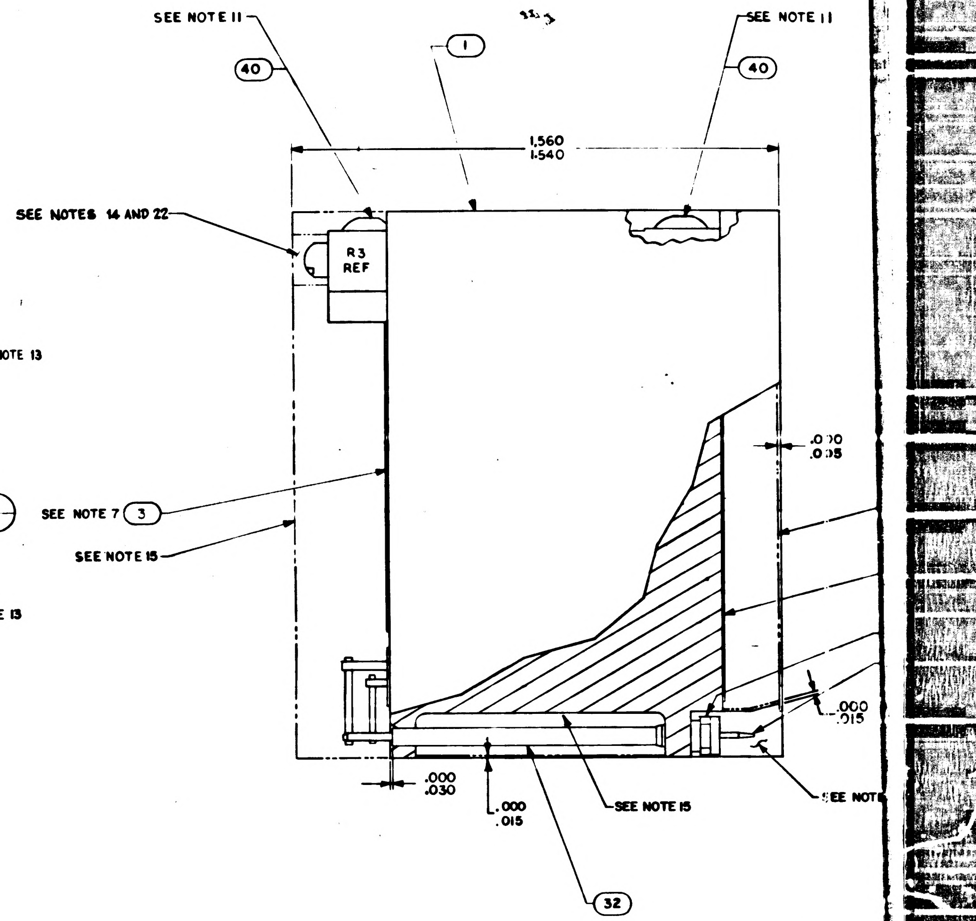
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.005
SEE NOTE 7
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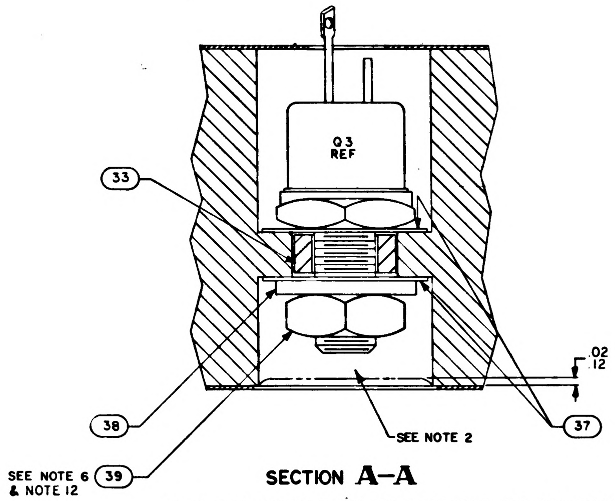
SEE NOTE 15
.000
.015
.000
.030
.000
.015
SEE NOTE 15
32
SEE NOTE

NOTES:

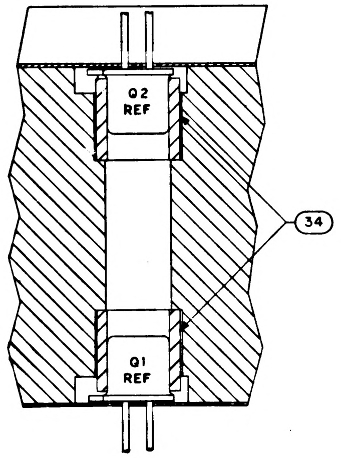
1. INTERPRET DRAWING IN ACCORDANCE WITHE STANDARDS PRESCRIBED BY MIL-D-70327.
2. FILL PER ND1002117
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. APPLY SEALING COMPOUND MIL-S-40083 CLASS 31 TO FIND NO. 39.
7. ON FIND NUMBERS 2 AND 3 ;
   - BROKEN PATHS INDICATE INSULATION SLEEVING.
   - K INDICATES CATHODE SIDE OF DIODE.
   - FT ( ) INDICATES FEED THRU
   - PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
   - C INDICATES COLLECTOR LEAD OF TRANSISTOR.
   - B INDICATES BASE LEAD OF TRANSISTOR.
   - E INDICATES EMITTER LEAD OF TRANSISTOR.
   - C ( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR.
   - B ( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR.
   - E ( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR.
8. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE)PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
9. STAKE FIND NO.4 THRU FIND NO.31, FIND NO.33 AND FIND NO.34 PER ND 1002009, METHOD H.
10. AR DENOTES AS REQUIRED.
11. APPLY ZINC CHROMATE PRIMER MIL-P-6808 (ASG) TO THREADS OF FIND NO.40.
12. MOUNTING TORQUE FOR FIND NO.29 10/15 INCH POUND.
13. SOLDER PER ND 1002071.
14. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY NOT EXCEED THE NORMAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. MUST MEET REQUIREMENTS OF ND 1002136.
17. PROCURE PER PS-1007027
18. ~~BOND FIND NO.51, 52 AND 53 TO FIND NO.41 PER ND1002237.~~
19. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
20. BOND FIND NO. 45 TO FIND NO. 1 PER ND1002004 TYPE I
21. ~~BOND A .25 [illegible] PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE II.~~
22. SEAL CALIBRATION POT R3 PER ND 1002009 METHOD C AFTER ALL THE REQUIREMENTS OF FTM 1007027 HAVE BEEN SATISFIED.
23. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II.~~ APPLY MATERIAL AND COATING ~~AS INDICATED IN TABLE I.~~


33
Q3
REF
.02
.12
38
SEE NOTE 6
& NOTE 12
39
SEE NOTE 2
37

SECTION A–A

24. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

25. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F. FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.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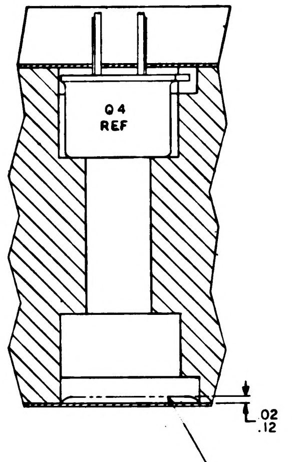
SECTION C–C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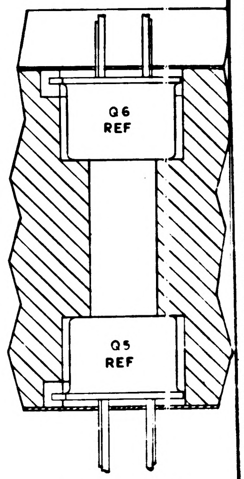
SEE NOTE 2

SECTION D–D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SECTION E-E

REVISIONS 14699			
SYM	DESCRIPTION	DATE	APPROV
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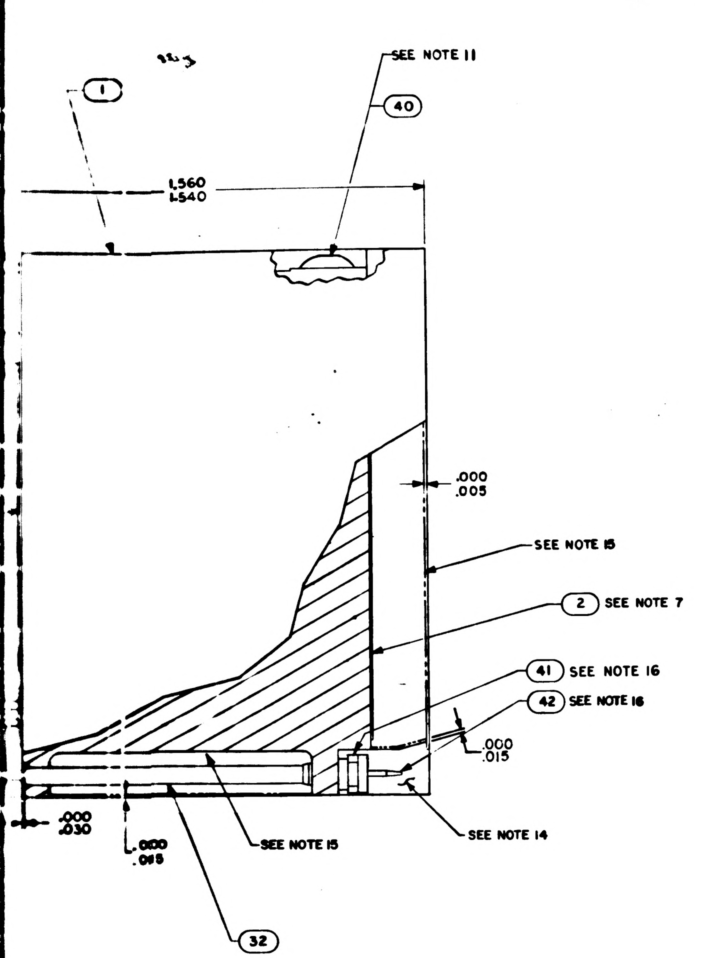
B	REVISED PER TDRR 16825	2 MAR 65	
C	REVISED PER TDRR 17341	12 MAR 65	TM EF
D	REVISED PER TDRR17623	26 MAR 65	RJJ
E	REVISED PER TDRR 19386	2 JUN 65	MG
F	REVISED PER TDRR 19435	65	
G	REVISED PER TDRR 19505	8-JUN-65	EF
H	REVISED PER TDRR 20143	10 JUN 65	TM
J	REVISED PER TDRR 21284	3 JUL 65	
K	REVISED PER TDRR 22359	23 SEP 65	



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SEE NOTE 11
40
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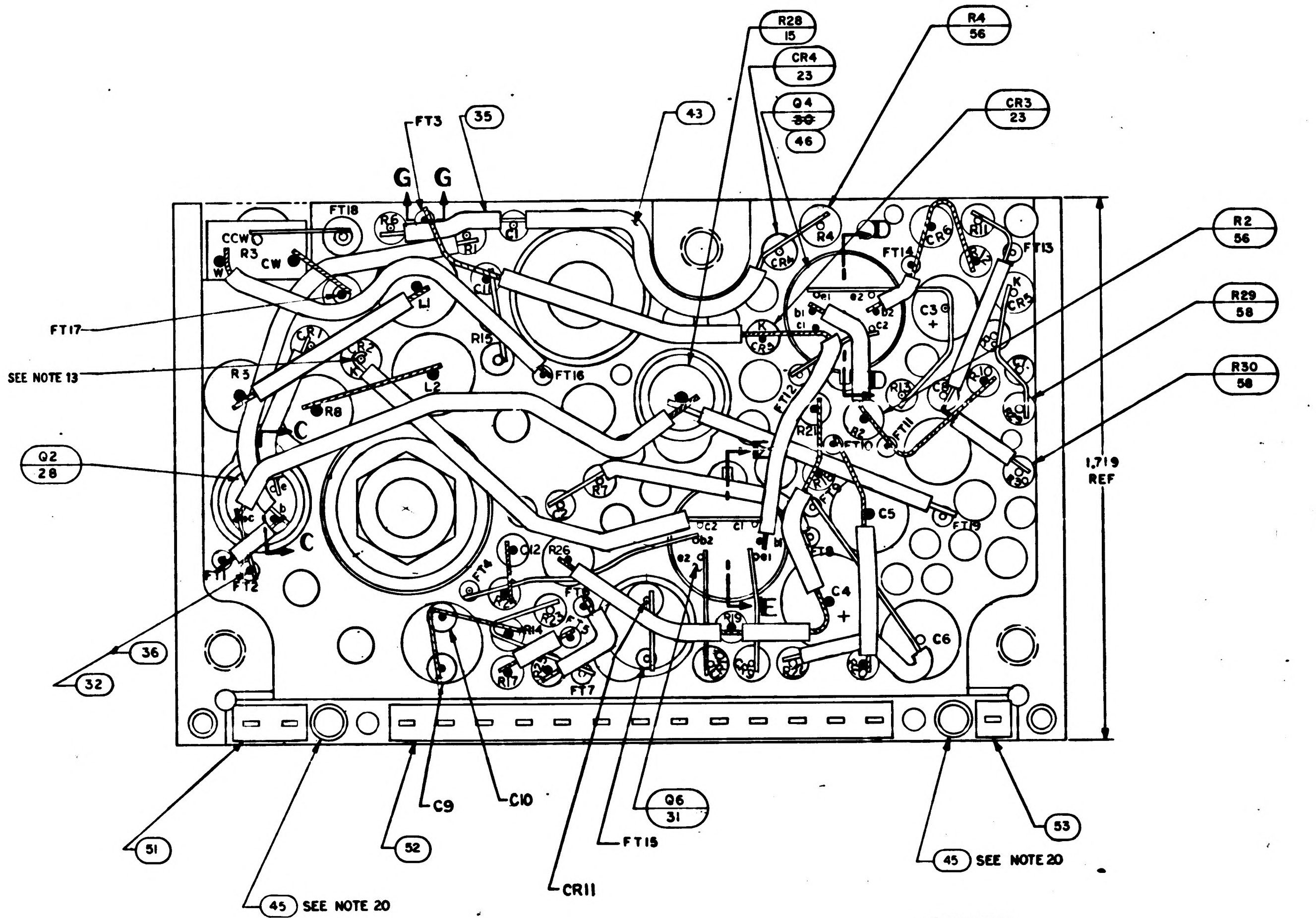
1.540
.000
.005
SEE NOTE 15
2 SEE NOTE 7
41 SEE NOTE 16
42 SEE NOTE 16
.000
.015
SEE NOTE 14
SEE NOTE 15
.000
.030
.000
.015
32



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CR3 23
R2 56
R29 58
R30 58
1.719 REF
FT18
R6
R1
C1
CCW
R3
CW
W
FT17
SEE NOTE 13
L1
R15
FT16
CR1
CR2
R5
R8
L2
C
Q2 28
C
FT1
FT2
36
32
FT14
FT13
CR6
R11
CR5
C3
D
CR9
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R13
C8
R10
FT11
FT10
R18
C5
FT19
C4
C6
E
R19
R27
C12
R26
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45 SEE NOTE 20
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CR11
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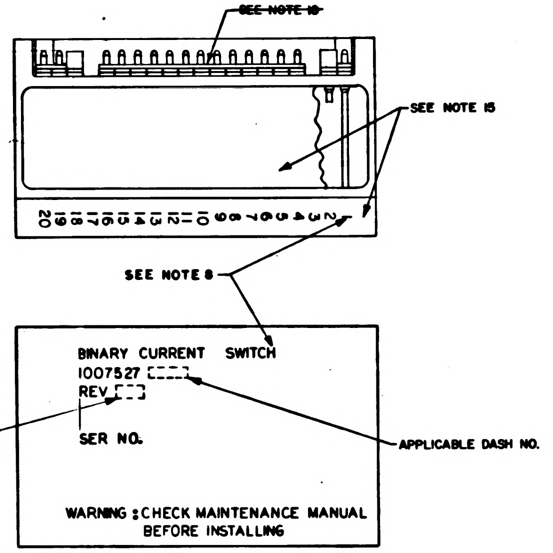
45 SEE NOTE 20
53



~~SEE NOTE 18~~
SEE NOTE 15
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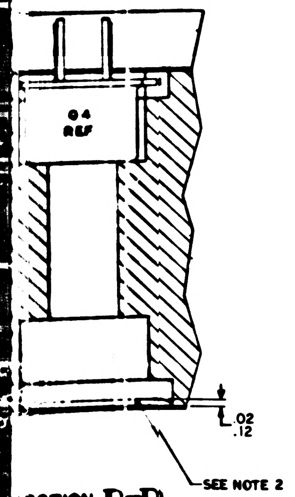
SEE NOTE 8
BINARY CURRENT SWITCH
1007527
REV
SER NO.
DWG REV LTR
APPLICABLE DASH NO.
WARNING : CHECK MAINTENANCE MANUAL BEFORE INSTALLING

MARKING VIEW

SCALE 2/1



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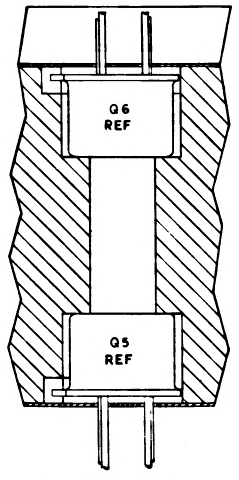
SEE NOTE 2
.02
.12

SECTION D-D



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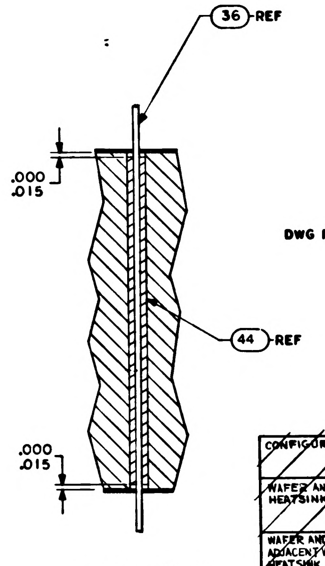
Q5 REF

SECTION E-E



36 REF
.000
.015
44 REF
.000
.015

SECTION G-G

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN. WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03±.03 OF EXTERNAL EDGE

			2		1006750-84	RESISTOR, FIXED, MF	58
			2		1006750-80	RESISTOR, FIXED, MF	57
			2		1006750-41	RESISTOR, FIXED, MF	56
			~~1~~		~~1010830-20~~	~~DIODE, ZENER~~	~~55~~
			~~2~~		~~1010833-1~~	~~DIODE, ZENER~~	~~54~~
			1		1008540-1	GASKET, CONNECTOR MINIATURE	53
			1		1008540-13	GASKET, CONNECTOR MINIATURE	52
			1		1008540-2	GASKET, CONNECTOR MINIATURE	51
			2		1006777-1	CAPACITOR	50
			╳		1009523	SCHEMATIC	REF
			2		1006777-16	CAPACITOR	49
			1		1006750-40	RESISTOR	48
			1		1010372-6	DIODE, ZENER	47
			1		1010376-3	TRANSISTOR	46
			2		1008256	POLARIZING PIN	45
			AR		1006776-22	INSULATION SLEEVING	44
			AR		1006776-21	INSULATION SLEEVING	43
			16		1006782-4	CONTACT, WRAPOST MALE MINAT	42
			16		1006775	INSULATOR, WRAPOST MALE MINAT	41
			2		1000093-3	SCREW, BOTTON HEAD	40
			1		MS 35650-104	NUT, PLAIN, HEX	39
			1		1008020-1	WASHER, FLAT	38
			2		1008024-1	WASHER, INSULATOR	37
			AR		1006757-8	WIRE, ELEC, .020 DIA	36
			AR		1006757-L	WIRE, ELEC, .010 X .020	35
			2		1008025-1	INSULATOR BUSHING	34
			1		1008021-1	INSULATOR, BUSHING	33
			AR		1006776-20	INSULATION SLEEVING	32
			1		1010715-2	TRANSISTOR	31
			1		1010376-4	TRANSISTOR	30
			1		1010269-1	TRANSISTOR	29
			2		1010357-1	TRANSISTOR	28
			2		1010388-39	INDUCTOR	27
			2		1010394	DIODE	26
			~~1~~		~~1010286-20~~	~~DIODE~~	~~25~~
			~~2~~		~~1010462-6~~	~~DIODE, ZENER~~	~~24~~
			5		1010385	DIODE	23
			2		1006777-24	CAP., FIXED CER	22
			2		1006777-33	CAP., FIXED CER	21
			1		1010393-039	CAP., FIXED TANT	20
			1		1006755-73	CAP., FIXED TANT	19
			2		1006777-7	CAP., FIXED CER	18
			1		1006750-15	RESISTOR, FIXED MF	17
			2		1006750-56	RESISTOR, FIXED MF	16
			1		1010389-88	RESISTOR, FIXED MF	15
			~~2~~		~~1010369-85~~	~~RESISTOR, FIXED MF~~	~~14~~
			~~1~~		~~1006750-78~~	~~RESISTOR, FIXED MF~~	~~13~~
			4		1006750-53	RESISTOR, FIXED MF	12
			1		1006750-1	RESISTOR, FIXED MF	11
			4		1006750-67	RESISTOR, FIXED MF	10
			2		1006750-81	RESISTOR, FIXED MF	9
			2		1010389-78	RESISTOR, FIXED WW	8
			2		1006750-60	RESISTOR, FIXED, MF	7
			1		1010373-12	RESISTOR, VAR	6
			1		1010497	DIODE	5
			1		1010364-697	RESISTOR, FIXED MF	4
			1		1008581	INSULATOR, TOP	3
			1		1008580	INSULATOR, BOTTOM	2
			1		1007035	HEATSINK	1
QUANTITY REQUIRED			011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
					LIST OF MATERIALS		

K

1007527

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX±.02 XXX±.005 ANGLES ± 1/2
DO NOT SCALE THIS DRAWING

MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497

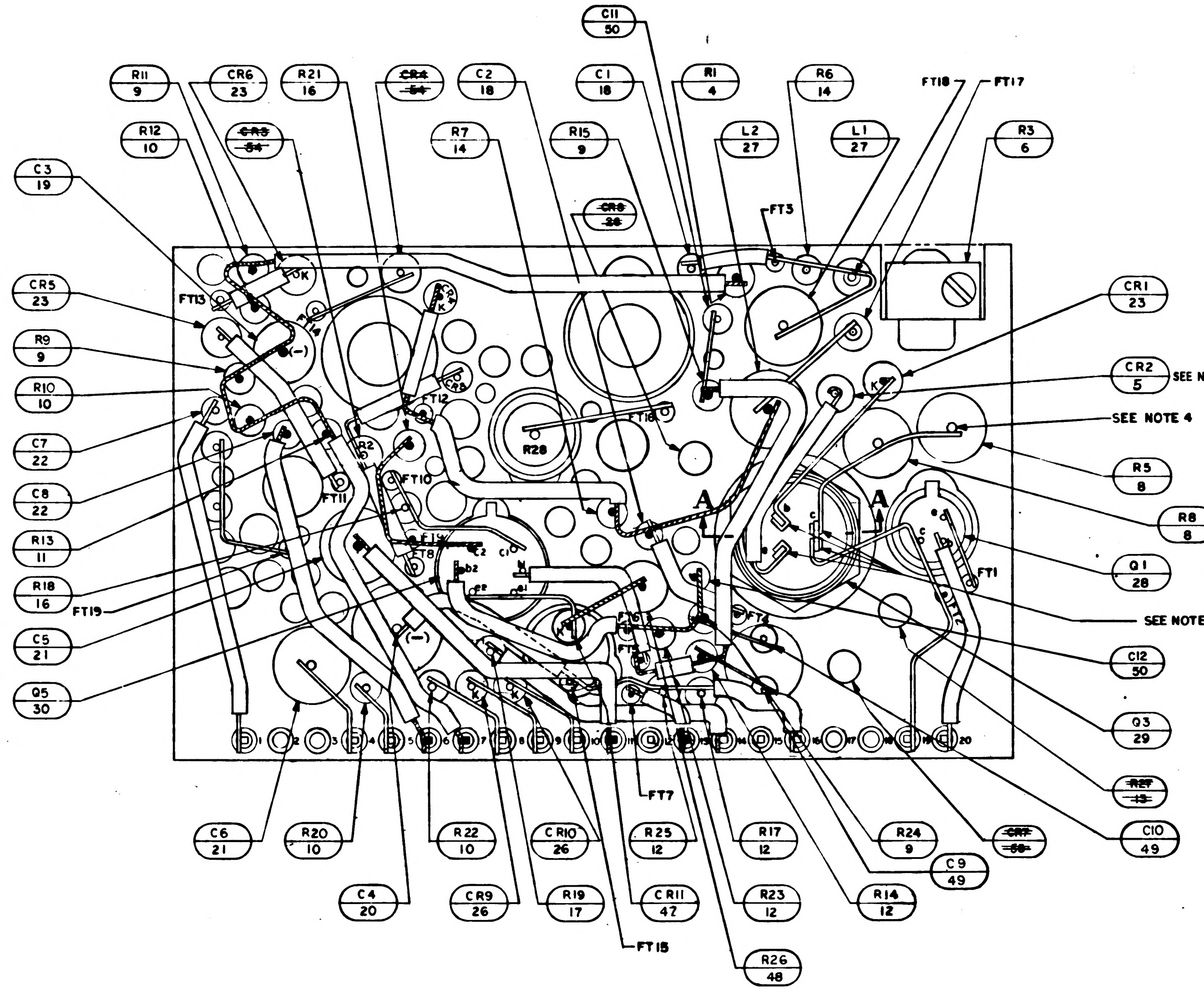
DRAWN J. Villanueva DATE 25 SEP 64
CHECKED A. Ulrich 25 SEP 64
APPROVAL
APPROVAL A. R. Stout 12/4/64
NASA APPROVAL W. J. 12 FEB 65
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BINARY CURRENT SWITCH COMPUTER OUTPUT ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007527
SCALE 5/1
WT
SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.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R21 16
~~CR4 34~~
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C1 18
R1 4
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FT17
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R7 14
R15 9
L2 27
L1 27
R3 6
C3 19
~~CR8 35~~
FT3
CR5 23
FT13
R9 9
R10 10
C7 22
C8 22
R13 11
R18 16
FT19
C5 21
Q5 30
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SEE NOTE 13
SEE NOTE 4
R5 8
R8 8
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SEE NOTE 13
C12 50
Q3 29
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C9 49
C6 21
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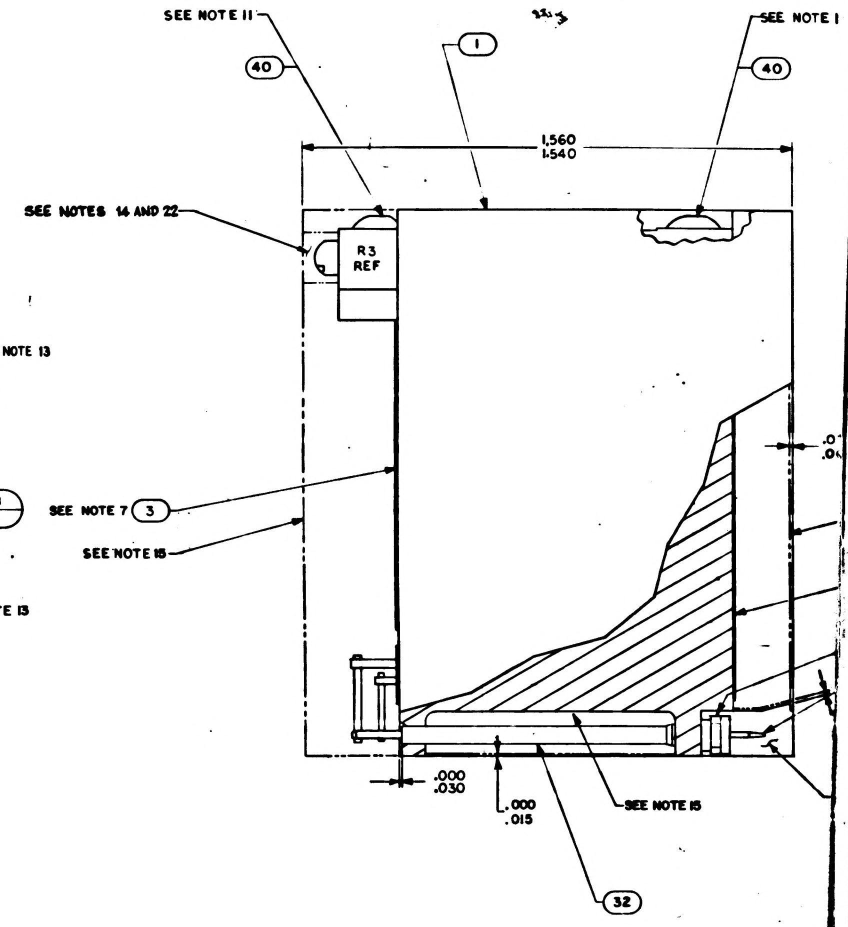
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1.540
SEE NOTES 14 AND 22
R3 REF
SEE NOTE 7
3
SEE NOTE 15
.000
.030
.000
.015
SEE NOTE 15
32

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITHE STANDARDS PRESCRIBED BY MIL-D-70327.
2. FILL PER ND1002117
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. APPLY SEALING COMPOUND MIL-S-40083 CLASS 31 TO FIND NO. 39.
7. ON FIND NUMBERS 2 AND 3 ;
   BROKEN PATHS INDICATE INSULATION SLEEVING.
   K INDICATES CATHODE SIDE OF DIODE.
   FT ( ) INDICATES FEED THRU
   PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
   C INDICATES COLLECTOR LEAD OF TRANSISTOR.
   B INDICATES BASE LEAD OF TRANSISTOR.
   E INDICATES EMITTER LEAD OF TRANSISTOR.
   C ( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR.
   B ( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR.
   E ( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR.
8. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE)PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
9. STAKE FIND NO.4 THRU FIND NO.31, FIND NO.33 AND FIND NO.34 PER ND 1002009, METHOD H.
10. AR DENOTES AS REQUIRED.
11. APPLY ZINC CHROMATE PRIMER MIL-P-6808 (ASG) TO THREADS OF FIND NO.40.
12. MOUNTING TORQUE FOR FIND NO.29 10/15 INCH POUND.
13. SOLDER PER ND 1002071.
14. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND.
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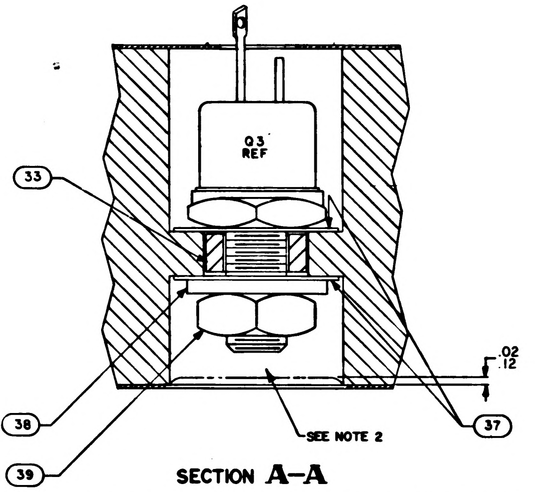
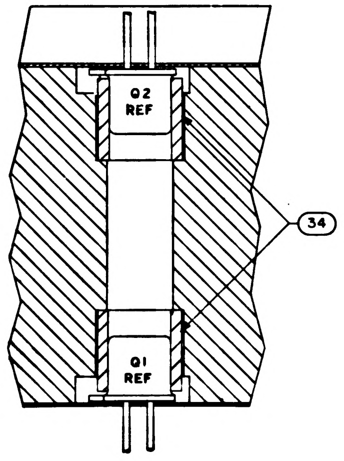
16. MUST MEET REQUIREMENTS OF ND 1002136.
17. PROCURE PER PS-1007027
~~18. BOND FIND NO.51, 52 AND 53 TO FIND NO.41 PER ND1002237.~~
19. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
20. BOND FIND NO. 45 TO FIND NO.1 PER ND1002004 TYPE I
~~21. [illegible]~~
22. SEAL CALIBRATION POT R3 PER ND 1002009 METHOD C AFTER ALL THE REQUIREMENTS OF FTM 1007027 HAVE BEEN SATISFIED.
23. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II.~~ APPLY ~~MATERIAL AND COATING AS INDICATED IN TABLE I.~~


33
Q3 REF
.02
.12
38
SEE NOTE 2
37
SEE NOTE 6 & NOTE 12
39

SECTION A–A

24. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

25. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140° F. FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.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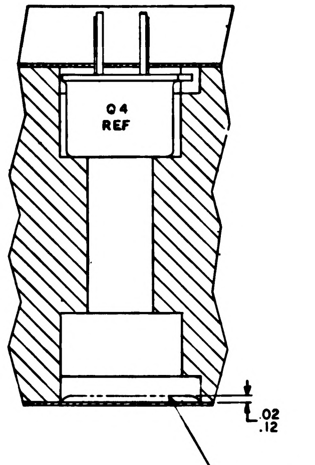
SECTION C–C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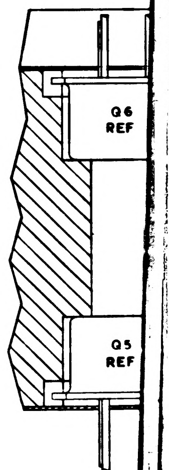
SEE NOTE 2

SECTION D–D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SECTION

SYM	DESCRIPTION	DATE	APPROV
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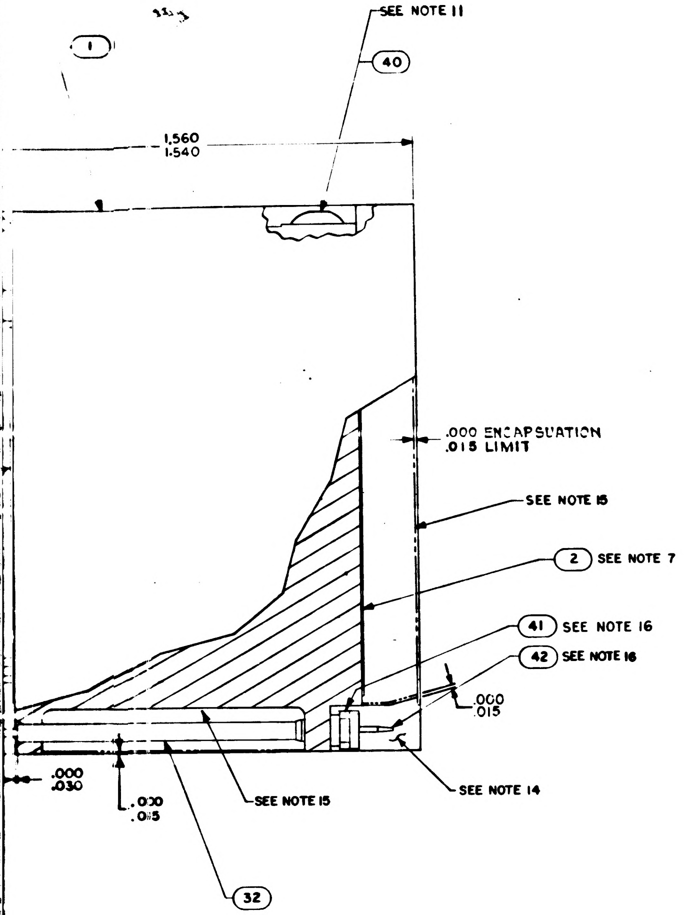
B	REVISED PER TDRR 16825	4 MAR 65	
C	REVISED PER TDRR 17341	12 MAR 65	
D	REVISED PER TDRR17623	26 MAR 65	RJJ
E	REVISED PER TDRR 19386	2 JUN 65	M.G
F	REVISED PER TDRR 19435	65	R.
G	REVISED PER TDRR 19505	8-JUN-65	
H	REVISED PER TDRR 20143	19 JUN 65	
J	REVISED PER TDRR 21284	31 JUL 65	JHP
K	REVISED PER TDRR 22359	23 SEP 65	WTY
L	REVISED PER TDRR 22967	11 OCT 65	JWP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SEE NOTE 11
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.000 ENCAPSULATION
.015 LIMIT
SEE NOTE 15
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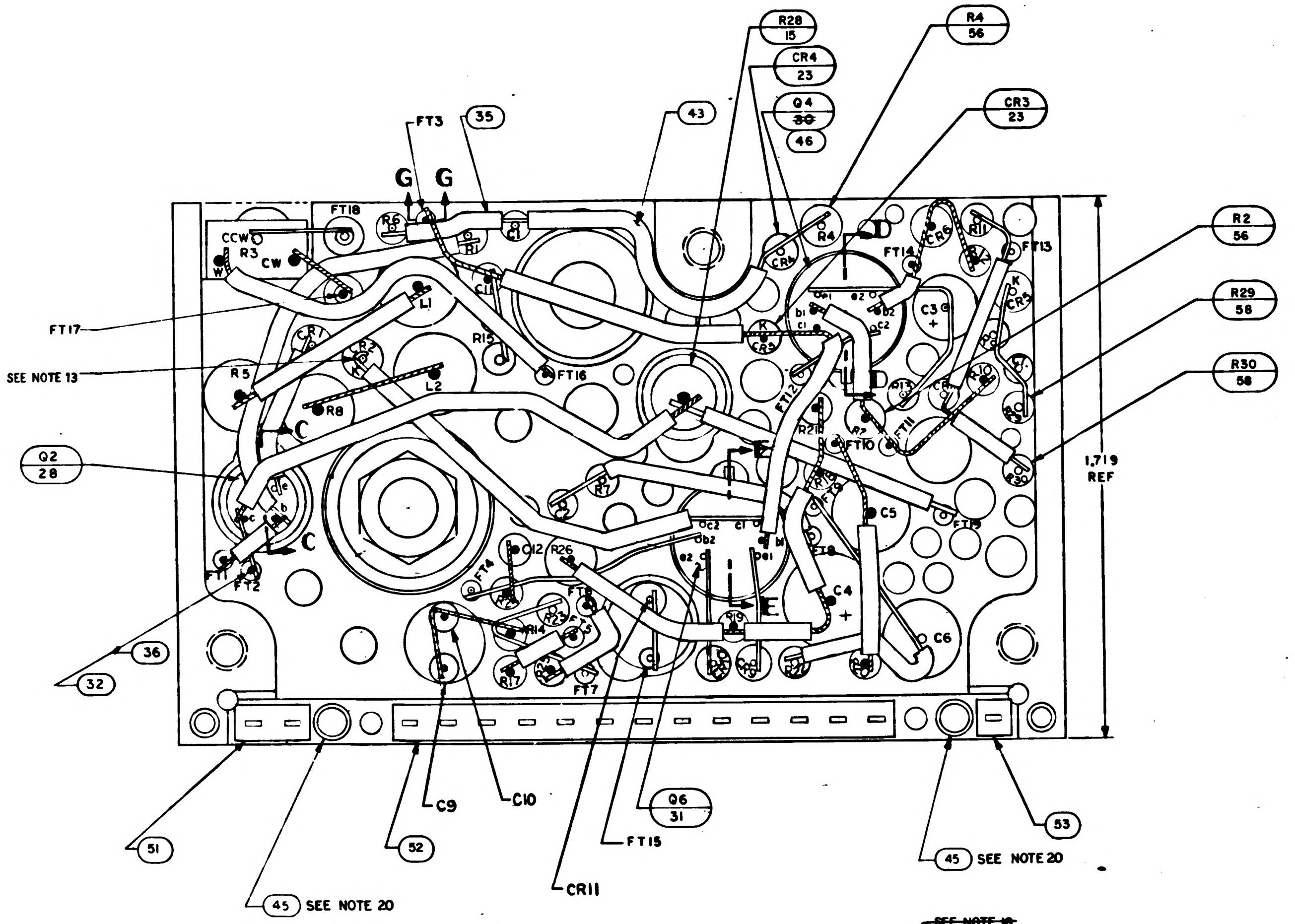
SEE NOTE 15
SEE NOTE 14
32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R6
CCW
R3
CW
FT17
SEE NOTE 13
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R15
FT16
R5
R8
L2
C
D
C3
FT13
FT14
FT10
Q2 28
C5
FT11
FT12
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C12
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C6
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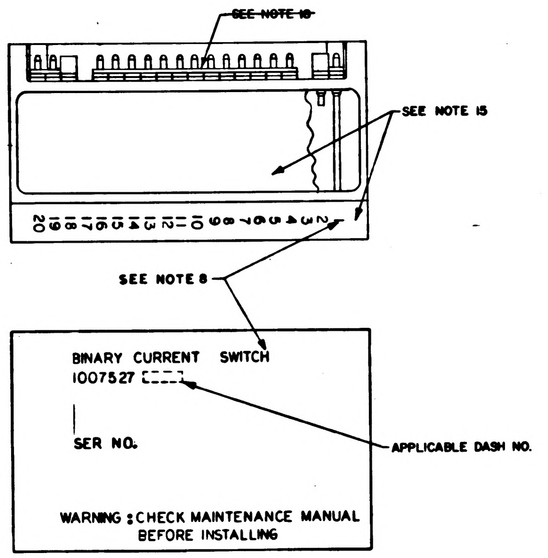
52
53
45 SEE NOTE 20
45 SEE NOTE 20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SEE NOTE 8
APPLICABLE DASH NO.

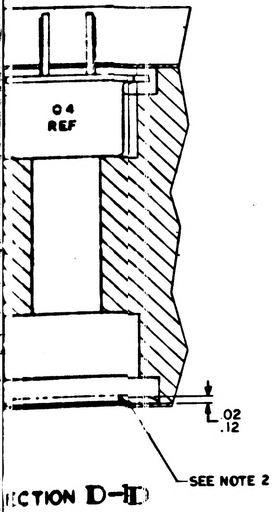
BINARY CURRENT SWITCH
1007527 [ ]

SER NO.

WARNING : CHECK MAINTENANCE MANUAL BEFORE INSTALLING

MARKING VIEW

SCALE 2/1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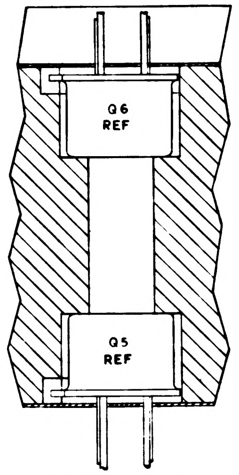
SEE NOTE 2

CTION D-D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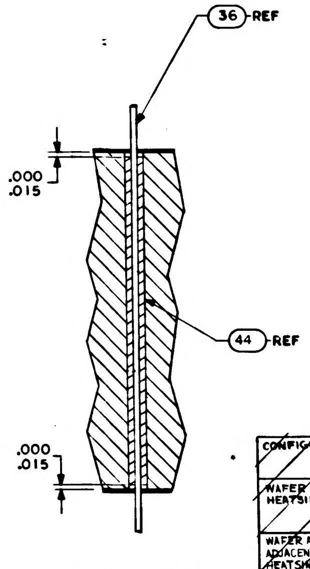
SECTION E-E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44 REF
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SECTION G-G

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE, 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN. WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

			011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
			2		1006750-84	RESISTOR, FIXED, MF	58
			2		1006750-80	RESISTOR, FIXED, MF	57
			2		1006750-41	RESISTOR, FIXED, MF	56
			~~1~~		~~1010830-20~~	~~DIODE, ZENER~~	~~55~~
			~~2~~		~~1010833-1~~	~~DIODE, ZENER~~	~~54~~
			1		1008540-1	GASKET, CONNECTOR MINIATURE	53
			1		1008540-13	GASKET, CONNECTOR MINIATURE	52
			1		1008540-2	GASKET, CONNECTOR MINIATURE	51
			2		1006777-1	CAPACITOR	50
			☒		1009523	SCHEMATIC	REF
			2		1006777-16	CAPACITOR	49
			1		1006750-40	RESISTOR	48
			1		1010372-6	DIODE, ZENER	47
			1		1010376-3	TRANSISTOR	46
			2		1008256	POLARIZING PIN	45
			AR		1006776-22	INSULATION SLEEVING	44
			AR		1006776-21	INSULATION SLEEVING	43
			16		1006782-4	CONTACT, WRAPOST MALE MINAT	42
			16		1006775	INSULATOR, WRAPOST MALE MINAT	41
			2		1000093-3	SCREW, BOTTON HEAD	40
			1		MS 35650-104	NUT, PLAIN, HEX	39
			1		1008020-1	WASHER, FLAT	38
			2		1008024-1	WASHER, INSULATOR	37
			AR		1006757-8	WIRE, ELEC, .020 DIA	36
			AR		1006757-1	WIRE, ELEC, .010 X .020	35
			2		1008025-1	INSULATOR BUSHING	34
			1		1008021-1	INSULATOR, BUSHING	33
			AR		1006776-20	INSULATION SLEEVING	32
			1		1010715-2	TRANSISTOR	31
			1		1010376-4	TRANSISTOR	30
			1		1010269-1	TRANSISTOR	29
			2		1010357-1	TRANSISTOR	28
			2		1010388-39	INDUCTOR	27
			2		1010394	DIODE	26
			~~1~~		~~1010286-20~~	~~DIODE~~	~~25~~
			~~2~~		~~1010462-6~~	~~DIODE, ZENER~~	~~24~~
			5		1010385	DIODE	23
			2		1006777-24	CAP., FIXED CER	22
			2		1006777-33	CAP., FIXED CER	21
			1		1010393-039	CAP., FIXED TANT	20
			1		1006755-73	CAP., FIXED TANT	19
			2		1006777-7	CAP., FIXED CER	18
			1		1006750-15	RESISTOR, FIXED MF	17
			2		1006750-56	RESISTOR, FIXED MF	16
			1		1010389-88	RESISTOR, FIXED MF	15
			~~2~~		~~1010369-85~~	~~RESISTOR, FIXED MF~~	~~14~~
			~~1~~		~~1006750-78~~	~~RESISTOR, FIXED MF~~	~~13~~
			4		1006750-53	RESISTOR, FIXED MF	12
			1		1006750-1	RESISTOR, FIXED MF	11
			4		1006750-67	RESISTOR, FIXED MF	10
			2		1006750-81	RESISTOR, FIXED MF	9
			2		1010389-78	RESISTOR, FIXED WW	8
			2		1006750-60	RESISTOR, FIXED, MF	7
			1		1010373-12	RESISTOR, VAR	6
			1		1010497	DIODE	5
			1		1010364-697	RESISTOR, FIXED MF	4
			1		1008581	INSULATOR, TOP	3
			1		1008580	INSULATOR, BOTTOM	2
			1		1007035	HEATSINK	1

QUANTITY REQUIRED

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS XX±.02 XXX±.005 ANGLES ± 1/2°
DO NOT SCALE THIS DRAWING

MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
Contract NAS 9-497

DRAWN J. Vilemus DATE 23 SEP 64
CHECKED A. Ulmich 25 SEP 64
APPROVAL
APPROVAL 12/4/64
NASA APPROVAL 12-8-64
MIT APPROVAL

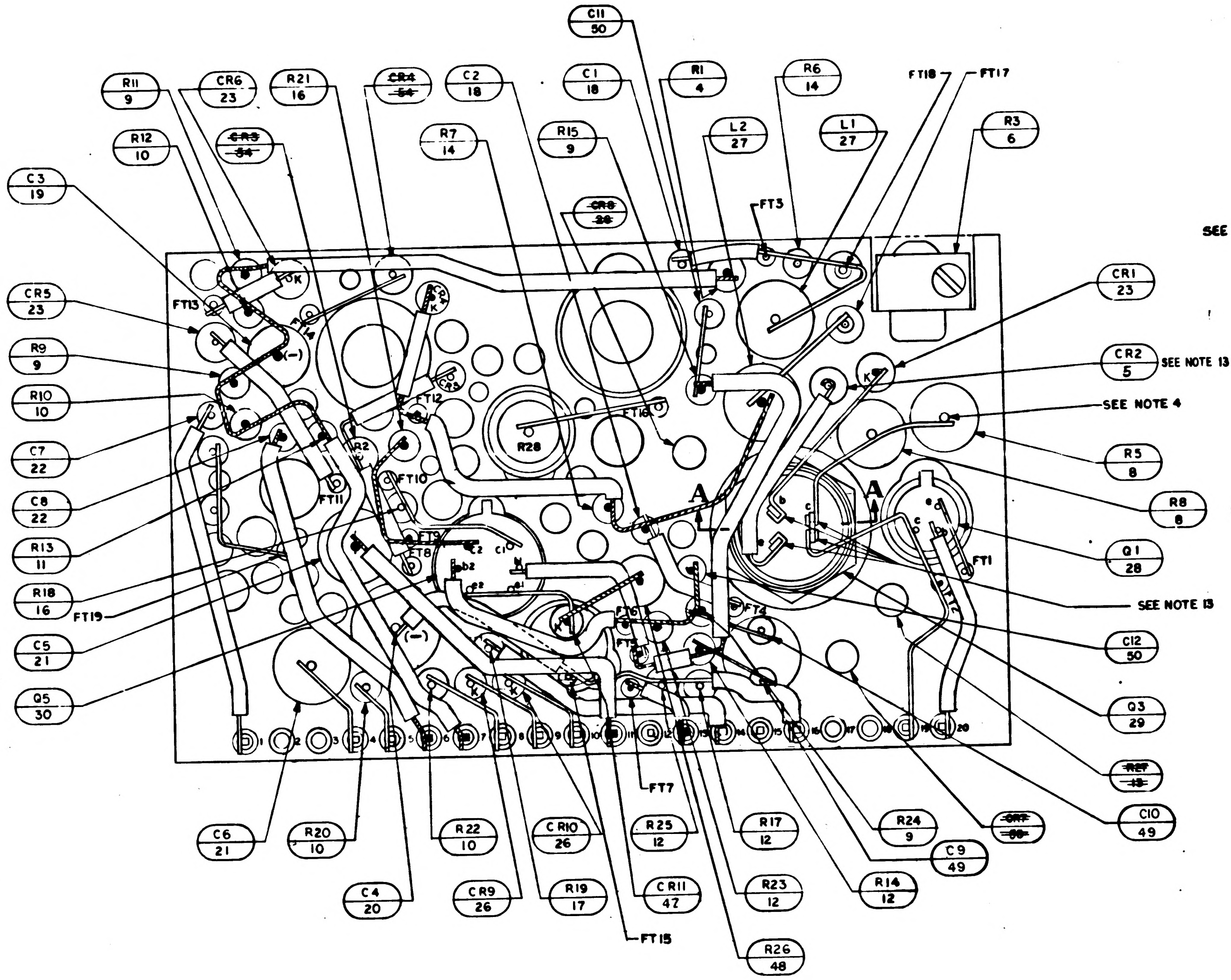
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BINARY CURRENT SWITCH COMPUTER OUTPUT ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007527
SCALE 5/1
WT
SHEET 1 OF 1

1007527 L

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO



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CR6 23
R21 16
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C2 18
C1 18
R1 4
R6 14
FT18
FT17
R12 10
~~CR3~~ ~~54~~
R7 14
R15 9
L2 27
L1 27
R3 6
C3 19
~~CR8~~ ~~36~~
FT3
CR5 23
FT13
R9 9
R10 10
C7 22
C8 22
R13 11
R18 16
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C5 21
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FT12
FT11
FT10
FT16
FT9
FT8
R28
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A
A
CR1 23
CR2 5
SEE NOTE 13
SEE NOTE 4
R5 8
R8 8
Q1 28
FT1
SEE NOTE 13
C12 50
Q3 29
~~REF~~ ~~18~~
C10 49
FT4
FT6
FT7
C6 21
R20 10
R22 10
CR10 26
R25 12
R17 12
R24 9
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CR11 47
R23 12
FT15
R26 48
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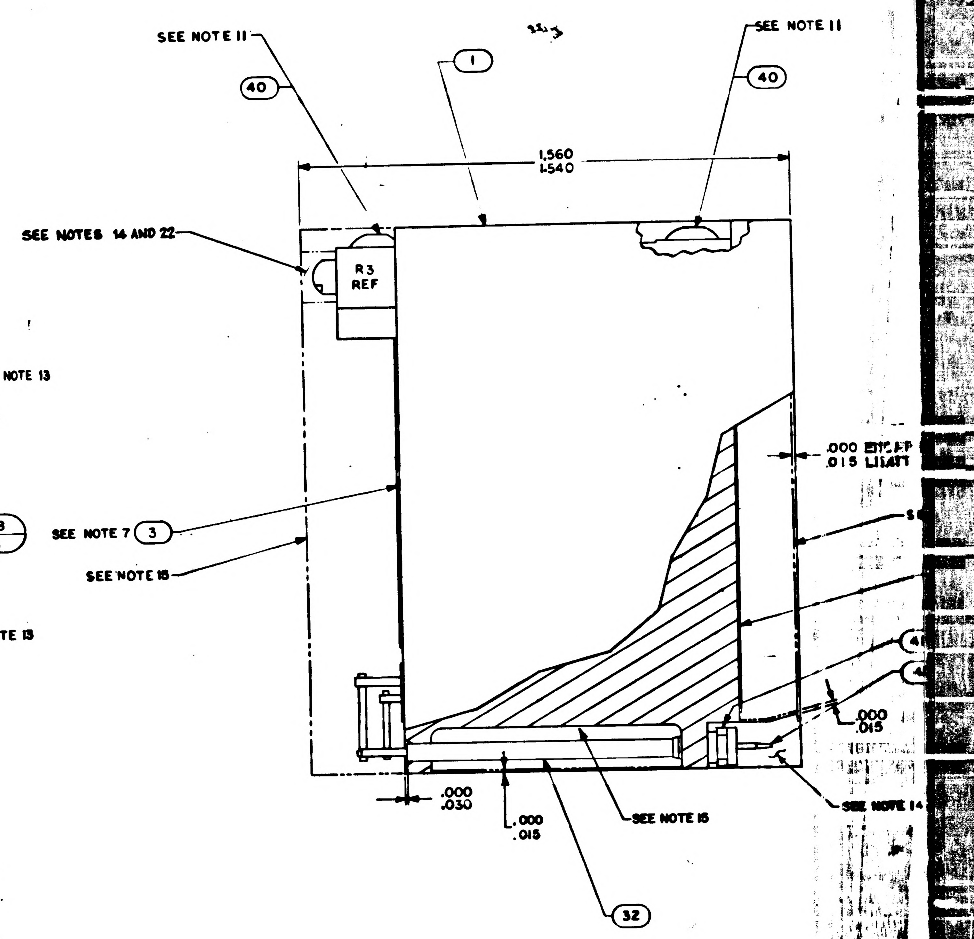

SEE NOTE 11
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SEE NOTE 11
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1.560
1.540
SEE NOTES 14 AND 22
R3 REF
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SEE NOTE 7
3
SEE NOTE 16
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.015
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.030
.000
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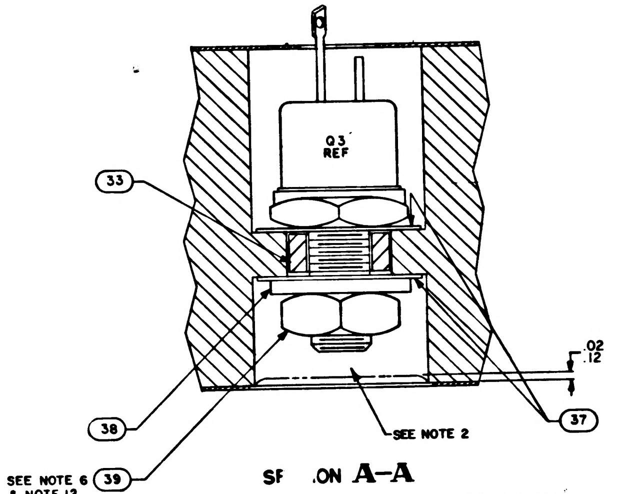
SEE NOTE 15
SEE NOTE 14
32



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SEE NOTE 2
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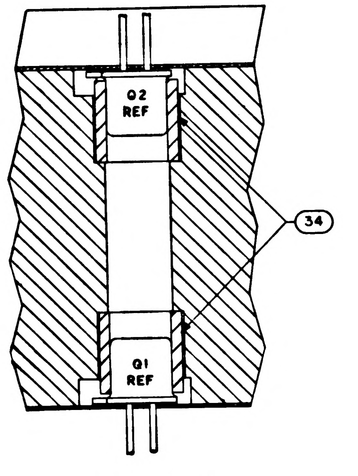
SEE NOTE 6 & NOTE 12
39

SF ON **A–A**



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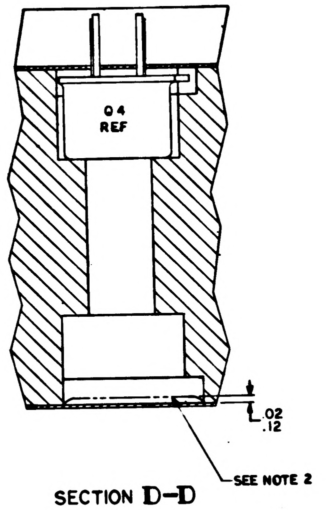
Q1 REF

SECTION **C–C**



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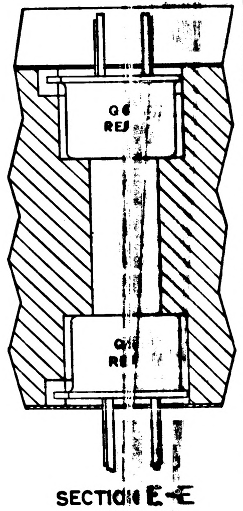
SEE NOTE 2

SECTION **D–D**



Q6 REF
Q5 REF

SECTION **E–E**

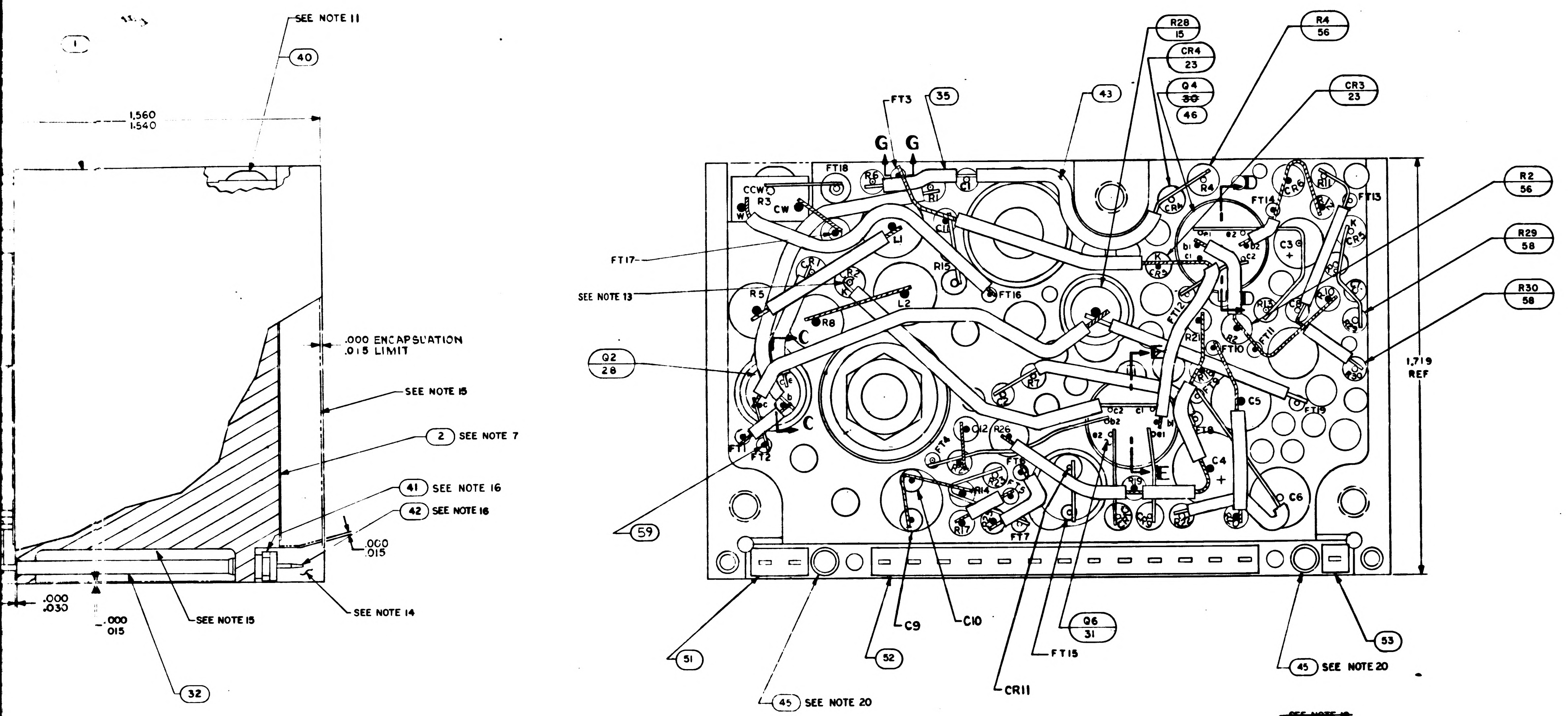
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITHE STANDARDS PRESCRIBED BY MIL-D-70327.
2. FILL PER ND1002117
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. APPLY SEALING COMPOUND MIL-S-40083 CLASS 31 TO FIND NO. 39.
7. ON FIND NUMBERS 2 AND 3 ;
   - BROKEN PATHS INDICATE INSULATION SLEEVING.
   - K INDICATES CATHODE SIDE OF DIODE.
   - FT ( ) INDICATES FEED THRU
   - PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
   - C INDICATES COLLECTOR LEAD OF TRANSISTOR.
   - B INDICATES BASE LEAD OF TRANSISTOR.
   - E INDICATES EMITTER LEAD OF TRANSISTOR.
   - C ( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR.
   - B ( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR.
   - E ( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR.
8. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE)PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
9. STAKE FIND NO.4 THRU FIND NO.31, FIND NO.33 AND FIND NO.34 PER ND 1002009, METHOD J.
10. AR DENOTES AS REQUIRED.
11. APPLY ZINC CHROMATE PRIMER MIL-P-6808 (ASG) TO THREADS OF FIND NO.40.
12. MOUNTING TORQUE FOR FIND NO.29 10/15 INCH POUND.
13. SOLDER PER ND 1002071.
14. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY NOT EXCEED THE NORMAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. MUST MEET REQUIREMENTS OF ND 1002136.
17. PROCURE PER PS-1007027
18. ~~BOND FIND NO.51, 52 AND 53 TO FIND NO.41 PER ND1002237.~~
19. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
20. BOND FIND NO. 45 TO FIND NO.1 PER ND1002004 TYPE I

~~21.~~ [illegible]

22. SEAL CALIBRATION POT R3 PER ND 1002009 METHOD J AFTER ALL THE REQUIREMENTS OF FTM 1007027 HAVE BEEN SATISFIED.
23. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II.~~ APPLY ~~MATERIAL AND COATING AS INDICATED IN TABLE I.~~
24. *CLEAN [illegible] WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-[illegible]L ALCOHOL PRIOR TO ENCAPSULATION.*
25. *EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.*

SYM	DESCRIPTION	DATE	APPROV
A	REVISED PER TDRR 5962	9 FEB 65	
B	REVISED PER TDRR 6825	4 MAR 65	
C	REVISED PER TDRR 17341	12 MAR 65	
D	REVISED PER TDRR17623	30 MAR 65	RJJ
E	REVISED PER TDRR 19386	2 JUN 65	MG
F	REVISED PER TDRR 19435		
G	REVISED PER TDRR 19505	JUN 65	
H	REVISED PER TDRR 20143	9 JUN 65	
J	REVISED PER TDRR 2 284	31 JUL 65	HP
K	REVISED PER TDRR 22359	23 SEP 65	MTY
L	REVISED PER TDRR 22967	11 OCT 65	JWP
M	REVISED PER TDRR 23988	NOV 65	EJP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41 SEE NOTE 16
42 SEE NOTE 16
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.015
.000
.030
.000
.015
SEE NOTE 15
SEE NOTE 14
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R28 15
CR4 23
Q4 30 46
R4 56
CR3 23
FT3
35
43
G G
FT18
R6
R1
CCW
R3
CW
FT17
SEE NOTE 13
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CR7
L1
L2
R8
R15
FT16
CR1
R4
CR8
R11
FT13
FT14
C3
CR5
CR6
R10
FT11
FT12
R2
R7
C5
FT19
Q2 28
C
C
FT1
FT2
C12
R26
FT4
FT5
E
E
C4
C6
R17
FT7
R2 56
R29 58
R30 58
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FT15
CR11
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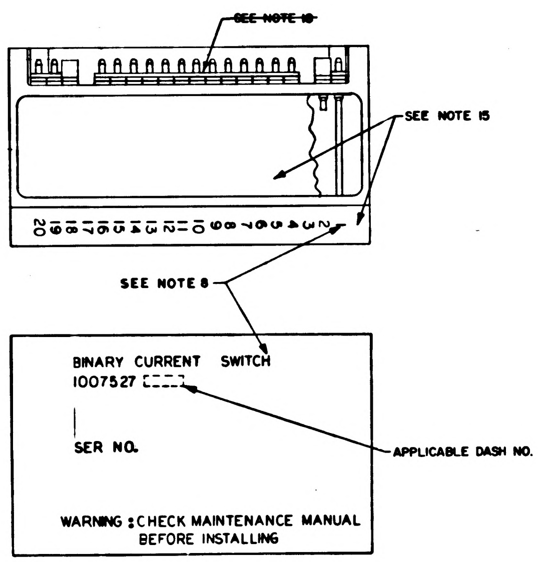
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SEE NOTE 15
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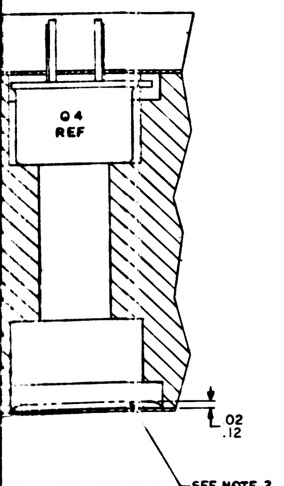
SEE NOTE 8
BINARY CURRENT SWITCH
1007527
SER NO.
APPLICABLE DASH NO.
WARNING : CHECK MAINTENANCE MANUAL
BEFORE INSTALLING

MARKING VIEW

SCALE 2/1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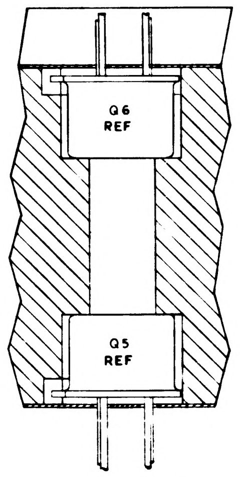
SEE NOTE 2

SECTION D-D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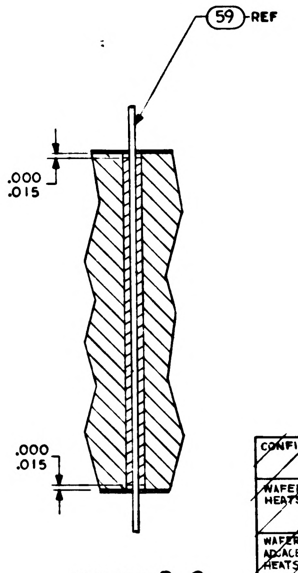
SECTION E-E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SECTION G-G

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK -FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE, 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN. WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

			QUANTITY REQUIRED 011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
			AR		1010848-2	WIRE, ELECTRICAL-NICKEL	59
			2		1006750-84	RESISTOR, FIXED, MF	58
			2		1006750-80	RESISTOR, FIXED, MF	57
			2		1006750-41	RESISTOR, FIXED, MF	56
			~~1~~		~~1010680-20~~	~~DIODE, ZENER~~	~~55~~
			~~2~~		~~1010833-1~~	~~DIODE, ZENER~~	~~54~~
			1		1008540-1	GASKET, CONNECTOR MINIATURE	53
			1		1008540-13	GASKET, CONNECTOR MINIATURE	52
			1		1008540-2	GASKET, CONNECTOR MINIATURE	51
			2		1006777-1	CAPACITOR	50
			☒		1009523	SCHEMATIC	REF
			2		1006777-16	CAPACITOR	49
			1		1006750-40	RESISTOR	48
			1		1010372-6	DIODE, ZENER	47
			1		1010376-3	TRANSISTOR	46
			2		1008256	POLARIZING PIN	45
			~~AR~~		~~1006776-22~~	~~INSULATION SLEEVING~~	44
			AR		1006776-21	INSULATION SLEEVING	43
			16		1006782-4	CONTACT, WRAPOST MALE MINAT	42
			16		1006775	INSULATOR, WRAPOST MALE MINAT	41
			2		1000093-3	SCREW, BOTTON HEAD	40
			1		MS 35650-104	NUT, PLAIN, HEX	39
			1		1008020-1	WASHER, FLAT	38
			2		1008024-1	WASHER, INSULATOR	37
			~~AR~~		~~1006757-8~~	~~WIRE, ELEC, .020 DIA~~	36
			AR		1006757-L	WIRE, ELEC, .010 X .020	35
			2		1008025-1	INSULATOR BUSHING	34
			1		1008021-1	INSULATOR, BUSHING	33
			AR		1006776-20	INSULATION SLEEVING	32
			1		1010715-2	TRANSISTOR	31
			1		1010376-4	TRANSISTOR	30
			1		1010269-1	TRANSISTOR	29
			2		1010357-1	TRANSISTOR	28
			2		1010388-39	INDUCTOR	27
			2		1010394	DIODE	26
			1		1010286-20	DIODE	25
			~~2~~		~~1010462-6~~	~~DIODE, ZENER~~	~~24~~
			5		1010385	DIODE	23
			2		1006777-24	CAP, FIXED CER	22
			2		1006777-33	CAP, FIXED CER	21
			1		1010393-039	CAP, FIXED TANT	20
			1		1006755-73	CAP, FIXED TANT	19
			2		1006777-7	CAP, FIXED CER	18
			1		1006750-15	RESISTOR, FIXED MF	17
			2		1006750-56	RESISTOR, FIXED MF	16
			1		1010389-88	RESISTOR, FIXED MF	15
			~~2~~		~~1010369-85~~	~~RESISTOR, FIXED MF~~	~~14~~
			~~1~~		~~1006750-78~~	~~RESISTOR, FIXED MF~~	~~13~~
			4		1006750-53	RESISTOR, FIXED MF	12
			1		1006750-1	RESISTOR, FIXED MF	11
			4		1006750-67	RESISTOR, FIXED MF	10
			2		1006750-81	RESISTOR, FIXED MF	9
			2		1010389-78	RESISTOR, FIXED WW	8
			2		1006750-60	RESISTOR, FIXED, MF	7
			1		1010373-12	RESISTOR, VAR	6
			1		1010497	DIODE	5
			1		1010364-697	RESISTOR, FIXED MF	4
			1		1008581	INSULATOR, TOP	3
			1		1008580	INSULATOR, BOTTOM	2
			1		1007035	HEATSINK	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX±.02 XXX±.005 ANGLES ± 1/2
DO NOT SCALE THIS DRAWING
MATERIAL —//—
HEAT TREATMENT —//—
FINAL FINISH —//—

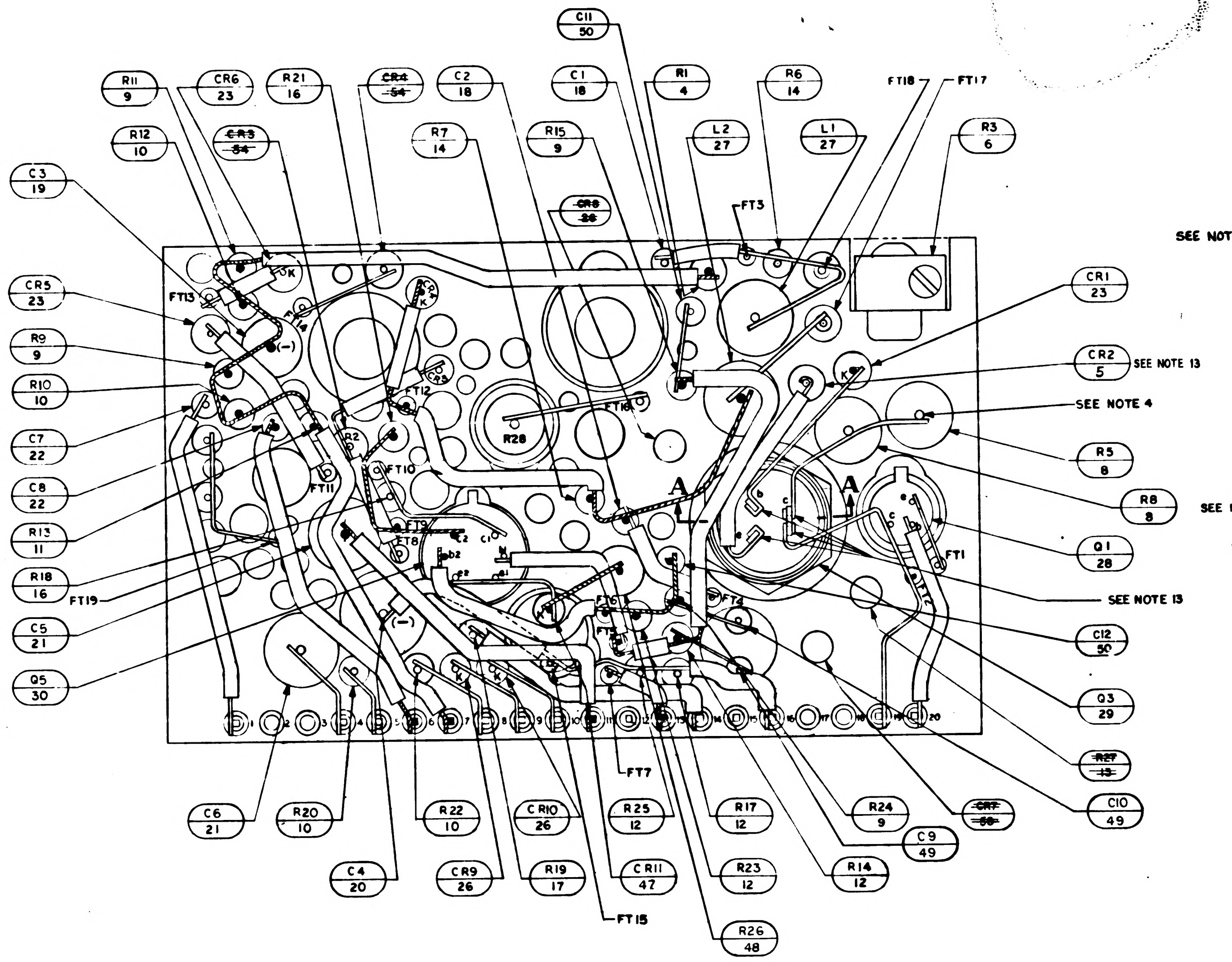
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN J. Kilroy DATE 28 SEP 64
CHECKED J. Ulrich 25 SEP 64
APPROVAL
APPROVAL D. R. Frost 12/4/64
NASA APPROVAL 12-8-64
MIT APPROVAL

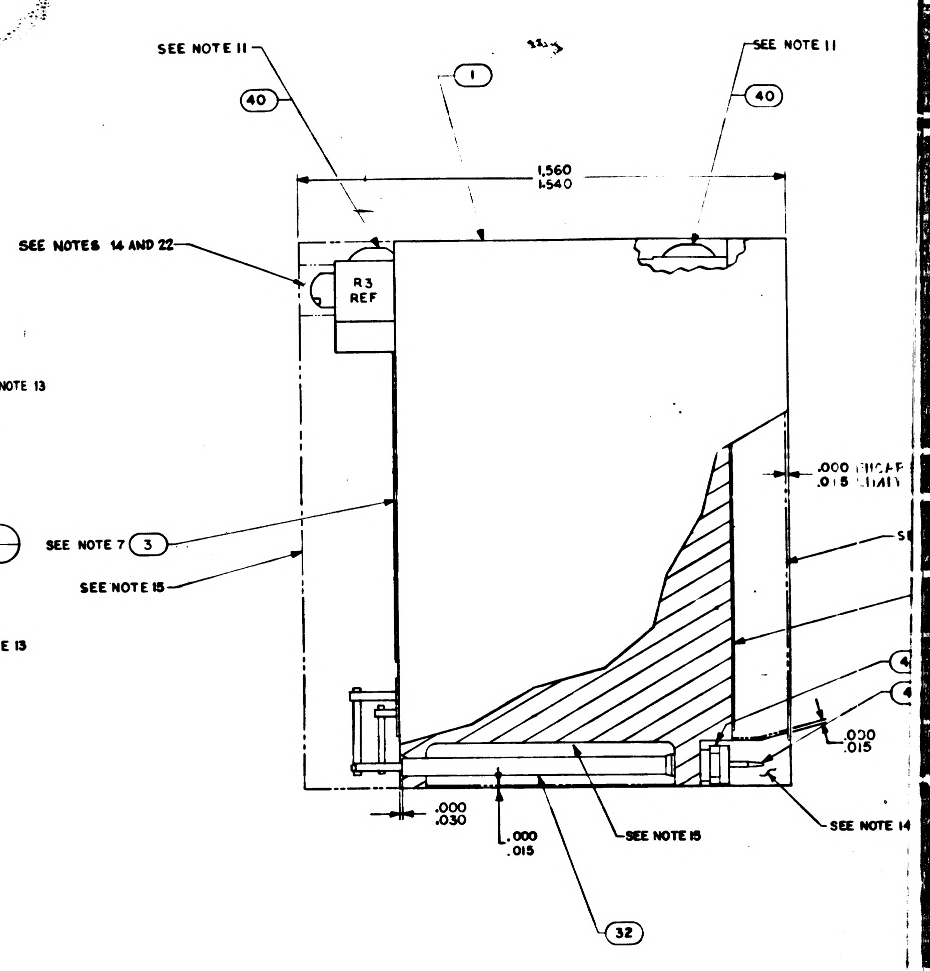
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BINARY CURRENT SWITCH
COMPUTER OUTPUT
ASSEMBLY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007527
SCALE 5/1
WT
SHEET 1 OF 1

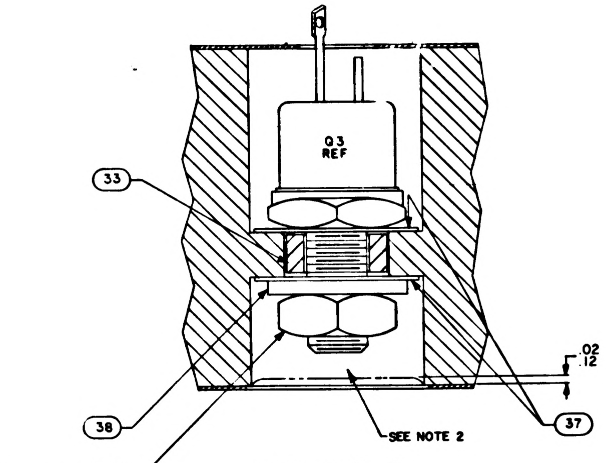
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.


C11 50
R11 9
CR6 23
R21 16
~~CR4 54~~
C2 18
C1 18
R1 4
R6 14
FT18
FT17
R12 10
~~CR3 54~~
R7 14
R15 9
L2 27
L1 27
R3 6
C3 19
~~CR8 38~~
FT3
CR5 23
FT13
R9 9
R10 10
C7 22
C8 22
R13 11
R18 16
FT19
C5 21
Q5 30
FT11
FT10
FT12
FT16
FT8
FT9
FT1
FT4
R28
A
CR1 23
CR2 5
SEE NOTE 13
SEE NOTE 4
R5 8
R8 8
Q1 28
SEE NOTE 13
C12 50
Q3 29
~~R27 13~~
C10 49
~~CR7 88~~
C9 49
R24 9
R14 12
R26 48
R23 12
R17 12
FT7
R25 12
CR11 47
FT15
CR10 26
R19 17
R22 10
CR9 26
C4 20
R20 10
C6 21


SEE NOTE 11
40
1
SEE NOTE 11
40
1.560
1.540
SEE NOTES 14 AND 22
R3 REF
.000
.015
SEE NOTE 7
3
SEE NOTE 15
.000
.015
SEE NOTE 14
.000
.030
.000
.015
SEE NOTE 15
32

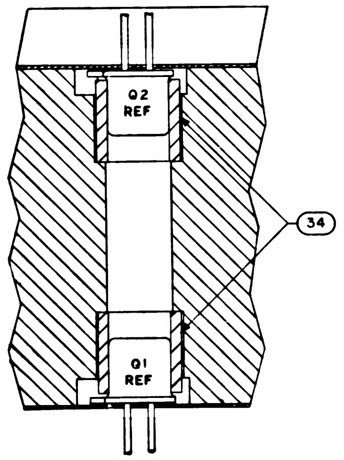
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITHE STANDARDS PRESCRIBED BY MIL-D-70327.
2. FILL PER ND1002117
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. APPLY SEALING COMPOUND MIL-S-40083 CLASS 31 TO FIND NO. 39.
7. ON FIND NUMBERS 2 AND 3 ;
   - BROKEN PATHS INDICATE INSULATION SLEEVING.
   - K INDICATES CATHODE SIDE OF DIODE.
   - FT ( ) INDICATES FEED THRU
   - PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
   - C INDICATES COLLECTOR LEAD OF TRANSISTOR.
   - B INDICATES BASE LEAD OF TRANSISTOR.
   - E INDICATES EMITTER LEAD OF TRANSISTOR.
   - C ( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR.
   - B ( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR.
   - E ( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR.
8. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE)PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
9. STAKE FIND NO.4 THRU FIND NO.31, FIND NO.33 AND FIND NO.34 PER ND 1002009, METHOD J.
10. AR DENOTES AS REQUIRED.
11. APPLY ZINC CHROMATE PRIMER MIL-P-6808 (ASG) TO THREADS OF FIND NO.40.
12. MOUNTING TORQUE FOR FIND NO.29 10/15 INCH POUND.
13. SOLDER PER ND 1002071.
14. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY NOT EXCEED THE NORMAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. MUST MEET REQUIREMENTS OF ND 1002136.
17. PROCURE PER PS-1007027
18. ~~BOND FIND NO.51, 52 AND 53 TO FIND NO.41 PER ND1002237.~~
19. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
20. BOND FIND NO. 45 TO FIND NO. 1 PER ND1002004 TYPE I
21. ~~[illegible]~~
22. SEAL CALIBRATION POT R3 PER ND 1002009 METHOD J AFTER ALL THE REQUIREMENTS OF FTM 1007027 HAVE BEEN SATISFIED.
23. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II.~~ APPLY ~~MATERIAL AND COATING AS INDICATED IN TABLE I.~~

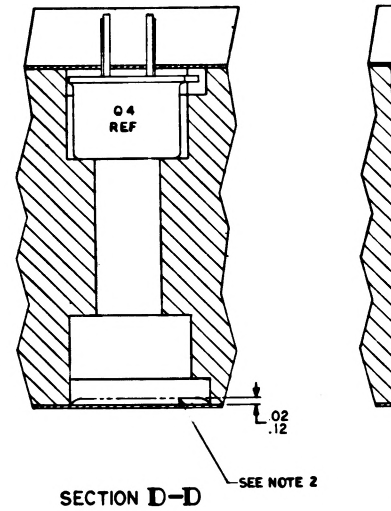

Q3 REF
33
.02
.12
38
SEE NOTE 2
37
SEE NOTE 6 & NOTE 12
39

SECTION A-A

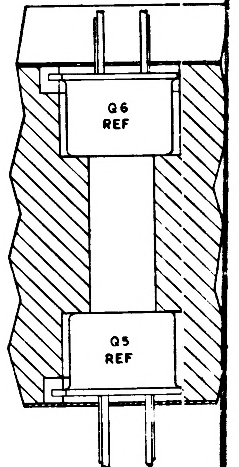
24. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
25. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.


Q2 REF
34
Q1 REF

SECTION C-C

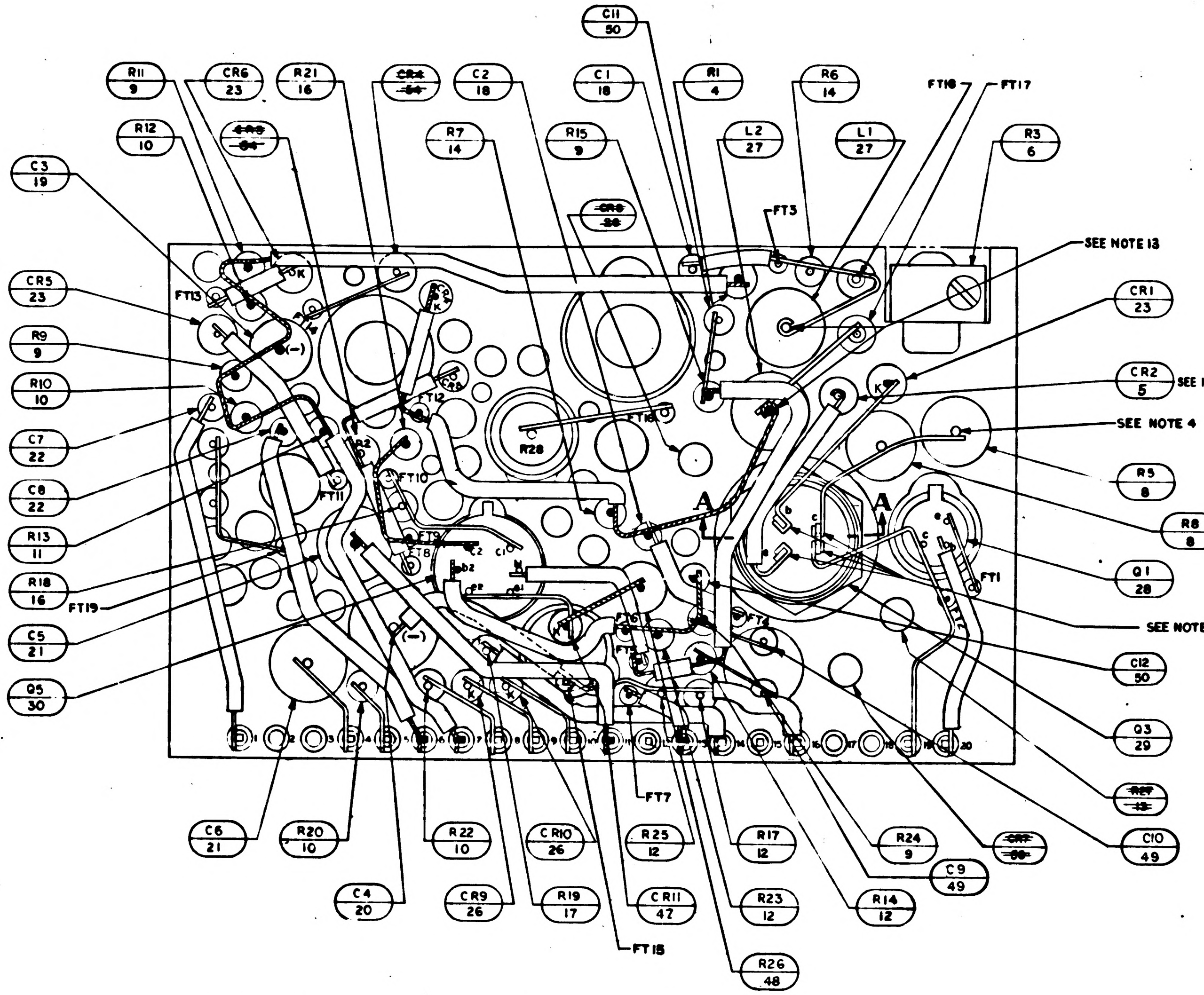

Q4 REF
.02
.12
SEE NOTE 2

SECTION D-D

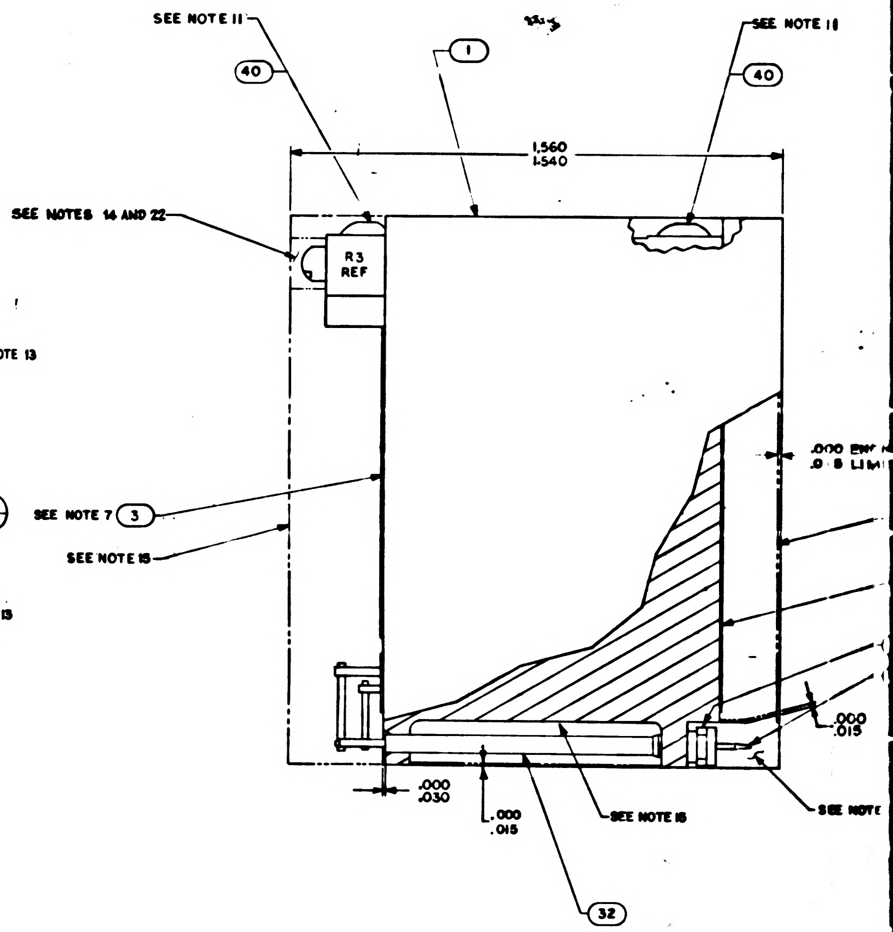

Q6 REF
Q5 REF

SECTION E-E

1007527 REV LTR M SH 1


C11 50
R11 9
CR6 23
R21 16
~~CR4~~ ~~54~~
C2 18
C1 18
R1 4
R6 14
FT18
FT17
R12 10
~~CR3~~ ~~54~~
R7 14
R15 9
L2 27
L1 27
R3 6
C3 19
~~CR8~~ ~~26~~
FT3
SEE NOTE 13
CR5 23
FT13
R9 9
R10 10
C7 22
C8 22
R13 11
R18 16
FT19
C5 21
Q5 30
CR1 23
CR2 5
SEE NOTE 13
SEE NOTE 4
R5 8
R8 8
Q1 28
SEE NOTE 13
C12 50
Q3 29
~~REF~~ ~~13~~
~~CR7~~ ~~50~~
C10 49
FT1
FT4
FT6
FT7
FT8
FT9
FT10
FT11
FT12
FT16
R28
R2
K
(-)
A
A
b
c
e
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
C6 21
R20 10
R22 10
CR10 26
R25 12
R17 12
R24 9
C9 49
C4 20
CR9 26
R19 17
CR11 47
R23 12
R14 12
FT15
R26 48

26. MOISTUREPROOF PER ND 1002292 AS REQUIRED BY FIND NO. (60) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.


SEE NOTE 11
40
1
SEE NOTE 11
40
1.560
1.540
SEE NOTES 14 AND 22
R3 REF
SEE NOTE 7
3
SEE NOTE 15
.000
.030
.000
.015
SEE NOTE 16
32
.000
.015
SEE NOTE
.000
.0 5 LIM

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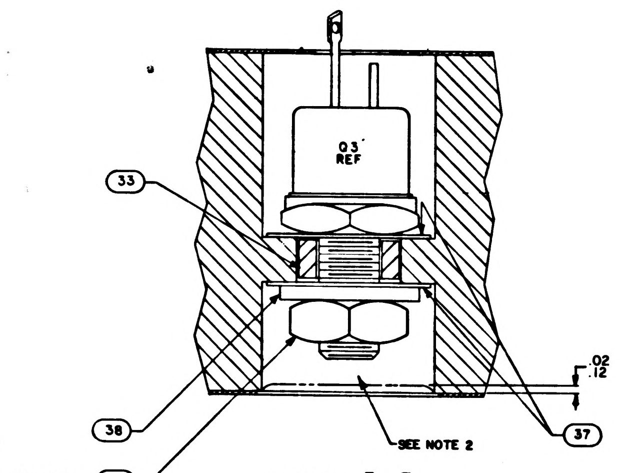
17. PROCURE PER PS-1007027
~~18. BOND FIND NO.51, 52 AND 53 TO FIND NO.41 PER ND1002237.~~
19. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
20. BOND FIND NO. 45 TO FIND NO.1 PER ND1002004 TYPE I

[illegible]

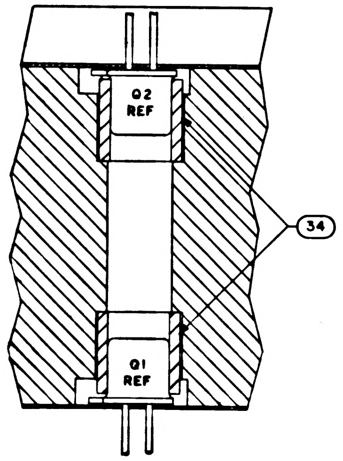
22. SEAL CALIBRATION POT R3 PER ND 1002009 METHOD J AFTER ALL THE REQUIREMENTS OF FTM 1007027 HAVE BEEN SATISFIED.
23. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II.~~ APPLY ~~MATERIAL AND COATING AS INDICATED IN TABLE I.~~


Q3 REF
33
38
SEE NOTE 2
.02
.12
37
SEE NOTE 6 & NOTE 12
39

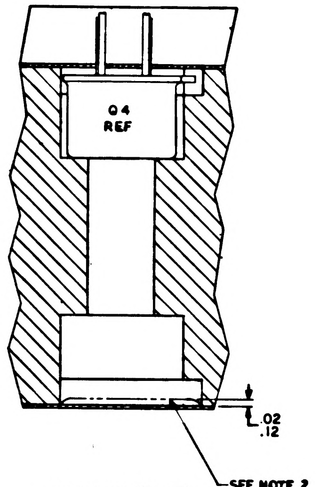
SECTION A-A

24. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

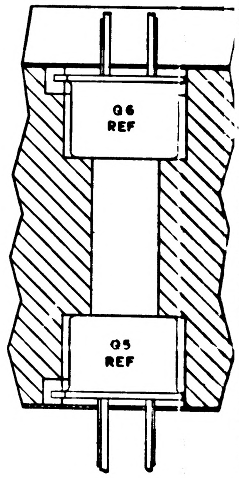
25. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.


Q2 REF
34
Q1 REF

SECTION C-C

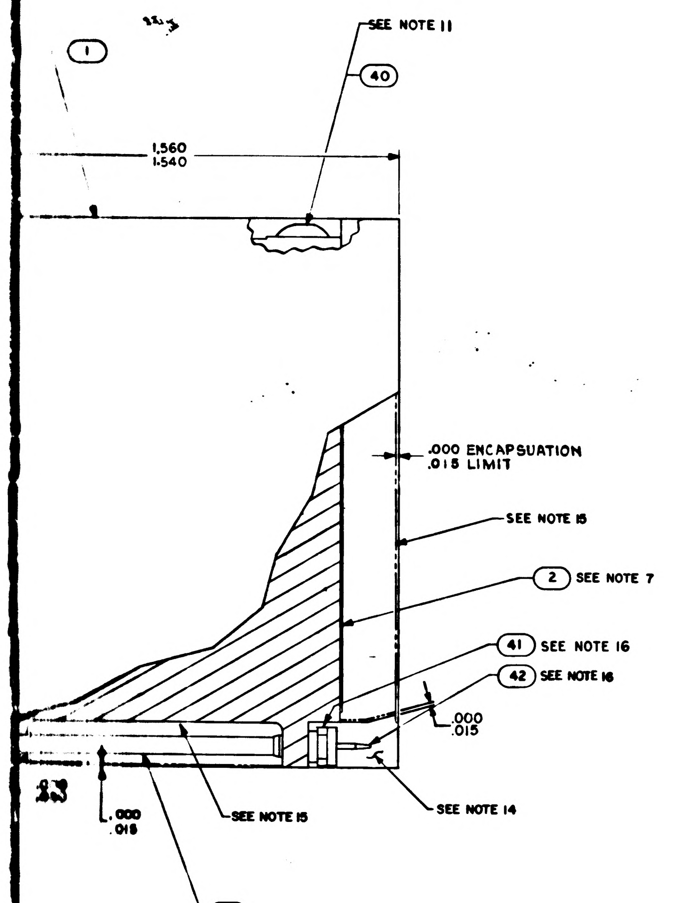

Q4 REF
Q5 REF
.02
.12
SEE NOTE 2

SECTION D-D

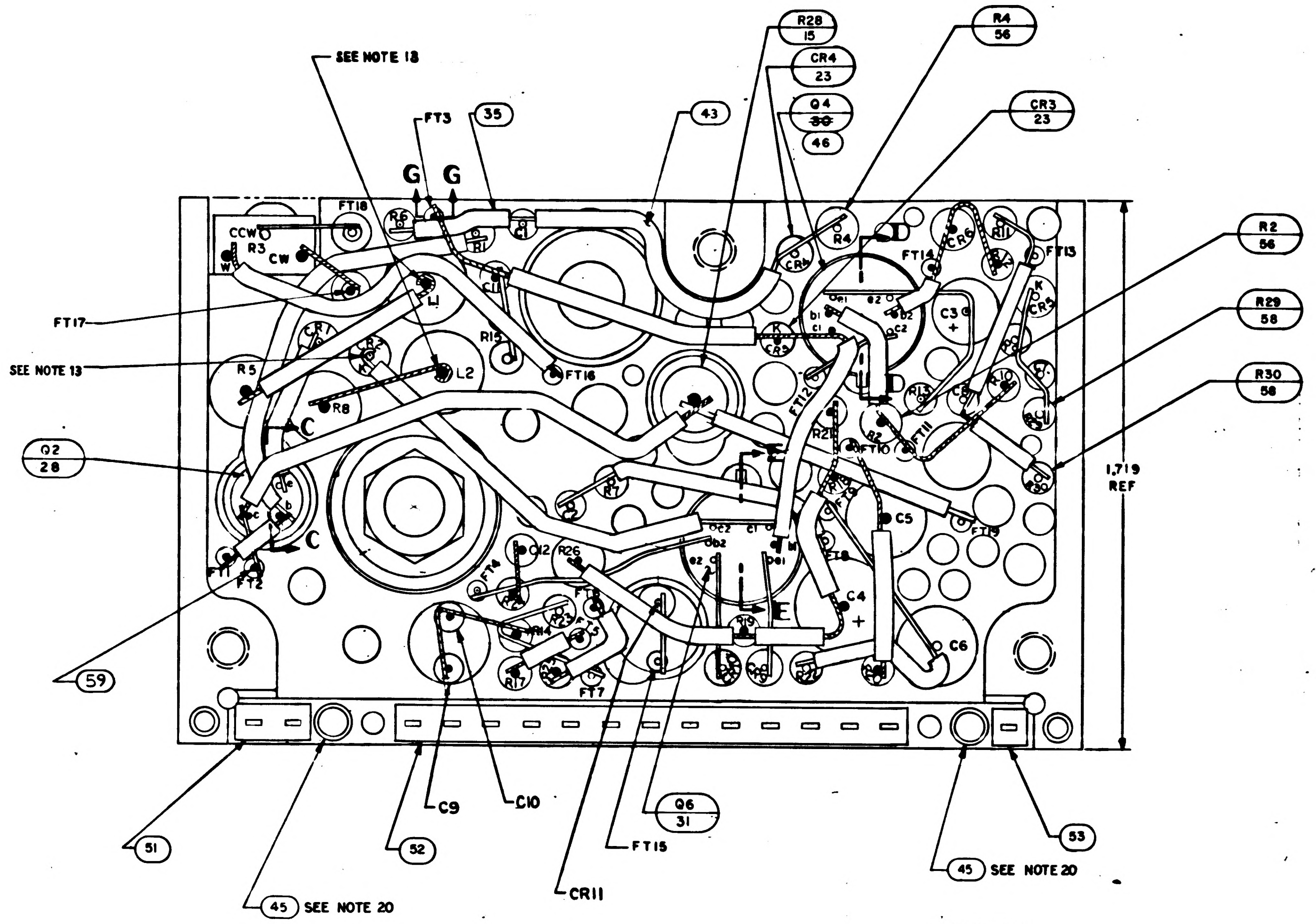

Q6 REF
Q5 REF

SECTION E-E

SYM	DESCRIPTION	DATE	APPROV
A	REVISED PER TDRR 15962	9 FEB 65	
B	REVISED PER TDRR 16825	4 MAR 65	
C	REVISED PER TDRR 17341	12 MAR 65	EF
D	REVISED PER TDRR 17623	MAR 65	RJJ
E	REVISED PER TDRR 19386	2 JUN 65	M.G.
F	REVISED PER TDRR 19435	7 JUN 65	J.R.
G	REVISED PER TDRR 19505	8-JUN-65	EF
H	REVISED PER TDRR 20143	14 JUN 65	T.M.
J	REVISED PER TDRR 21286	31 JUL 65	HP
K	REVISED PER TDRR 22359	23 SEP 65	
L	REVISED PER TDRR 22967	11 OCT 65	JWP EF
M	REVISED PER TDRR 23888	17 NOV 65	RP
N	REVISED PER TDRR 26397	24 FEB 66	RP
P	REVISED PER TDRR 33915	6 AUG 67	



SEE NOTE 11
40
1
1.560
1.540
.000 ENCAPSULATION
.015 LIMIT
SEE NOTE 15
2 SEE NOTE 7
41 SEE NOTE 16
42 SEE NOTE 16
.000
.015
SEE NOTE 14
SEE NOTE 15
.000
.015
32



SEE NOTE 18
FT3
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G G
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CR4 23
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R4 56
CR3 23
FT18
R6
R3
CCW
CW
FT17
SEE NOTE 13
R5
R8
L1
L2
R15
FT16
C1
C2
C3
FT14
FT13
R2 56
R29 58
R30 58
Q2 28
C
C
FT1
FT2
FT12
FT11
FT10
R27
R26
C5
C4
C6
FT9
FT8
FT4
FT5
FT7
R17
E
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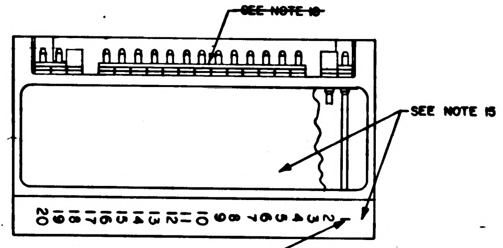
51
45 SEE NOTE 20
52
C9
C10
Q6 31
FT15
CR11
45 SEE NOTE 20
53



SEE NOTE 18
SEE NOTE 15
20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

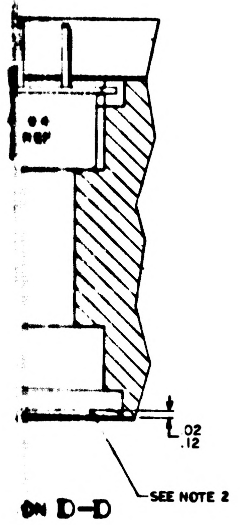
SEE NOTE 8

BINARY CURRENT SWITCH
1007527 ----
SER NO.

WARNING : CHECK MAINTENANCE MANUAL
BEFORE INSTALLING

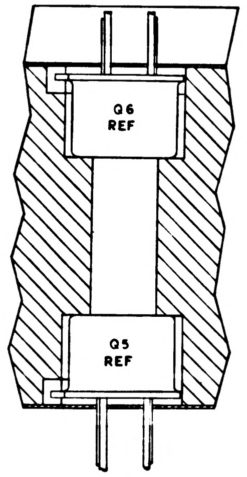
APPLICABLE DASH NO.

MARKING VIEW
SCALE 2/1



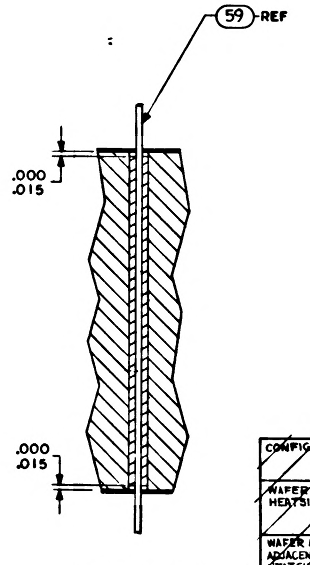
Q4 REF
.02
.12
SEE NOTE 2

SECTION D-D



Q6 REF
Q5 REF

SECTION E-E



59 REF
.000
.015
.000
.015

SECTION G-G

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN. WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		AR	—		SEE NOTE 26	MOISTUREPROOFING	60
		AR	AR		1010848-2	WIRE, ELECTRICAL-NICKEL	59
		2	2		1006750-84	RESISTOR, FIXED, MF	58
		2	2		1006750-80	RESISTOR, FIXED, MF	57
		2	2		1006750-41	RESISTOR, FIXED, MF	56
			~~1~~		~~1010880-20~~	~~DIODE, ZENER~~	~~55~~
			~~2~~		~~1010883-1~~	~~DIODE, ZENER~~	~~54~~
		1	1		1008540-1	GASKET, CONNECTOR MINIATURE	53
		1	1		1008540-13	GASKET, CONNECTOR MINIATURE	52
		1	1		1008540-2	GASKET, CONNECTOR MINIATURE	51
		2	2		1006777-1	CAPACITOR	50
		☒	☒		1009523	SCHEMATIC	REF
		2	2		1006777-16	CAPACITOR	49
		1	1		1006750-40	RESISTOR	48
		1	1		1010372-6	DIODE, ZENER	47
		1	1		1010376-3	TRANSISTOR	46
		2	2		1008256	POLARIZING PIN	45
			~~AR~~		~~1006776-22~~	~~INSULATION SLEEVING~~	44
		AR	AR		1006776 - 21	INSULATION SLEEVING	43
		16	16		1006782 — 4	CONTACT, WRAPOST MALE MINAT	42
		16	16		1006775	INSULATOR, WRAPOST MALE MINAT	41
		2	2		1000093 — 3	SCREW, BOTTON HEAD	40
		1	1		MS 35650 — 104	NUT, PLAIN, HEX	39
		1	1		1008020—1	WASHER, FLAT	38
		2	2		1008024—1	WASHER, INSULATOR	37
			~~AR~~		~~1006757-6~~	~~WIRE, ELEC, .023 DIA~~	36
		AR	AR		1006757—L	WIRE, ELEC, .010 X .020	35
		2	2		1008025—1	INSULATOR BUSHING	34
		1	1		1008021 — 1	INSULATOR, BUSHING	33
		AR	AR		1006776—20	INSULATION SLEEVING	32
		1	1		1010715 - 2	TRANSISTOR	31
		1	1		1010376 - 4	TRANSISTOR	30
		1	1		1010269 - 1	TRANSISTOR	29
		2	2		1010357-1	TRANSISTOR	28
		2	2		1010388 - 39	INDUCTOR	27
		2	2		1010394	DIODE	26
			~~1~~		~~1010285-20~~	~~DIODE~~	~~25~~
			~~2~~		~~1010462-6~~	~~DIODE, ZENER~~	~~24~~
		5	5		1010385	DIODE	23
		2	2		1006777—24	CAP., FIXED CER	22
		2	2		1006777—33	CAP., FIXED CER	21
		1	1		1010393 —039	CAP., FIXED TANT	20
		1	1		1006755 —73	CAP., FIXED TANT	19
		2	2		1006777 —7	CAP., FIXED CER	18
		1	1		1006750 —15	RESISTOR, FIXED MF	17
		2	2		1006750 —56	RESISTOR, FIXED MF	16
		1	1		1010389 - 88	RESISTOR, FIXED MF	15
			~~2~~		~~1010369-85~~	~~RESISTOR, FIXED MF~~	~~14~~
			~~1~~		~~1008750-78~~	~~RESISTOR, FIXED MF~~	~~13~~
		4	4		1006750 —53	RESISTOR, FIXED MF	12
		1	1		1006750 —1	RESISTOR, FIXED MF	11
		4	4		1006750—67	RESISTOR, FIXED MF	10
		2	2		1006750—81	RESISTOR, FIXED MF	9
		2	2		1010339 —78	RESISTOR, FIXED WW	8
		2	2		1006750-60	RESISTOR, FIXED, MF	7
		1	1		1010373 —12	RESISTOR, VAR	6
		1	1		1010497	DIODE	5
		1	1		1010364—697	RESISTOR, FIXED MF	4
		1	1		1008581	INSULATOR, TOP	3
		1	1		1008580	INSULATOR, BOTTOM	2
		1	1		1007035	HEATSINK	1

QUANTITY REQUIRED
LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX ±.02 XXX ±.005 ANGLES ± 1/2
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN J. Villanueva DATE 23 SEP 64
CHECKED A. Ulrich 25 SEP 64
APPROVAL
APPROVAL 12/1/64
NASA APPROVAL 12 FEB 64
MIT APPROVAL for Shaw

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

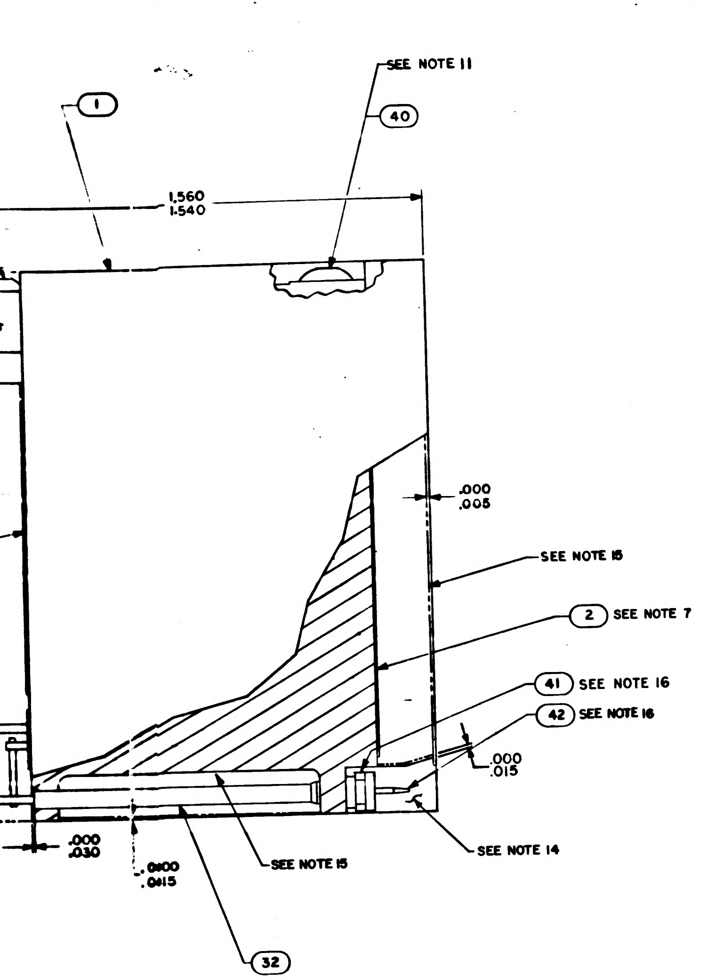
BINARY CURRENT SWITCH
COMPUTER OUTPUT
ASSEMBLY

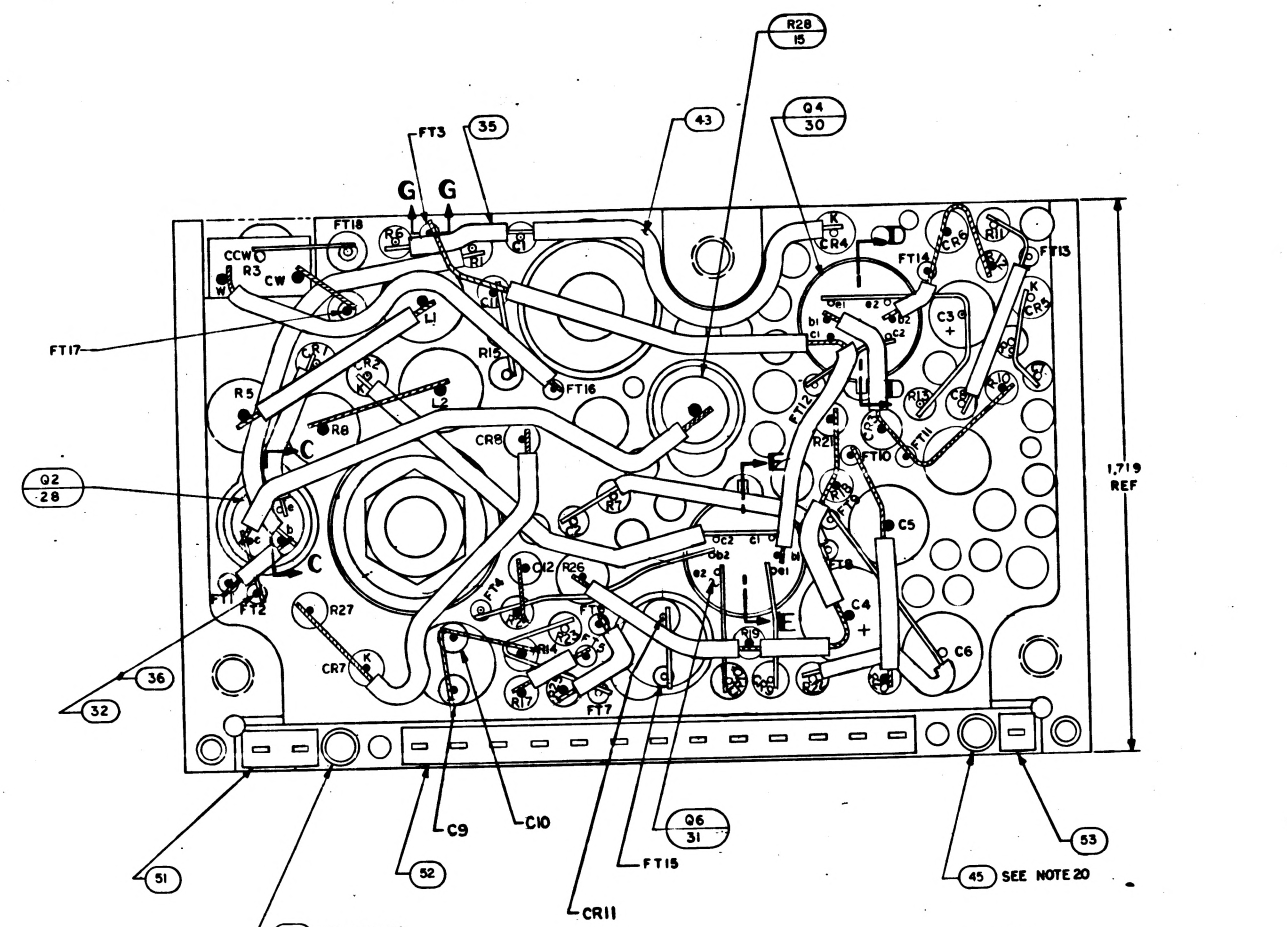
CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007527
SCALE 5/1
WT
SHEET 1 OF 1

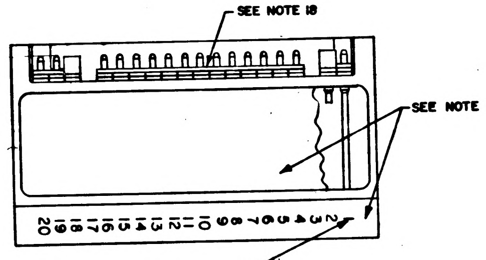
1007527 REV P SH 1

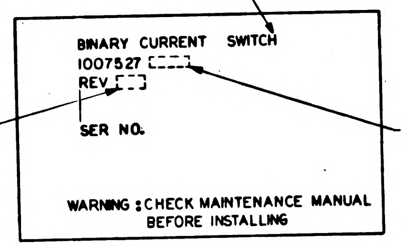
2/1007527

SYM	REVISIONS DESCRIPTION	DATE	APPR


SEE NOTE 11
1
40
1.560
1.540
.000
.005
SEE NOTE 15
2 SEE NOTE 7
41 SEE NOTE 16
42 SEE NOTE 16
.000
.015
SEE NOTE 14
SEE NOTE 15
.000
.030
.0100
.0415
32

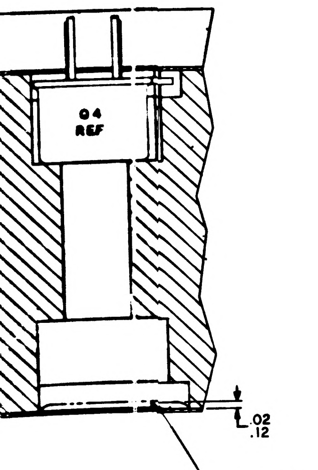

R28
15
Q4
30
43
FT3
35
G G
FT18
R6
CCW R3 CW
FT17
R1
L1
CR1
CR3
R15
FT16
L2
R5
R8
CR8
CR4
FT14
C3
R11
CR5
FT13
R10
R13
FT12
R2
FT11
FT10
C5
Q2
28
C
C
FT1 FT2
R27
C12
R26
FT8
C4
CR7
R14
R17
FT7
C6
1,719
REF
36
32
51
45 SEE NOTE 20
C9
C10
52
Q6
31
FT15
CR11
45 SEE NOTE 20
53


SEE NOTE 18
SEE NOTE 15
20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
SEE NOTE 8


BINARY CURRENT SWITCH
1007527
REV
SER NO.
WARNING : CHECK MAINTENANCE MANUAL BEFORE INSTALLING

DWG REV LTR
APPLICABLE DASH NO.

MARKING VIEW
SCALE 2/1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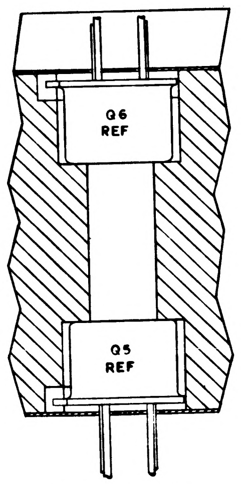
Q5
REF
.02
.12
SEE NOTE 2

SECTION D-D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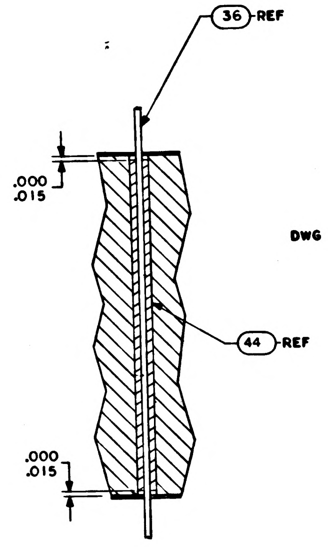
Q5
REF

SECTION E-E


36 REF
.000
.015
44 REF
.000
.015

SECTION G-G

			011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
			1		1008540-1	GASKET, CONNECTOR MINIATURE	53
			1		1008540-13	GASKET, CONNECTOR MINIATURE	52
			1		1008540-2	GASKET, CONNECTOR MINIATURE	51
			2		1006777-1	CAPACITOR	50
			☒		1009523	SCHEMATIC	REF
			2		1006777-16	CAPACITOR	49
			1		1006750-40	RESISTOR	48
			1		1010372-6	DIODE, ZENER	47
							46
			2		1008256	POLARIZING PIN	45
			AR		1006776 - 22	INSULATION SLEEVING	44
			AR		1006776 - 21	INSULATION SLEEVING	43
			16		100678[illegible] — 4	CONTACT, WRAPOST MALE MINAT	42
			16		1006775	INSULATOR, WRAPOST MALE MINAT	41
			2		1000093 — 3	SCREW, BOTTON HEAD	40
			1		MS 35650 — 104	NUT, PLAIN, HEX	39
			1		1008020—1	WASHER, FLAT	38
			2		1008024—1	WASHER, INSULATOR	37
			AR		1006757—8	WIRE, ELEC, .020 DIA	36
			AR		1006757—1	WIRE, ELEC, .010 X .020	35
			2		1008025—1	INSULATOR BUSHING	34
			1		1008021 — 1	INSULATOR, BUSHING	33
			AR		1006776—20	INSULATION SLEEVING	32
			1		1010715 —1	TRANSISTOR	31
			2		1010376 — 4	TRANSISTOR	30
			1		1010269 — 1	TRANSISTOR	29
			2		1010357-1	TRANSISTOR	28
			2		1010388 — 39	INDUCTOR	27
			3		1010394	DIODE	26
			1		1010286 - 20	DIODE	25
			2		1010462 - 6	DIODE, ZENER	24
			3		1010385	DIODE	23
			2		1006777—24	CAP., FIXED CER	22
			2		1006777—33	CAP., FIXED CER	21
			1		1010393 —039	CAP., FIXED TANT	20
			1		1006755 —73	CAP., FIXED TANT	19
			2		1006777 —13	CAP., FIXED CER	18
			1		1006750 —15	RESISTOR, FIXED MF	17
			2		1006750 —56	RESISTOR, FIXED MF	16
			1		1010389 - [illegible]	RESISTOR, FIXED MF	15
			2		1010369 — 85	RESISTOR, FIXED MF	14
			1		1006750-78	RESISTOR, FIXED MF	13
			4		1006750 —53	RESISTOR, FIXED MF	12
			1		1006750 —1	RESISTOR, FIXED MF	11
			4		1006750—67	RESISTOR, FIXED MF	10
			4		1006750—81	RESISTOR, FIXED MF	9
			2		1010389 —78	RESISTOR, FIXED WW	8
							7
							6
			1		1010373 —12	RESISTOR, VAR	5
			1		1010497	DIODE	5
			1		1010364 — 697	RESISTOR, FIXED MF	4
			1		1008581	INSULATOR, TOP	3
			1		1008580	INSULATOR, BOTTOM	2
			1		1007035	HEATSINK	1

QUANTITY REQUIRED

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX±.02 XXX±.005 ANGLES ± 1/2
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN J. Villeneuve DATE 23 SEP 64
CHECKED A. Ulrich 25 SEP 64
APPROVAL
APPROVAL 12/4/64
NASA APPROVAL 12-8-64
MIT APPROVAL

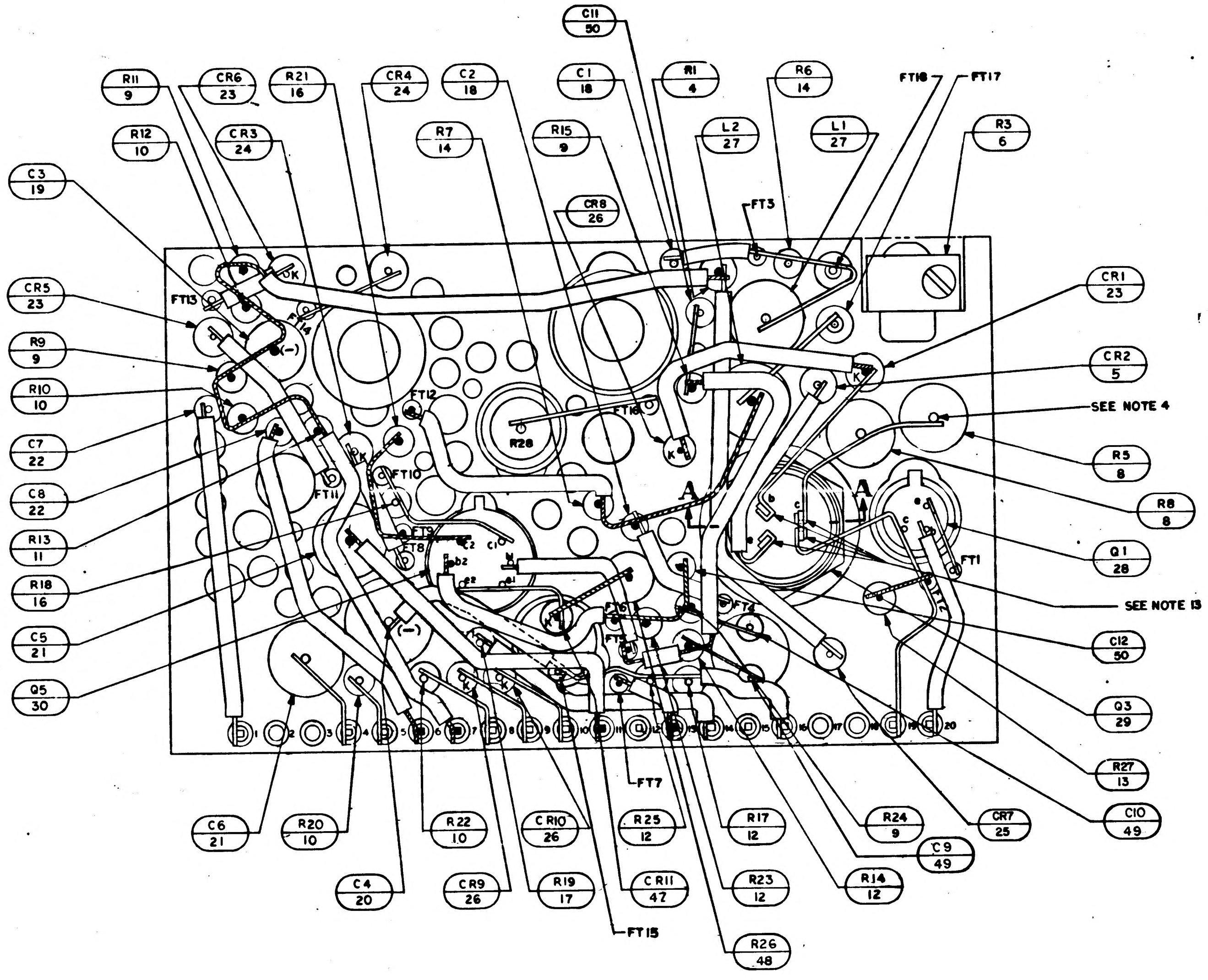
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BINARY CURRENT SWITCH COMPUTER OUTPUT ASSEMBLY

CODE IDENT NO.
SIZE J
NASA DRAWING NO. 1007527
SCALE 5/1
WT
SHEET 1 OF 1

1007527

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.


C11 50
R11 9
CR6 23
R21 16
CR4 24
C2 18
C1 18
R1 4
R6 14
FT18
FT17
R12 10
CR3 24
R7 14
R15 9
L2 27
L1 27
R3 6
C3 19
CR8 26
FT3
CR5 23
FT13
CR1 23
R9 9
CR2 5
R10 10
FT12
SEE NOTE 4
C7 22
R28
FT16
R5 8
C8 22
FT10
FT11
A
A
R8 8
R13 11
FT9
Q1 28
R18 16
FT1
SEE NOTE 13
C5 21
C12 50
FT4
Q5 30
Q3 29
R27 13
C6 21
R20 10
FT7
R22 10
CR10 26
R25 12
R17 12
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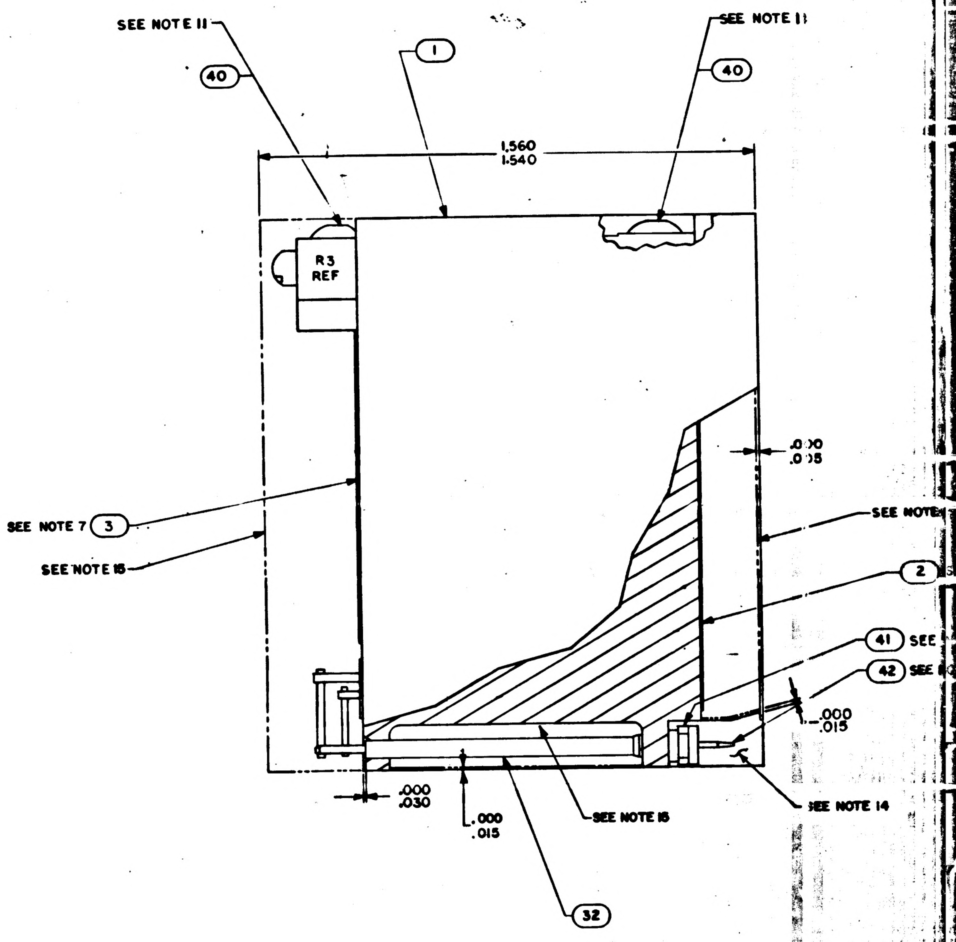
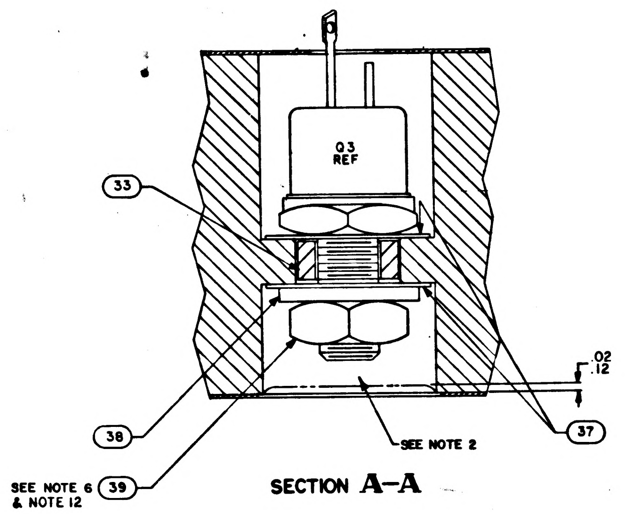
CR11 47
R23 12
R14 12
FT15
R26 48

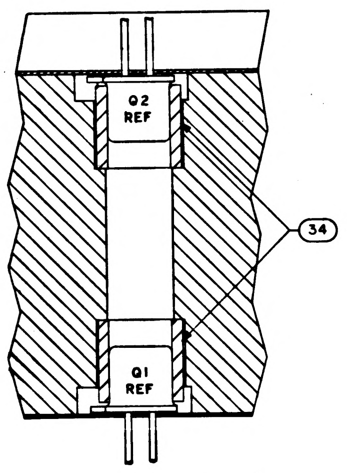

SEE NOTE 11
40
1
SEE NOTE 11
40
1.560
1.540
R3 REF
.000
.005
SEE NOTE 7
3
SEE NOTE 16
SEE NOTE
2
41 SEE
42 SEE
.000
.015
SEE NOTE 14
.000
.030
.000
.015
SEE NOTE 15
32

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITHE STANDARDS PRESCRIBED BY MIL-D-70327.
2. FILL PER ND1002117
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. APPLY SEALING COMPOUND MIL-S-40083 CLASS 31 TO FIND NO. 39.
7. ON FIND NUMBERS 2 AND 3 ;
    BROKEN PATHS INDICATE INSULATION SLEEVING.
    K INDICATES CATHODE SIDE OF DIODE.
    FT ( ) INDICATES FEED THRU
    PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
    C INDICATES COLLECTOR LEAD OF TRANSISTOR.
    B INDICATES BASE LEAD OF TRANSISTOR.
    E INDICATES EMITTER LEAD OF TRANSISTOR.
    C ( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR.
    B ( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR.
    E ( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR.
8. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE)PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
9. STAKE FIND NO.4 THRU FIND NO.31, FIND NO.33 AND FIND NO.34 PER ND 1002009, METHOD C
10. AR DENOTES AS REQUIRED.
11. APPLY ZINC CHROMATE PRIMER MIL-P-6808 (ASG) TO THREADS OF FIND NO.40.
12. MOUNTING TORQUE FOR FIND NO.29 10/15 INCH POUND.
13. SOLDER PER ND 1002071.
14. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY NOT EXCEED THE NORMAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. MUST MEET REQUIREMENTS OF ND 1002136.
17. PROCURE PER PS-1007027
18. BOND FIND NO.51, 52 AND 53 TO FIND NO.41 PER ND1002237.
19. UNLESS OTHERWISE SPECIFIED WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
20. BOND FIND NO. 45 TO FIND NO.1 PER ND1002004 TYPE I


Q3 REF
33
38
39
SEE NOTE 6 & NOTE 12
SEE NOTE 2
37
.02
.12

SECTION A-A


Q2 REF
Q1 REF
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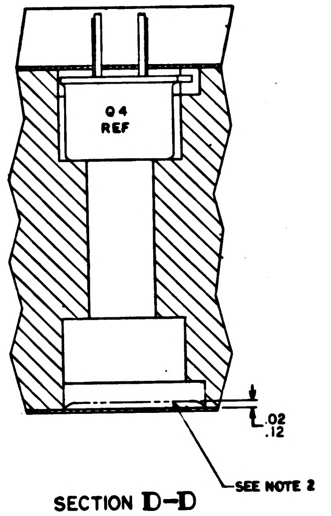
SECTION C-C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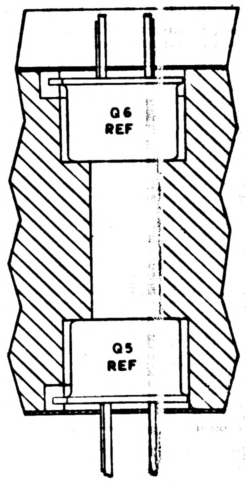
.12
SEE NOTE 2

SECTION D-D


Q6 REF
Q5 REF

SECTION E-E

SYM	DESCRIPTION	DATE	APPROVAL
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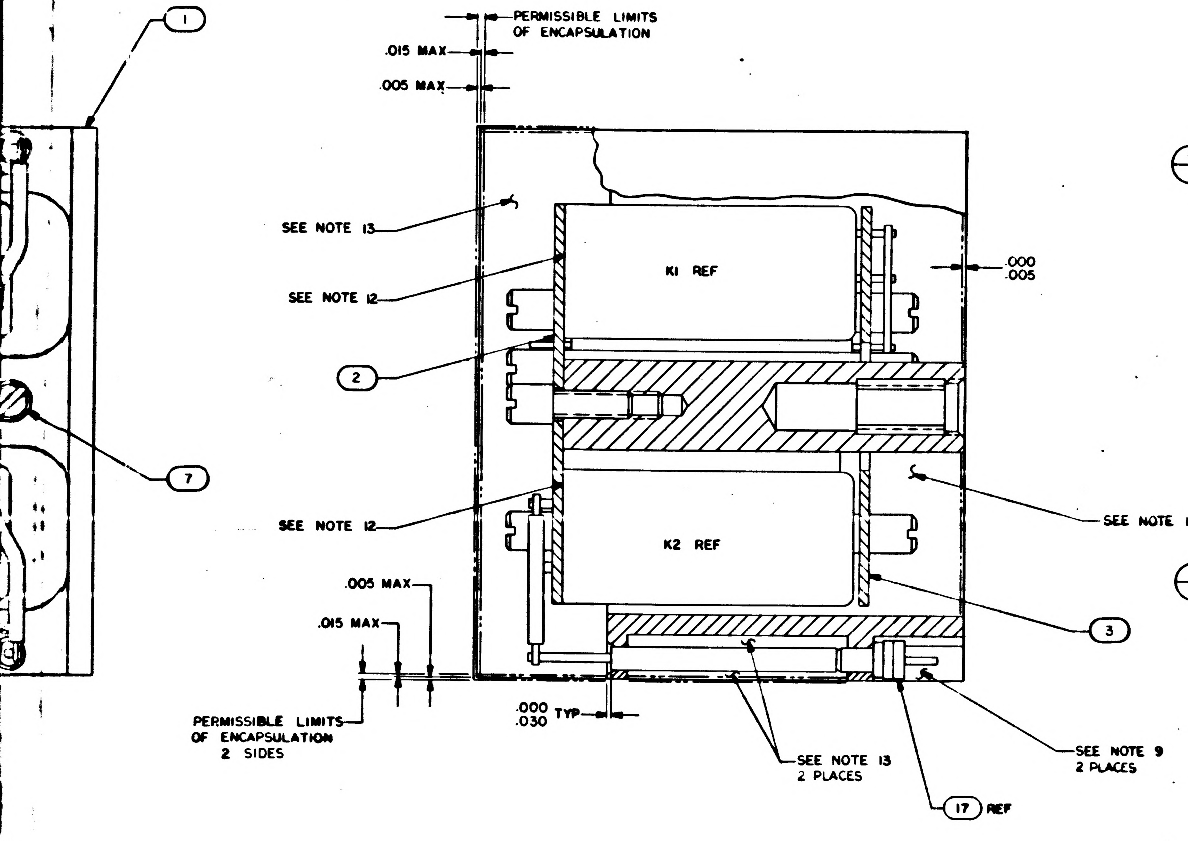
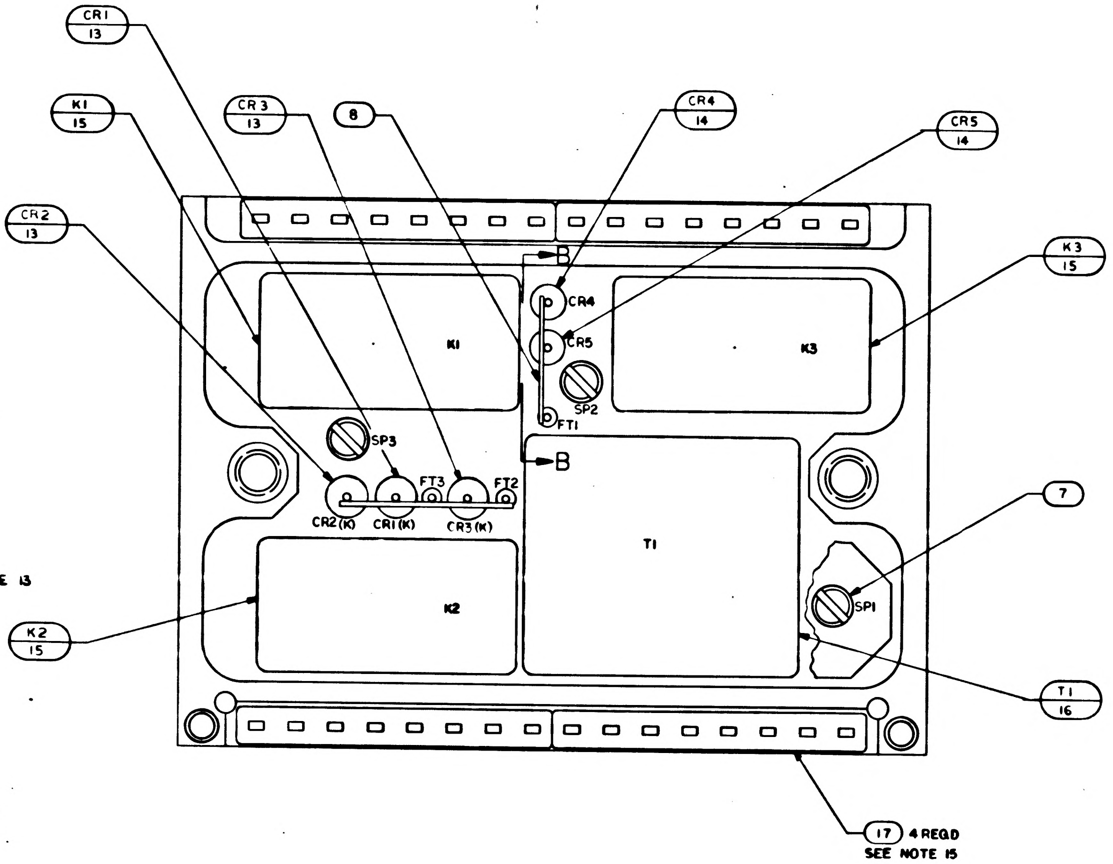
1007528



1
7
PERMISSIBLE LIMITS OF ENCAPSULATION
.015 MAX
.005 MAX
SEE NOTE 13
SEE NOTE 12
K1 REF
.000
.005
2
K2 REF
SEE NOTE 13
SEE NOTE 12
3
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION 2 SIDES
.000
.030
TYP
SEE NOTE 13 2 PLACES
SEE NOTE 9 2 PLACES
17 REF



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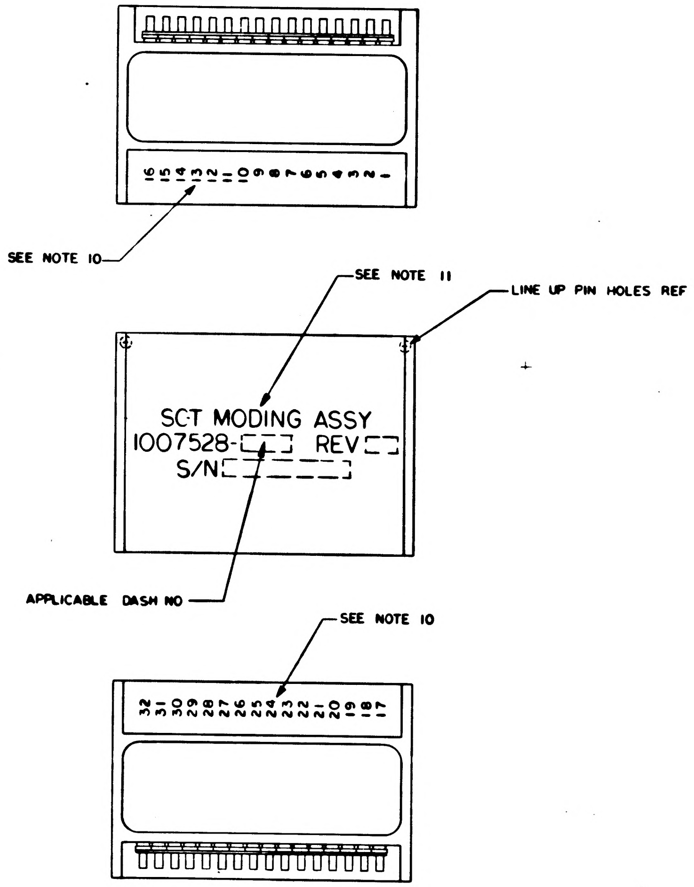
K1 15
CR3 13
8
CR4 14
CR5 14
CR2 13
K3 15
B
CR4
CR5
K1
K3
SP2
FT1
SP3
B
FT3
FT2
CR2(K)
CR1(K)
CR3(K)
T1
7
K2
SP1
K2 15
T1 16
17 4 REQD
SEE NOTE 15



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SEE NOTE 10
SEE NOTE 11
LINE UP PIN HOLES REF
SCT MODING ASSY
1007528-
REV
S/N
APPLICABLE DASH NO
SEE NOTE 10
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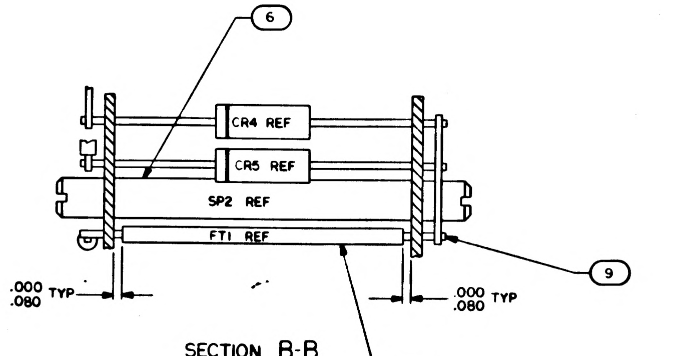
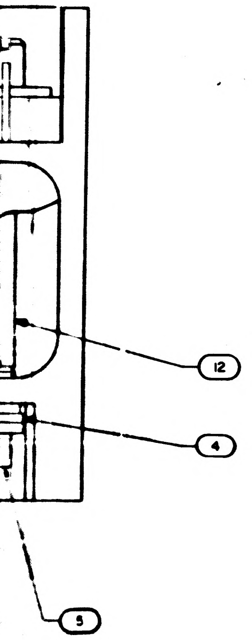
MARKING VIEWS
SCALE 2/1



6
CR4 REF
CR5 REF
SP2 REF
FT1 REF
9
.000
.080
TYP
.000
.080
TYP
11

SECTION B-B



QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
	1009504	SCHEMATIC	REF
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1	1010605	TRANSFORMER	16
3	1010353-4	RELAY	15
2	1010392-1	DIODE	14
3	1010362-003	DIODE	13
AR	1006776-20	INSULATION SLEEVING, ELEC.	12
AR	1006776-22	INSULATION SLEEVING, ELEC.	11
AR	1006776-21	INSULATION SLEEVING, ELEC.	10
AR	1006757-8	WIRE, ELEC. (.020 DIA)	9
AR	1006757-1	WIRE, ELEC. (.010 X .020)	8
8	1008161-2	SCREW, SPECIAL	7
3	1015135-015	SPACER	6
32	1006782-5	CONTACT, WRAPOST-MALE	5
32	1006775	INSULATOR, WRAPOST-MALE	4
1	1008518	WAFER BOARD, BOTTOM	3
1	1008516	WAFER BOARD, TOP	2
1	1007505	FRAME	1

011 LIST OF MATERIALS

NEXT ASSY	USED ON
1007578	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO. CONTRACT
DRAWN DATE
CHECKED 13 AUG 64
APPROVAL 7 OCT 64
APPROVAL 11-9-64
NASA APPROVAL 10-14-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCT MODING ASSY

CODE IDENT NO. —
SIZE J
NASA DRAWING NO. 1007528
SCALE 5/1
WT —
SHEET 1 OF 1

1007528 A

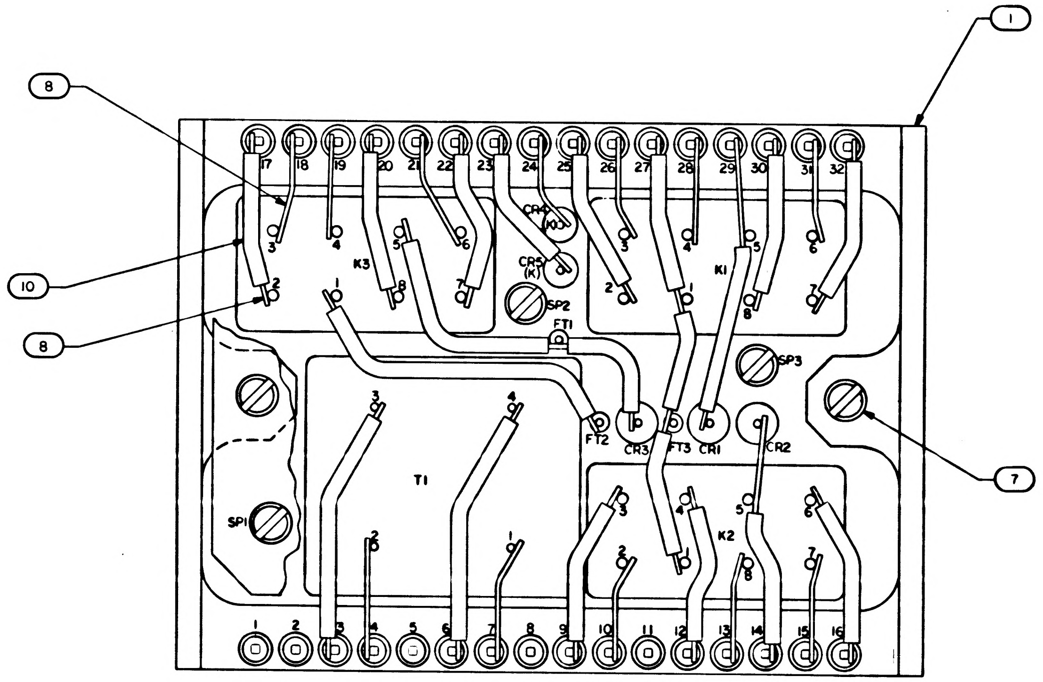
2H

1007528 REV LTR A SH 1

1007528

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1001258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8
10
8
7
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
K1
K2
K3
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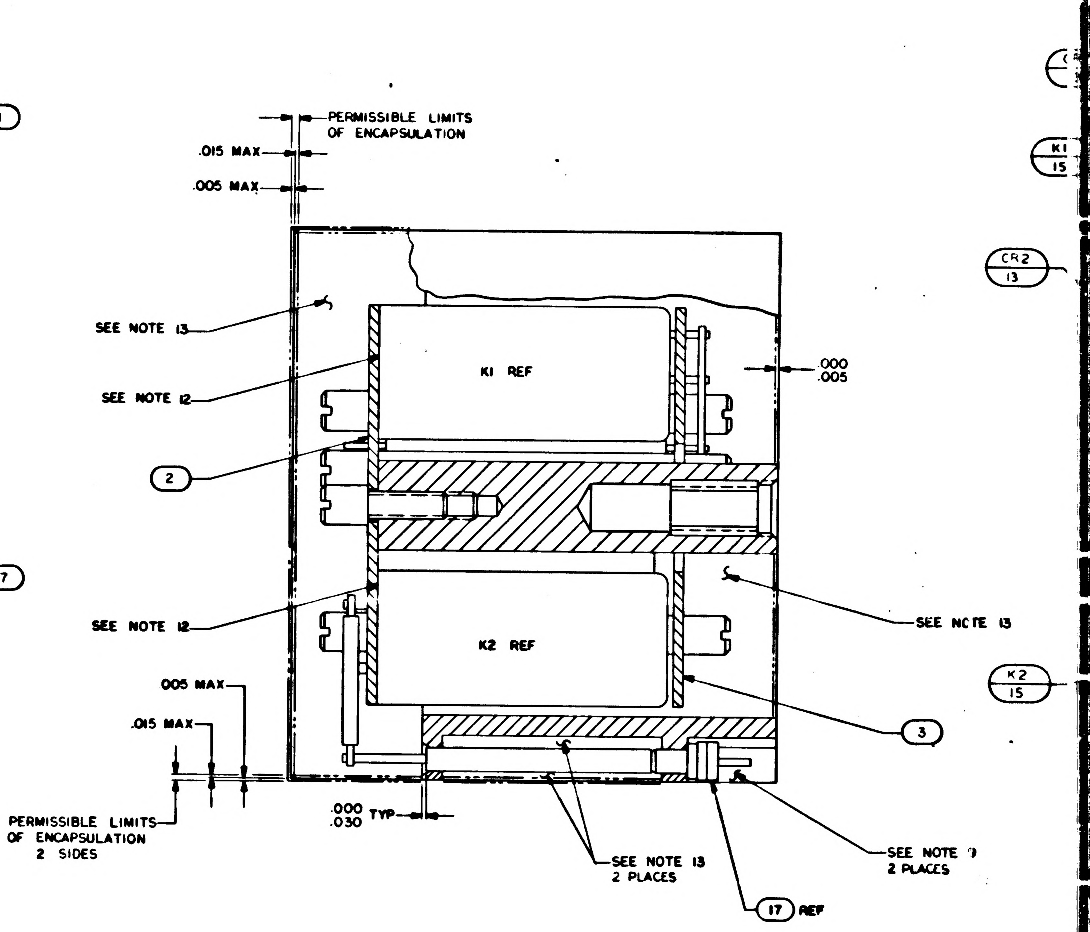
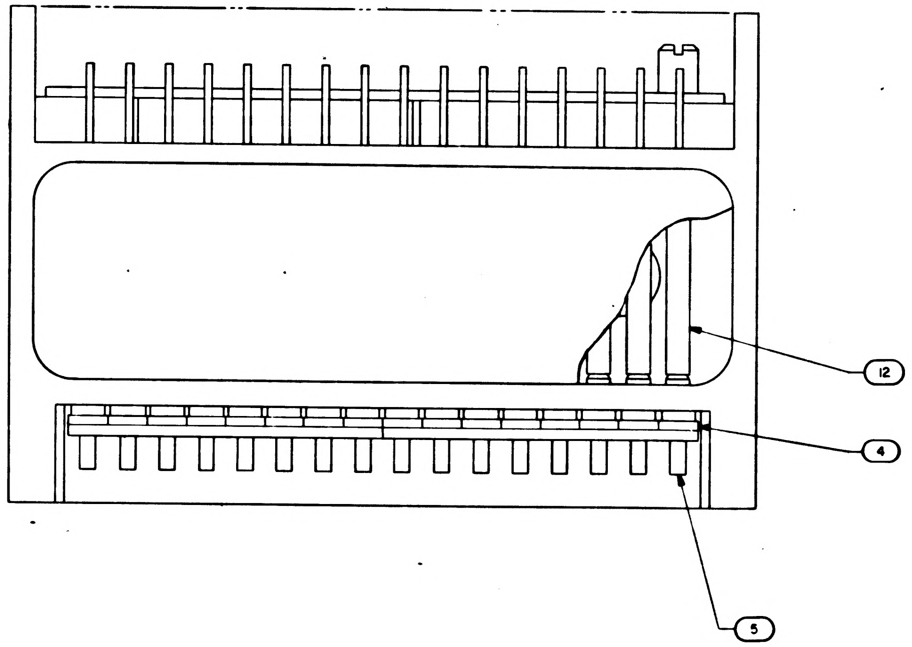
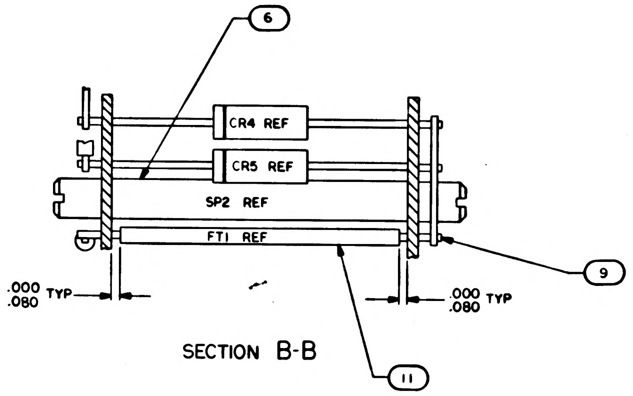
CR1
CR2
CR3
CR4 (K)
CR5 (K)
FT1
FT2
FT3
SP1
SP2
SP3


PERMISSIBLE LIMITS OF ENCAPSULATION
.015 MAX
.005 MAX
SEE NOTE 13
SEE NOTE 12
K1 REF
.000
.005
2
SEE NOTE 12
K2 REF
SEE NOTE 13
3
005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION 2 SIDES
.000
.030 TYP
SEE NOTE 13 2 PLACES
17 REF
SEE NOTE 9 2 PLACES
K1
15
CR2
13
K2
15




6
CR4 REF
CR5 REF
SP2 REF
FT1 REF
.000
.080 TYP
.000
.080 TYP
9
11

SECTION B-B

NOTES

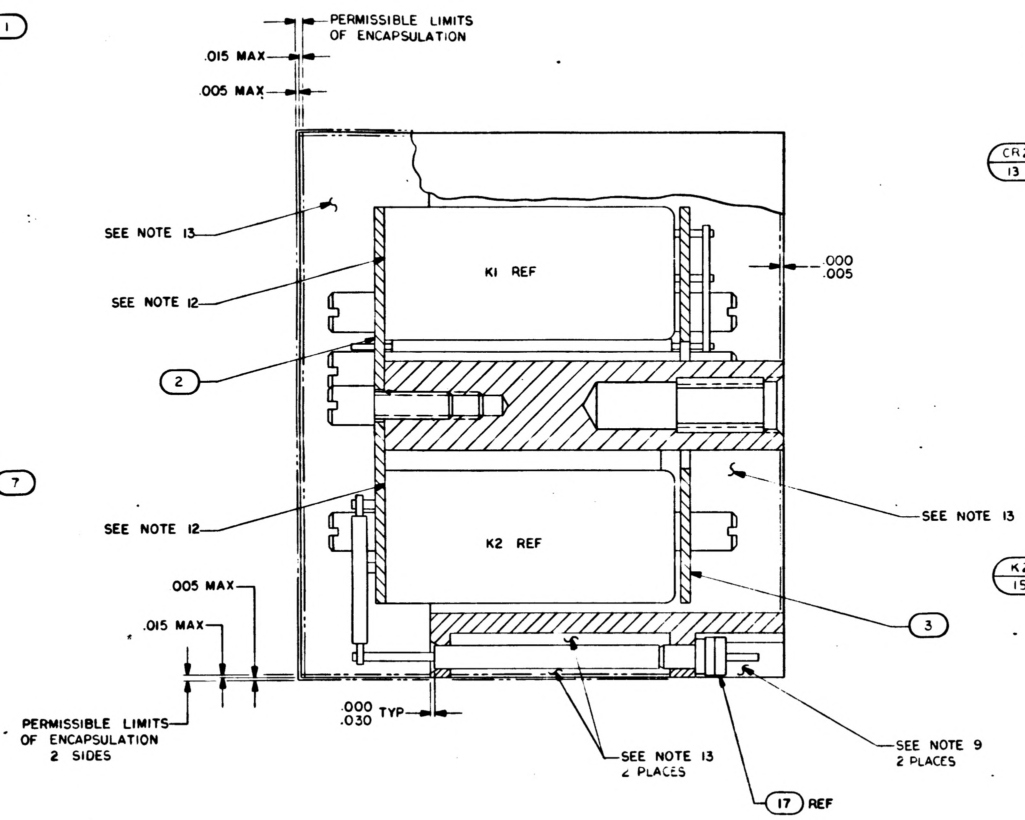
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. FT DENOTES FEEDTHRU
4. K INDICATES CATHODE SIDE OF DIODE
5. SP DENOTES SPACER
6. WELD PER ND 1002005
7. ASSEMBLE FIND NUMBERS 4 AND 5 PER ND 1002136

9. INDICATED AREAS TO BE FREE OF ENCAPSULATION
10. MARK .100/.060 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
11. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
12. BOND FIND NOS 15 AND 16 TO FIND NO. 2 PER ND 1002004 TYPE I
13. ENCAPSULATE MODULE PER ND 1002002, BLACK POLYURETHANE FOAM. REMOVE ALL FLASHING
14. WORKMANSHIP REQUIREMENT PER ND 1002069
15. BOND FIND NO. 17 TO FIND NO. 4 PER ND 1002237
16. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007528.

1007528	REV LTR A	SH 1

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16623	24 FEB 65	GAS V.M.
B	REVISED PER TDRR 19413	1 JUN 65	RJJ

1007528 B


PERMISSIBLE LIMITS OF ENCAPSULATION
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.005 MAX
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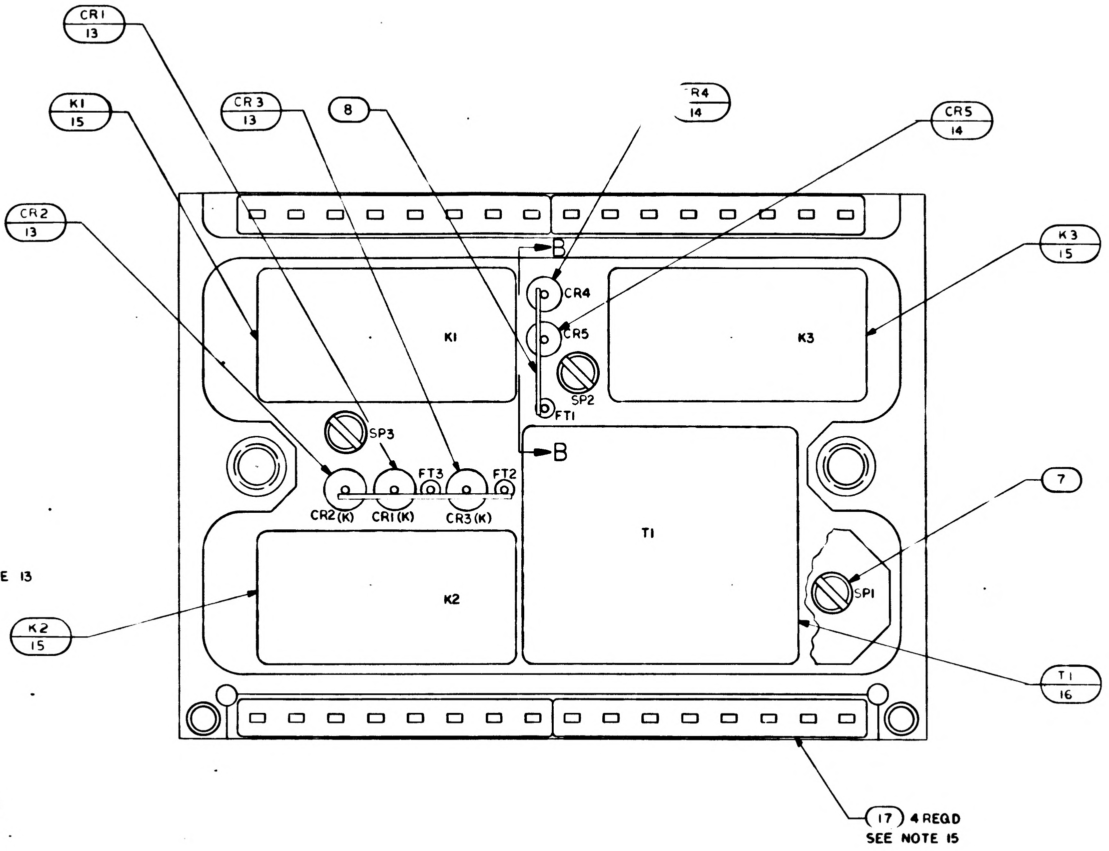
SEE NOTE 13
SEE NOTE 12
2
K1 REF
.000
.005
7
SEE NOTE 13
SEE NOTE 12
K2 REF
3
005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION 2 SIDES
.000
.030
TYP
SEE NOTE 13 2 PLACES
SEE NOTE 9 2 PLACES
17 REF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CR2 13
K3 15
B
CR4
CR5
SP2
FT1
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K3
SP3
FT3
FT2
CR2(K)
CR1(K)
CR3(K)
B
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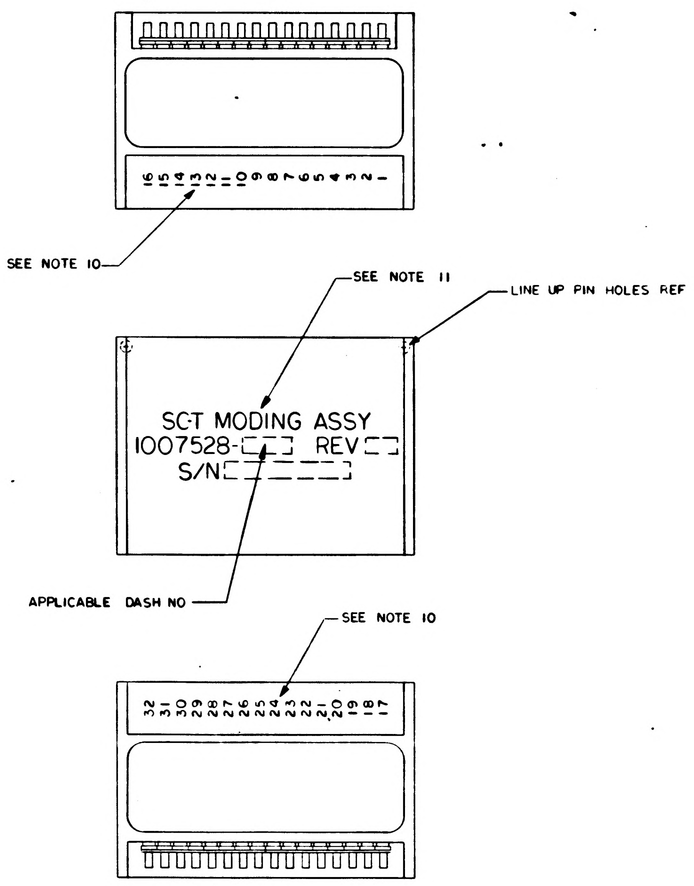
7
SP1
K2
K2 15
T1 16
17 4 REQD
SEE NOTE 15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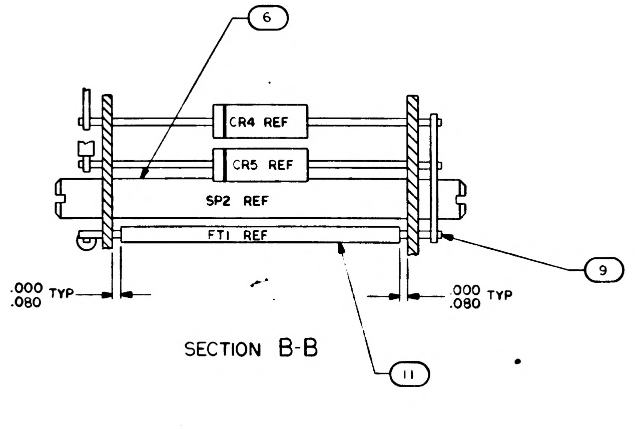
SEE NOTE 10
SEE NOTE 11
LINE UP PIN HOLES REF
SCT MODING ASSY
1007528-
REV
S/N
APPLICABLE DASH NO
SEE NOTE 10
32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17

MARKING VIEWS
SCALE 2/1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CR5 REF
SP2 REF
FT1 REF
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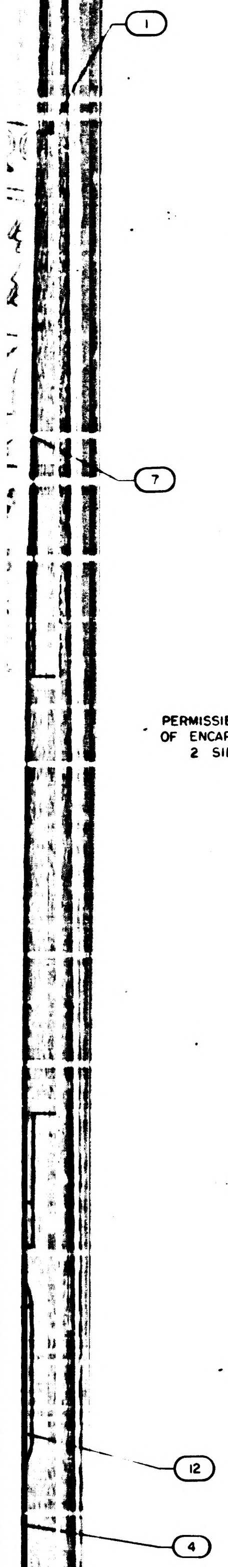
.000
.080
TYP
.000
.080
TYP
11

SECTION B-B



☒	1009504	SCHEMATIC	REF
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1	1010605	TRANSFORMER	16
3	1010353-4	RELAY	15
2	1010392-1	DIODE	14
3	1010362-003	DIODE	13
AR	1006776-20	INSULATION SLEEVING, ELEC.	12
AR	1006776-22	INSULATION SLEEVING, ELEC.	11
AR	1006776-21	INSULATION SLEEVING, ELEC.	10
AR	1006757-8	WIRE, ELEC (.020 DIA)	9
AR	1006757-1	WIRE, ELEC (.010 X .020)	8
8	1008161-2	SCREW, SPECIAL	7
3	1015135-015	SPACER	6
32	1006782-5	CONTACT, WRAPOST-MALE	5
32	1006775	INSULATOR, WRAPOST-MALE	4
1	1008518	WAFER BOARD, BOTTOM	3
1	1008516	WAFER BOARD, TOP	2
1	1007505	FRAME	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
011	LIST OF MATERIALS		

1007528 B

NEXT ASSY	USED ON
1007528	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT
DRAWN DATE
CHECKED 13 NOV 64
APPROVAL 7 OCT 64
APPROVAL 12-8-64
NASA APPROVAL 10-14-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCT MODING ASSY

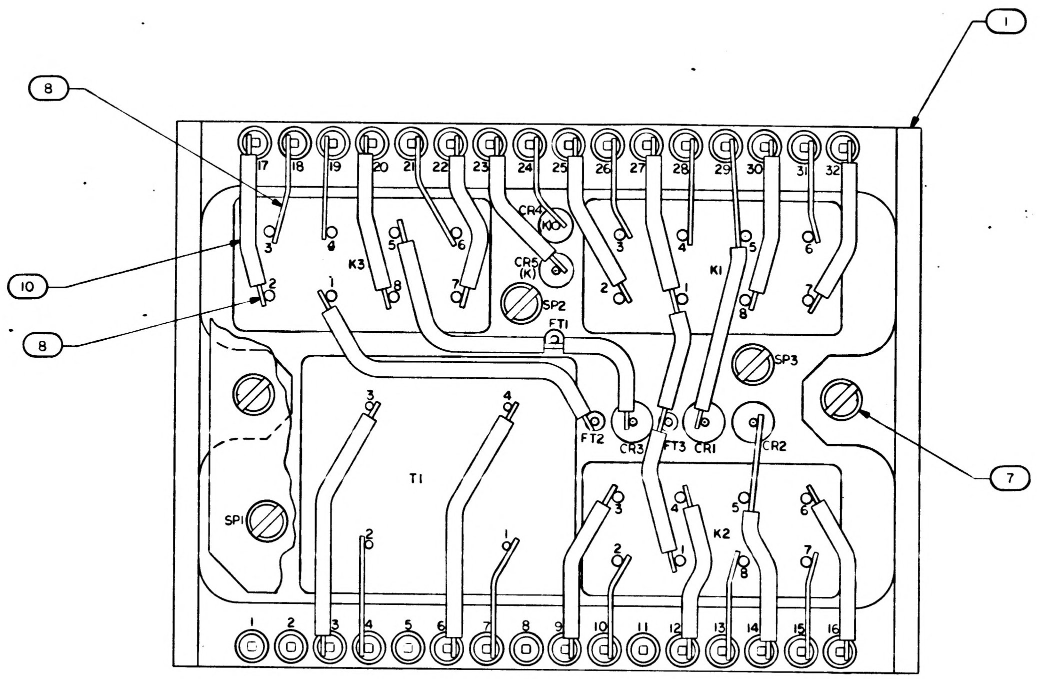
CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007528
SCALE 5/1
WT
SHEET 1 OF 1

2#

1007528 REV LTR B SH 1

2/1007528

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO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K3
K1
K2
T1
CR4 (K)
CR5 (K)
SP2
FT1
SP3
FT2
CR3
FT3
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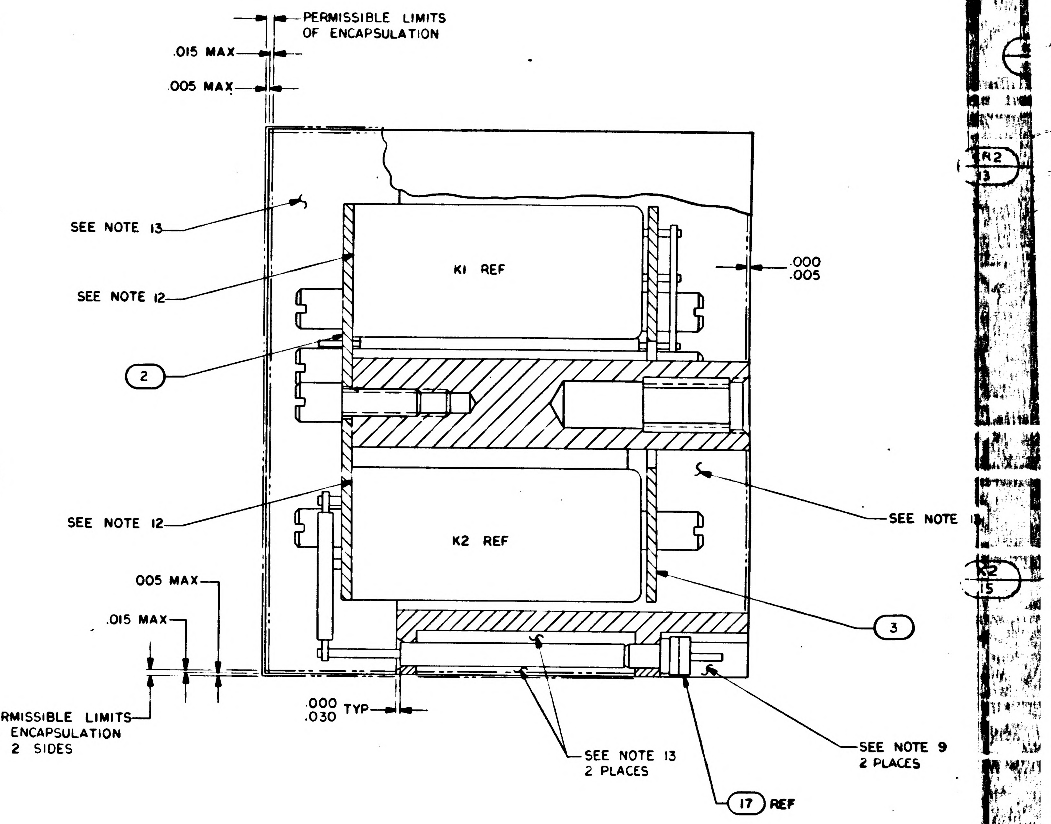
PERMISSIBLE LIMITS OF ENCAPSULATION
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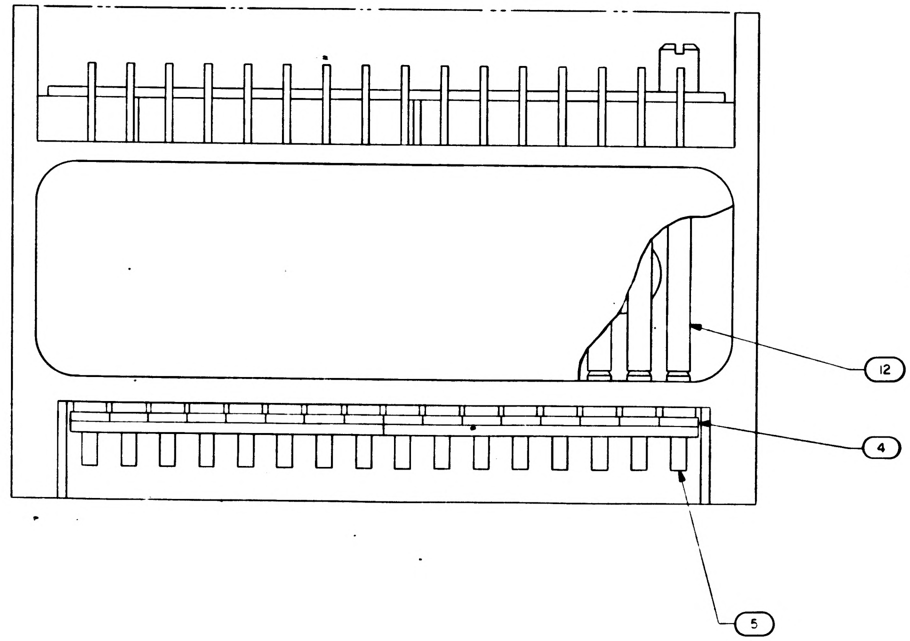
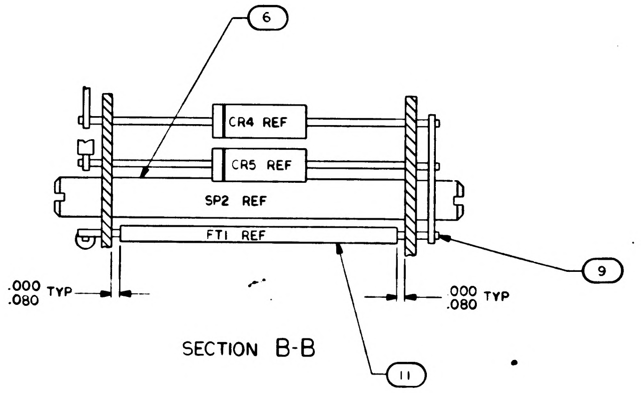
.005 MAX
SEE NOTE 13
SEE NOTE 12
K1 REF
.000
.005
2
SEE NOTE 12
K2 REF
SEE NOTE 13
3
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION 2 SIDES
.000 .030 TYP
SEE NOTE 13 2 PLACES
SEE NOTE 9 2 PLACES
17 REF




6
CR4 REF
CR5 REF
SP2 REF
FT1 REF
9
.000 .080 TYP
.000 .080 TYP
11

SECTION B-B

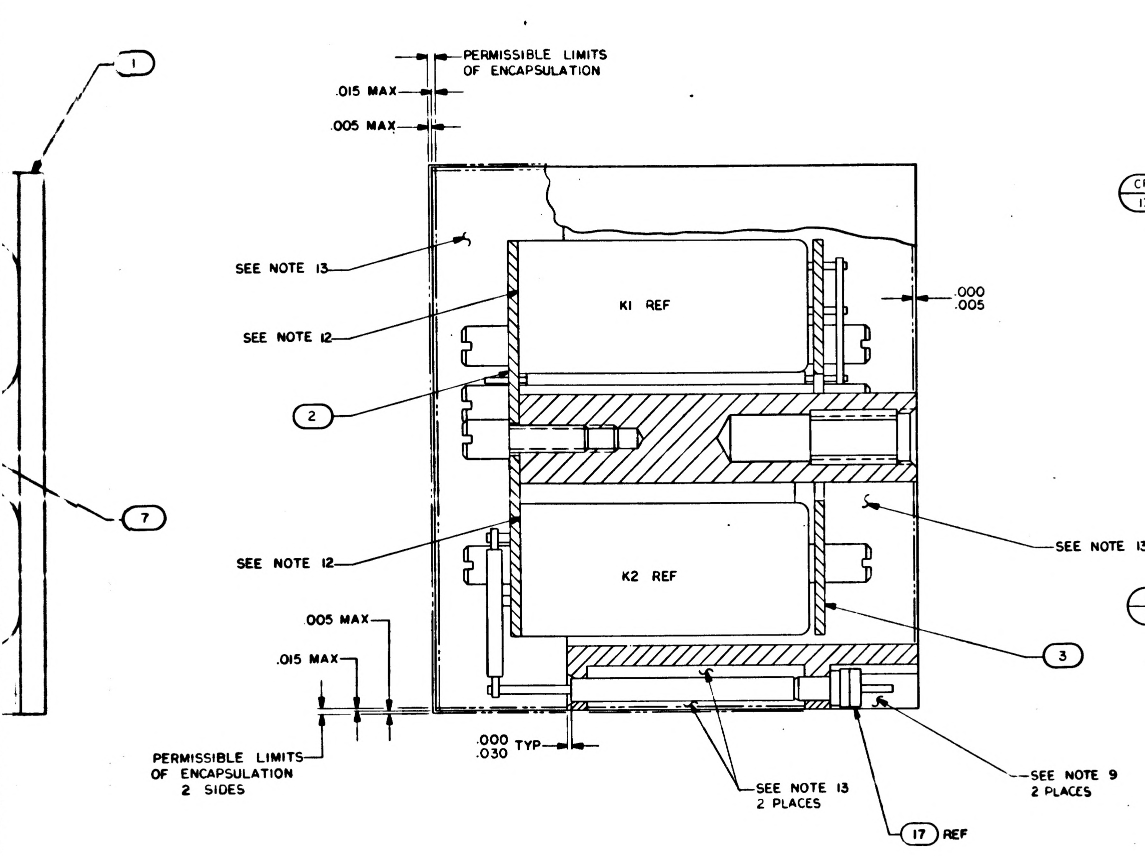
NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. FT DENOTES FEEDTHRU
4. K INDICATES CATHODE SIDE OF DIODE
5. SP DENOTES SPACER
6. WELD PER ND 1002005
7. ASSEMBLE FIND NUMBERS 4 AND 5 PER ND 1002136

9. INDICATED AREAS TO BE FREE OF ENCAPSULATION
10. MARK .100/.060 HIGH WHITE CHARACTERS PER ND 1002019 CENTRALIZE AS SHOWN
11. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
12. BOND FIND NOS 15 AND 16 TO FIND NO. 2 PER ND 1002004 TYPE I
13. ENCAPSULATE MODULE PER ND 1002002 BLACK POLYURETHANE FOAM. REMOVE ALL FLASHING
14. WORKMANSHIP REQUIREMENT PER ND 1002069
15. BOND FIND NO. 17 TO FIND NO. 4 PER ND 1002237
16. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007528
17. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND 1002187 TYPE II.

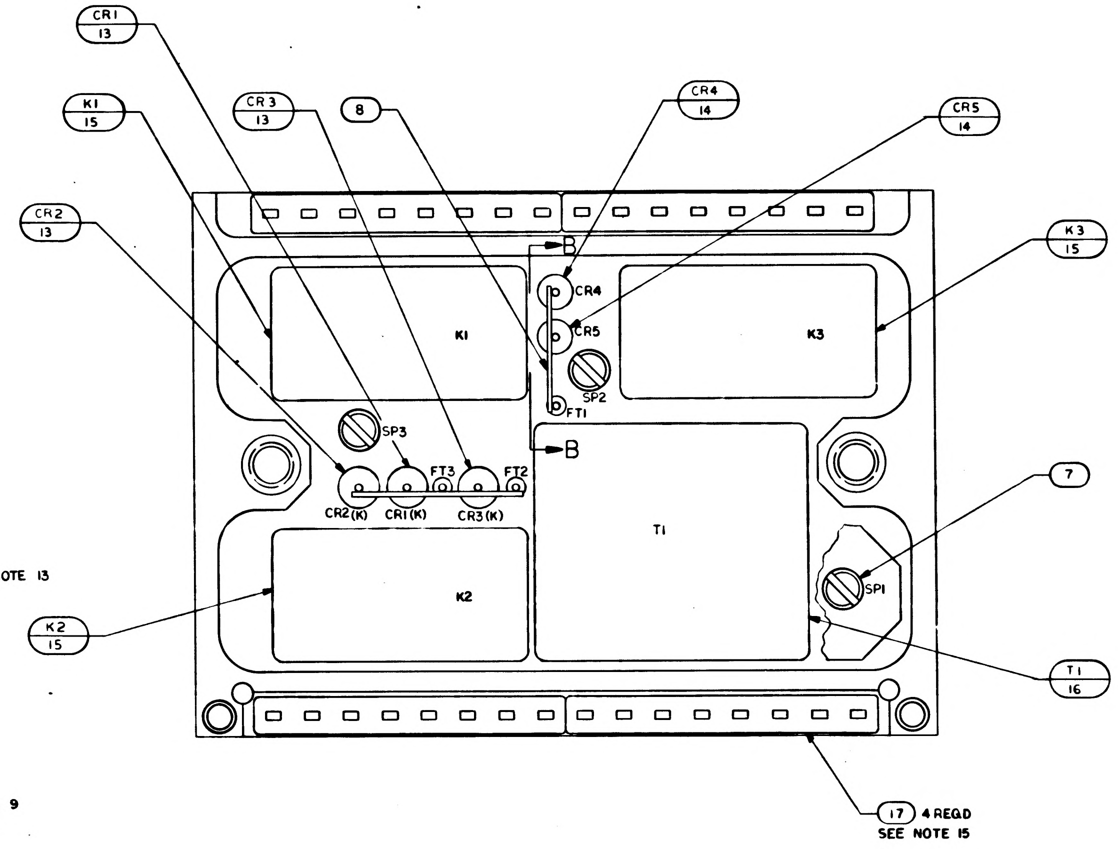
1007528	REV LTR	SH
	B	1

1007528	C

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16623	26 FEB -65	JAS
B	REVISED PER TDRR 19413	JUN 65	RJJ
C	REVISED PER TDRR 19488	10 JUN 65	EHW



1
.015 MAX
.005 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION
SEE NOTE 13
SEE NOTE 12
K1 REF
.000 .005
2
7
SEE NOTE 13
SEE NOTE 12
K2 REF
3
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION 2 SIDES
.000 .030 TYP
SEE NOTE 13 2 PLACES
SEE NOTE 9 2 PLACES
17 REF



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CR2 13
K3 15
B
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CR5
K1
K3
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FT1
SP3
B
FT3
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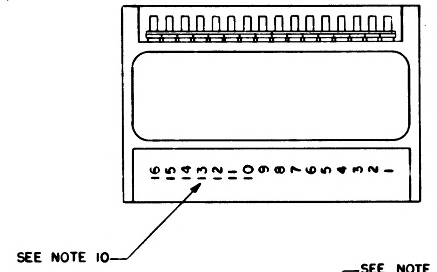

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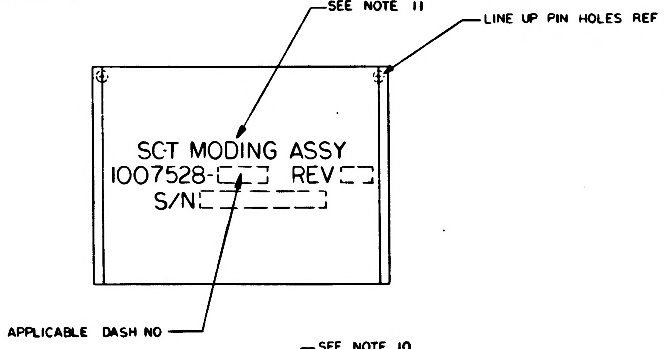
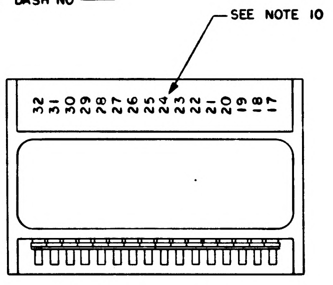
SEE NOTE 10



SEE NOTE 11
LINE UP PIN HOLES REF
SCT MODING ASSY
1007528-
REV
S/N
APPLICABLE DASH NO



SEE NOTE 10
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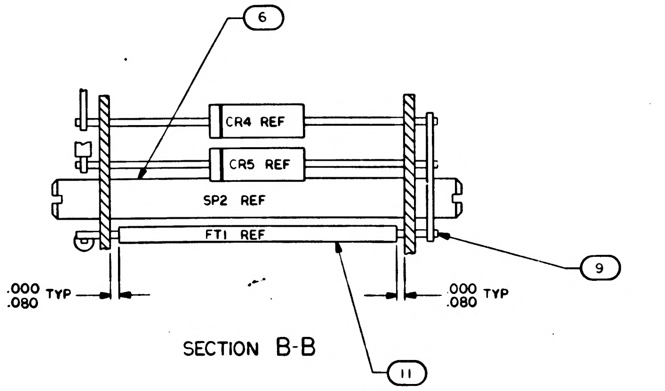
MARKING VIEWS
SCALE 2/1



6
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CR5 REF
SP2 REF
FT1 REF
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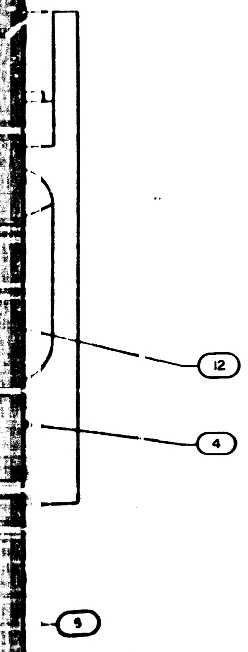
.000 .080 TYP
.000 .080 TYP
11

SECTION B-B



☒	1009504	SCHEMATIC	REF
4	1008540-8	GASKET, CONNECTOR MINIATURE	17
1	1010605	TRANSFORMER	16
3	1010353-4	RELAY	15
2	1010392-1	DIODE	14
3	1010362-003	DIODE	13
AR	1006776-20	INSULATION SLEEVING, ELEC.	12
AR	1006776-22	INSULATION SLEEVING, ELEC.	11
AR	1006776-21	INSULATION SLEEVING, ELEC.	10
AR	1006757-8	WIRE, ELEC. (.020 DIA)	9
AR	1006757-1	WIRE, ELEC. (.010 X .020)	8
8	1008161-2	SCREW, SPECIAL	7
3	1015135-015	SPACER	6
32	1006782-5	CONTACT, WRAPOST-MALE	5
32	1006775	INSULATOR, WRAPOST-MALE	4
1	1008518	WAFER BOARD, BOTTOM	3
1	1008516	WAFER BOARD, TOP	2
1	1007505	FRAME	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
011	LIST OF MATERIALS		

1007578	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN DATE
CHECKED 13AUG64
APPROVAL 7OCT64
APPROVAL 10-8-64
NASA APPROVAL 10-14-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCT MODING ASSY

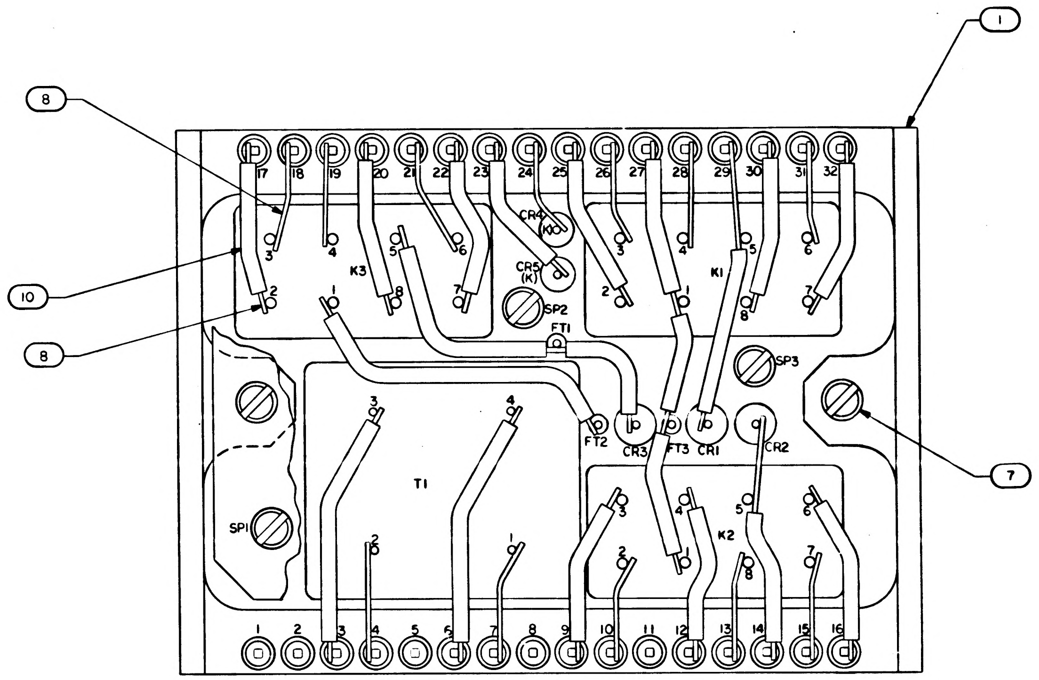
CODE IDENT NO	SIZE	NASA DRAWING NO
80230	J	1007528
SCALE 5/1	WT	SHEET 1 OF 1

1007528	REV LTR	SH
	C	1

2/1007528

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

1007528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K3
CR4 (K)
CR5 (K)
SP2
FT1
K1
SP3
FT2
CR3
FT3
CR1
CR2
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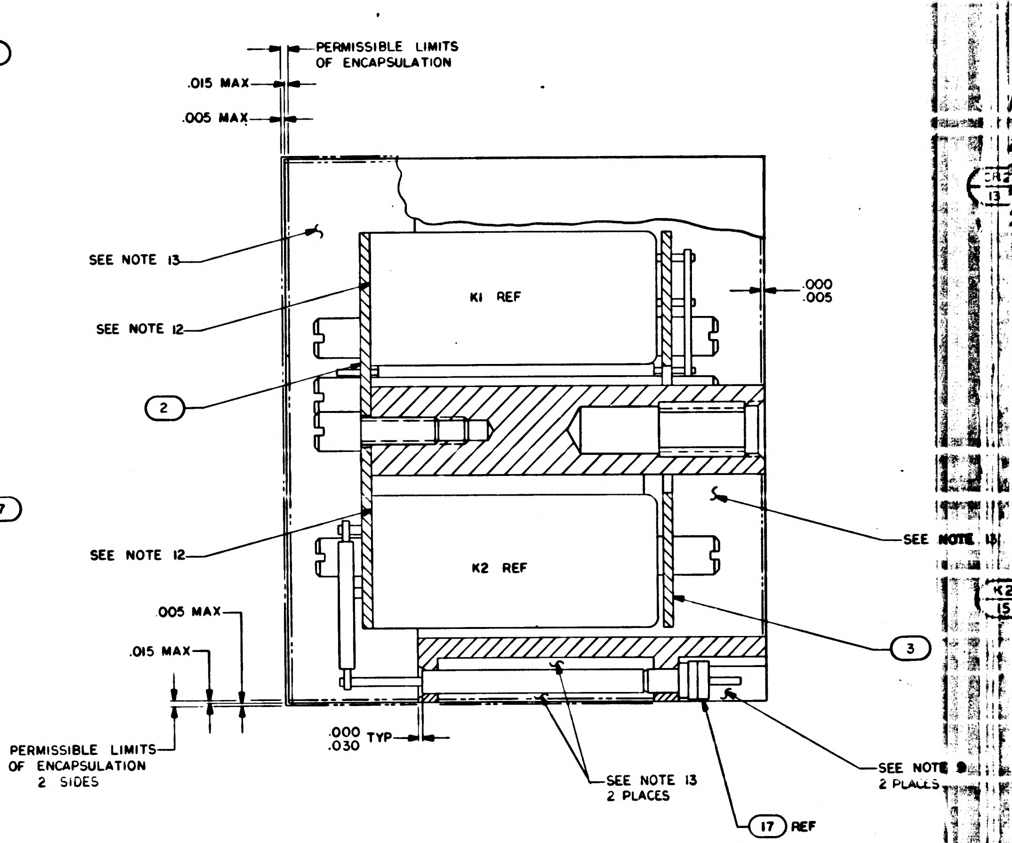
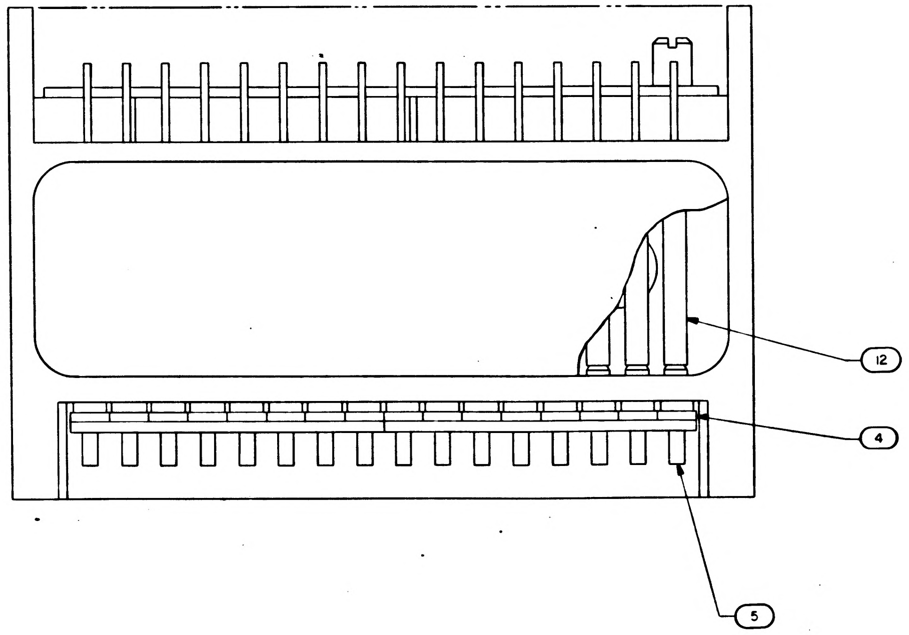
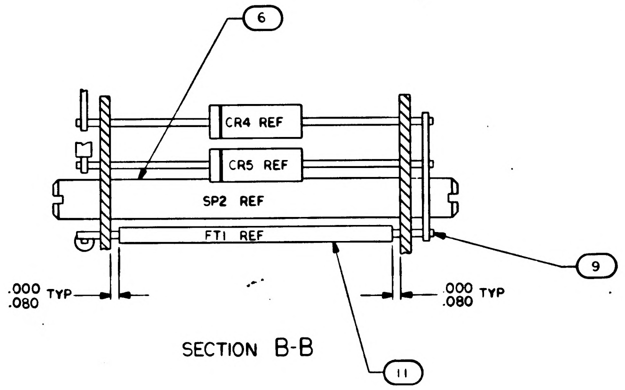

PERMISSIBLE LIMITS OF ENCAPSULATION
.015 MAX
.005 MAX
SEE NOTE 13
SEE NOTE 12
K1 REF
.000
.005
2
SEE NOTE 13
SEE NOTE 12
K2 REF
3
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION 2 SIDES
.000
.030 TYP
SEE NOTE 13 2 PLACES
SEE NOTE 9 2 PLACES
17 REF




6
CR4 REF
CR5 REF
SP2 REF
FT1 REF
9
.000
.080 TYP
.000
.080 TYP
11

SECTION B-B

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. FT DENOTES FEEDTHRU
4. K INDICATES CATHODE SIDE OF DIODE
5. SP DENOTES SPACER
6 WELD PER ND 1002005
7. ASSEMBLE FIND NUMBERS 4 AND 5 PER ND 1002136

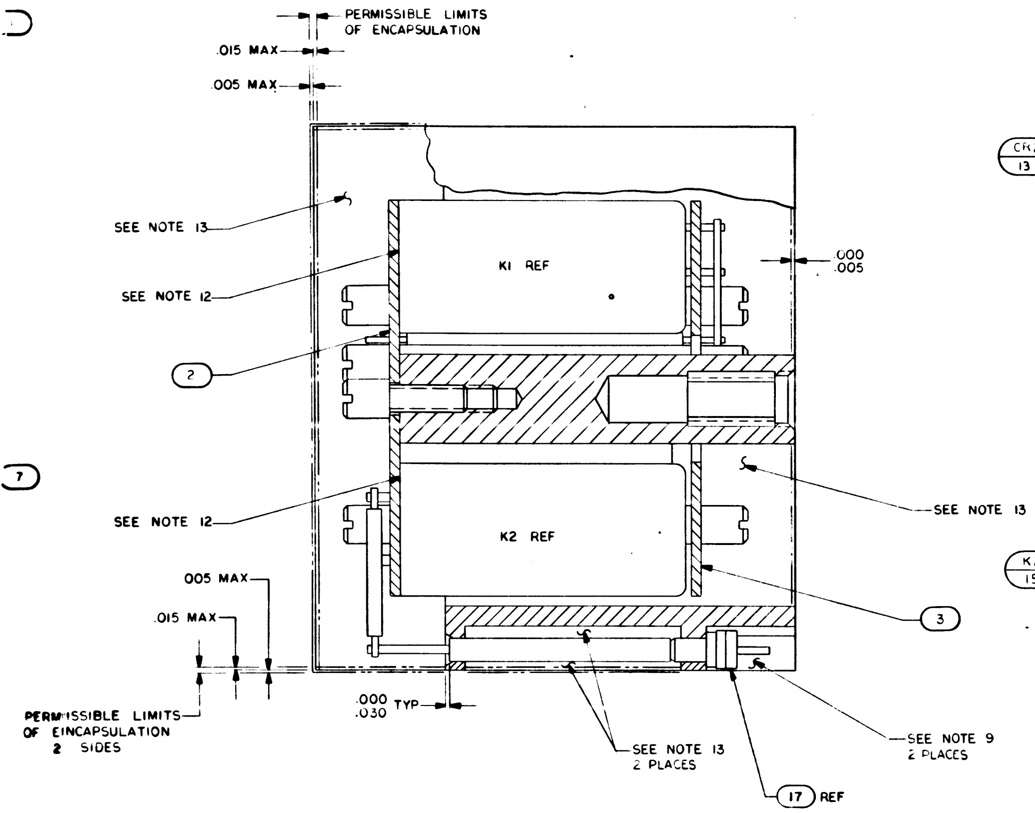
9. INDICATED AREAS TO BE FREE OF ENCAPSULATION
10. MARK .100/.060 HIGH WHITE CHARACTERS PER ND 1002019 CENTRALIZE AS SHOWN
11. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
12. BOND FIND NOS. 15 AND 16 TO FIND NO. 2 PER ND 1002004 TYPE I
13. ENCAPSULATE MODULE PER ND 1002002, BLACK POLYURETHANE FOAM. REMOVE ALL FLASHING
14. WORKMANSHIP REQUIREMENT PER ND 1002069
15. BOND FIND NO. 17 TO FIND NO. 4 PER ND 1002237
16. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007528
17. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

18. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

1007528	REV LTR	SH
	C	1

1/1007528

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16623	26 FEB 65	DAS
B	REVISED PER TDRR 1943	JUN 65	
C	REVISED PER TDRR 13488	10 JUN 65	EHW
D	REVISED PER TDRR 20143	19 JUN 65	Rh



PERMISSIBLE LIMITS OF ENCAPSULATION
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.005 MAX
SEE NOTE 13
SEE NOTE 12
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SEE NOTE 12
K2 REF
SEE NOTE 13
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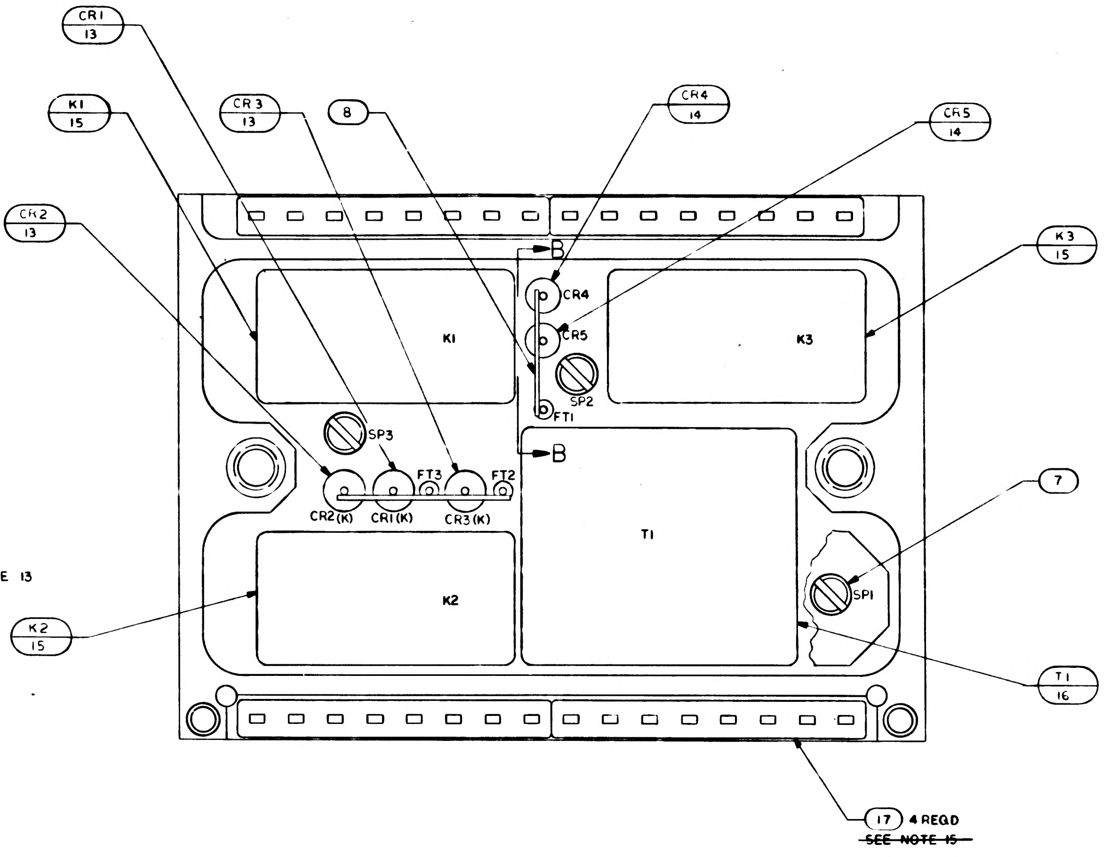
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION 2 SIDES
.000 .030 TYP
SEE NOTE 13 2 PLACES
17 REF
SEE NOTE 9 2 PLACES



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SP3
FT3
FT2
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CR3(K)
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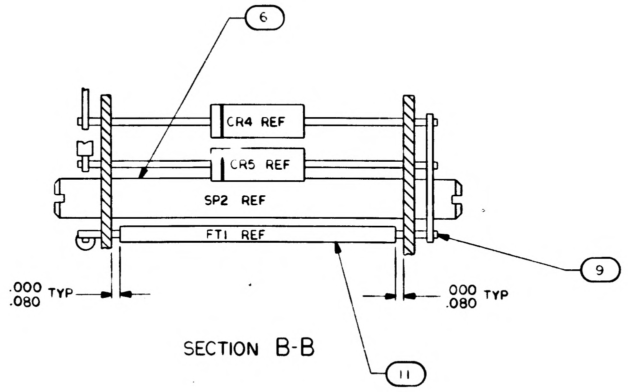
K2 15
T1 16
17 4 REQD
~~SEE NOTE 15~~



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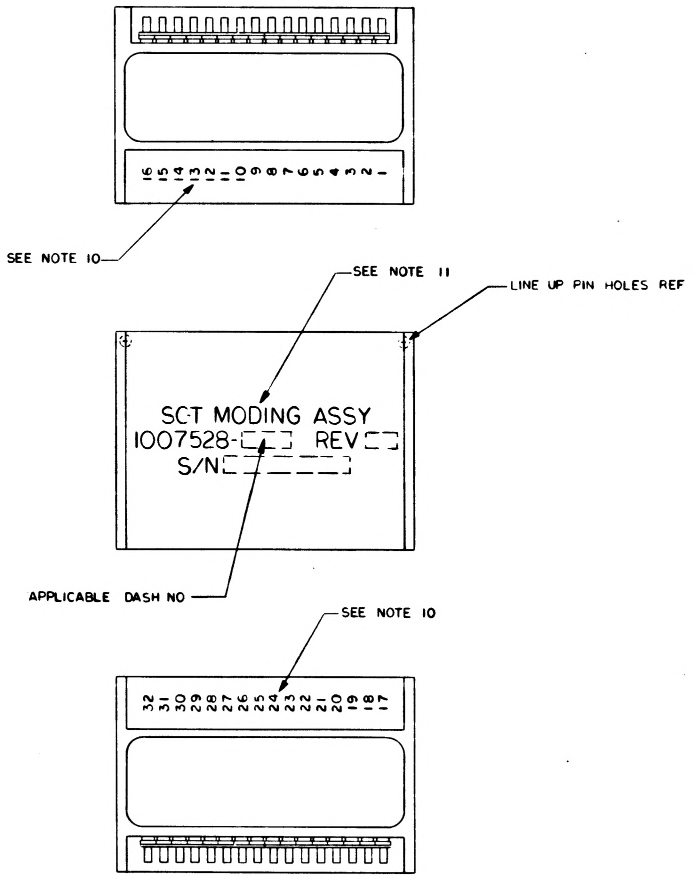
CR5 REF
SP2 REF
FT1 REF
9
.000 .080 TYP
.000 .080 TYP
11

SECTION B-B



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SEE NOTE 10
SEE NOTE 11
LINE UP PIN HOLES REF
SCT MODING ASSY
1007528-☐ REV☐
S/N☐
APPLICABLE DASH NO
SEE NOTE 10
32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17

MARKING VIEWS
SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
☒	1009504	SCHEMATIC	REF
4	1008540-8	GASKET, CONNECTOR MINIATURE	17
1	1010605	TRANSFORMER	16
3	1010353-4	RELAY	15
2	1010392-1	DIODE	14
3	1010362-003	DIODE	13
AR	1006776-20	INSULATION SLEEVING, ELEC.	12
AR	1006776-22	INSULATION SLEEVING, ELEC.	11
AR	1006776-21	INSULATION SLEEVING, ELEC.	10
AR	1006757-8	WIRE, ELEC (.020 DIA)	9
AR	1006757-1	WIRE, ELEC (.010 X .020)	8
8	1008161-2	SCREW SPECIAL	7
3	1015135-015	SPACER	6
32	1006782-5	CONTACT, WRAPOST-MALE	5
32	1006775	INSULATOR, WRAPOST-MALE	4
1	1008518	WAFER BOARD, BOTTOM	3
1	1008516	WAFER BOARD, TOP	2
1	1007505	FRAME	1
011	LIST OF MATERIALS		

NEXT ASSY	USED ON
1007578	
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN DATE
CHECKED 13 Nov 64
APPROVAL 7 Oct 64
APPROVAL 10-8-64
NASA APPROVAL 10-14-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

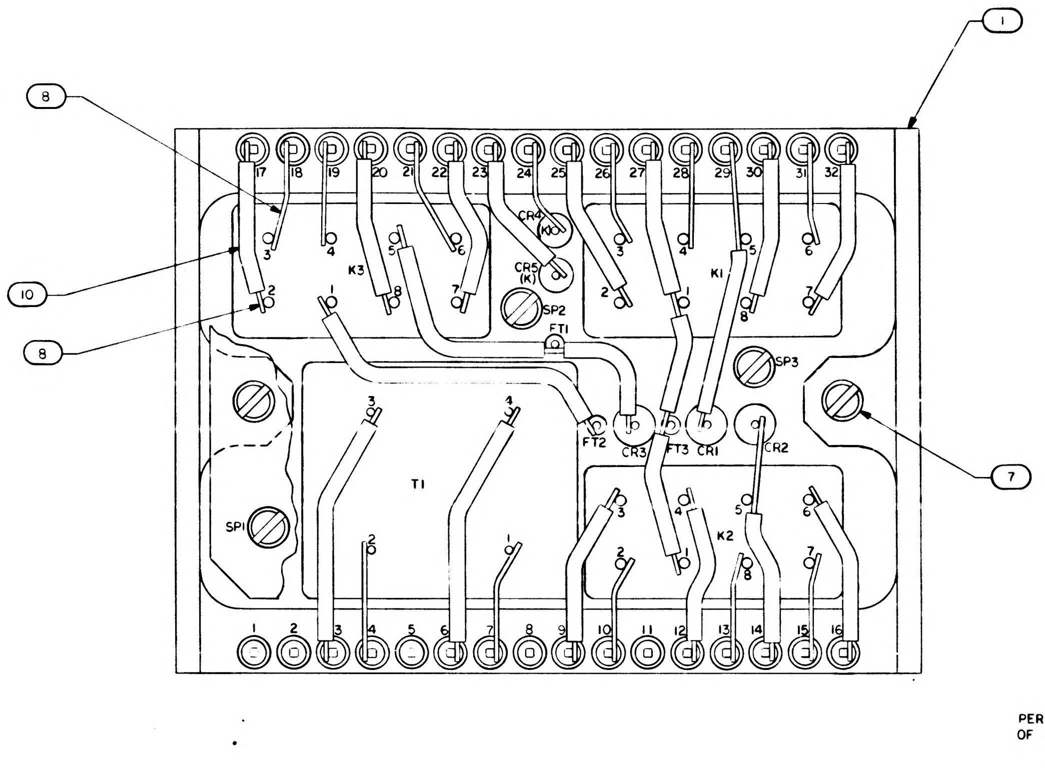
SCT MODING ASSY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007528
SCALE 5/1
WT
SHEET 1 OF 1

1007528 D

1007528 REV LTR D SH 1

NOTICE WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO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CR5
(K)
SP2
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SP3
FT2
CR3
FT3
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CR2
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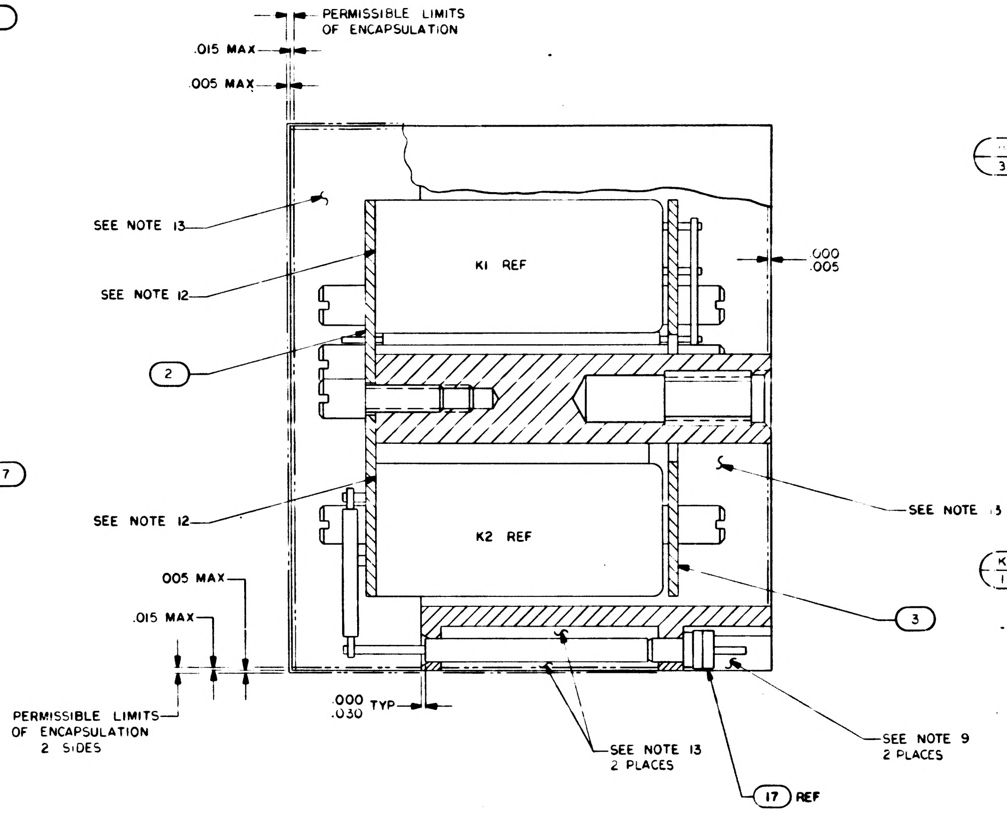
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.005 MAX
SEE NOTE 13
SEE NOTE 12
K1 REF
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.005
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SEE NOTE 13
SEE NOTE 12
K2 REF
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PERMISSIBLE LIMITS OF ENCAPSULATION 2 SIDES
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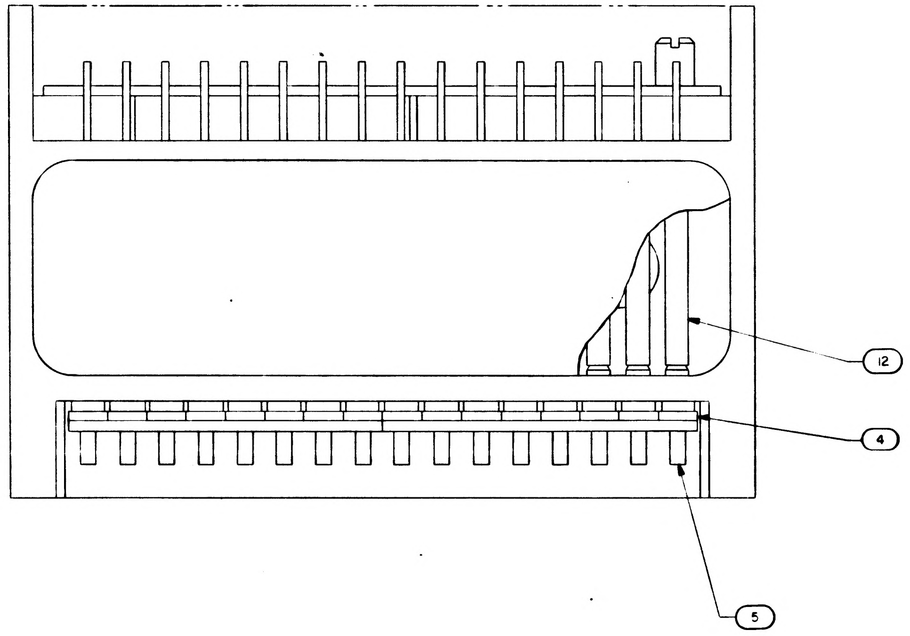
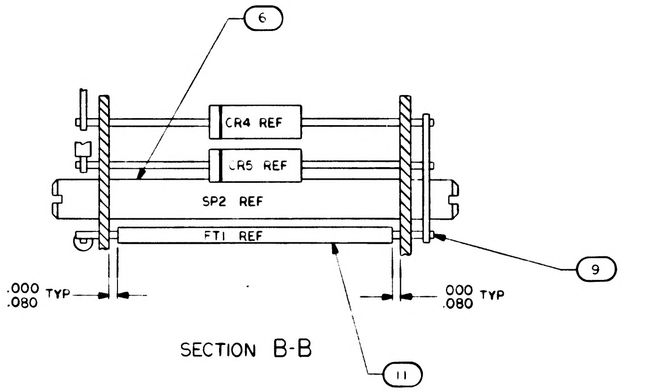
.030 TYP
SEE NOTE 13 2 PLACES
17 REF
SEE NOTE 9 2 PLACES

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.000
.080 TYP
.000
.080 TYP
11

SECTION B-B

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. FT DENOTES FEEDTHRU
4. K INDICATES CATHODE SIDE OF DIODE
5. SP DENOTES SPACER
6. WELD PER ND 1002005
7. ASSEMBLE FIND NUMBERS 4 AND 5 PER ND 1002136

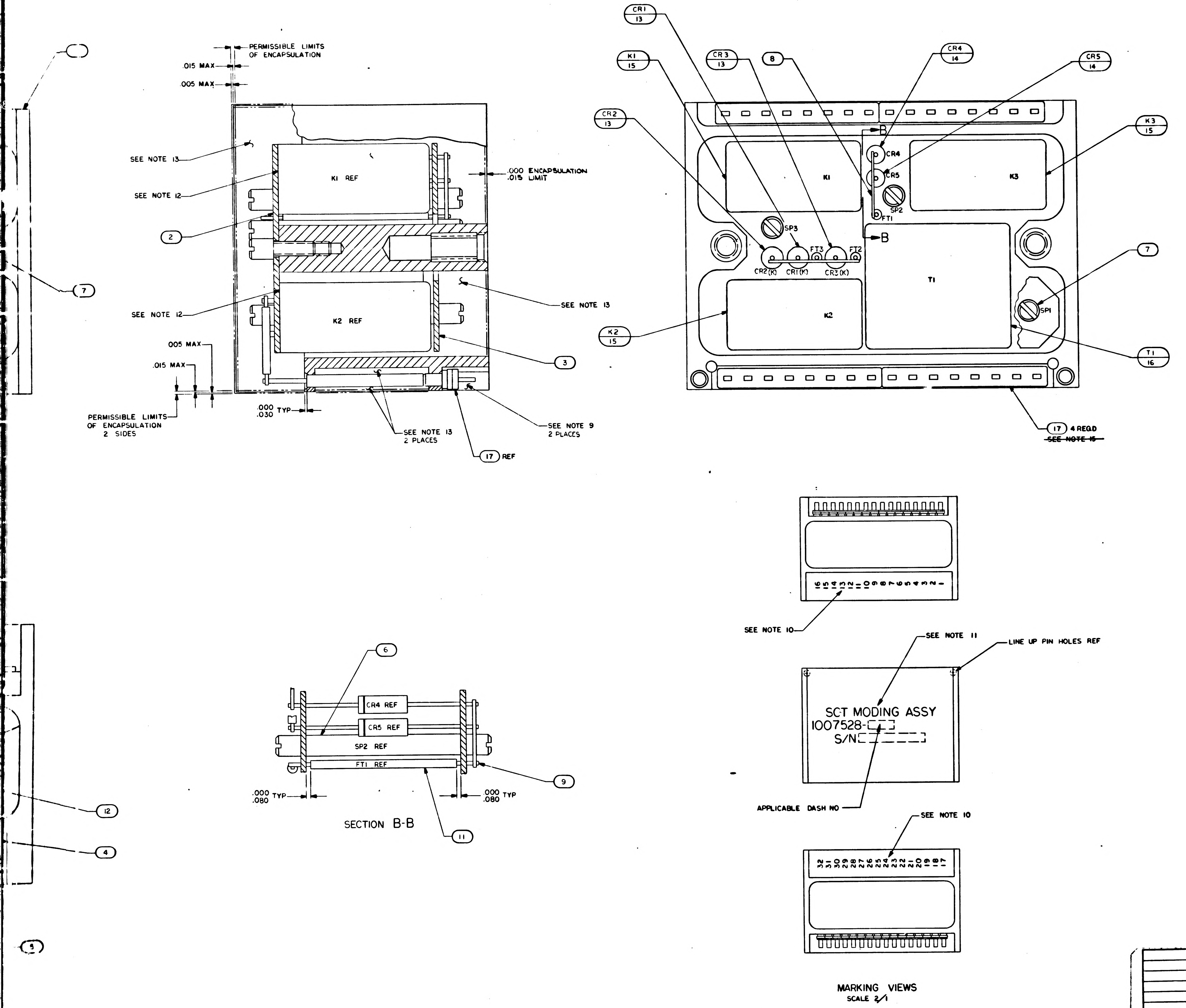
9. INDICATED AREAS TO BE FREE OF ENCAPSULATION
10. MARK .100/.060 HIGH WHITE CHARACTERS PER ND 1002019 CENTRALIZE AS SHOWN
11. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
12. BOND FIND NOS 15 AND 16 TO FIND NO. 2 PER ND 1002004 TYPE I
13. ENCAPSULATE MODULE PER ND 1002002. BLACK POLYURETHANE FOAM REMOVE ALL FLASHING
14. WORKMANSHIP REQUIREMENT PER ND 1002069
15. ~~BOND FIND NO. 17 TO FIND NO. 4 PER ND 1002237~~
16. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007528
17. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

18. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER D 0729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

	REV LTR	SH
1007528	D	1

1007528 E

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16623	26 FEB 65	DAS
B	REVISED PER TDRR 19413	1 JUN 65	2J
C	REVISED PER TDRR 19488	10 JUN 65	EHM
D	REVISED PER TDRR 20143	19 JUN 65	Rh
E	REVISED PER TDRR 22935	65	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SEE NOTE 13
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SEE NOTE 13
SEE NOTE 12
K2 REF
3
005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION 2 SIDES
.000 .030 TYP
SEE NOTE 13 2 PLACES
SEE NOTE 9 2 PLACES
17 REF
CR1 13
K1 15
CR3 13
8
CR4 14
CR5 14
CR2 13
K3 15
B
CR4
CR5
SP2
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K3
SP3
FT3
FT2
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CR1(K)
CR3(K)
T1
7
SP1
K2
K2 15
T1 16
17 4 REQD
~~SEE NOTE 15~~
16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
SEE NOTE 10
SEE NOTE 11
LINE UP PIN HOLES REF
SCT MODING ASSY
1007528-
S/N
APPLICABLE DASH NO
SEE NOTE 10
32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17
6
CR4 REF
CR5 REF
SP2 REF
FT1 REF
9
.000 .080 TYP
.000 .080 TYP
11
12
4
SECTION B-B

MARKING VIEWS
SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009504	SCHEMATIC	REF
4	1008540-8	GASKET, CONNECTOR MINIATURE	17
1	1010605	TRANSFORMER	16
3	1010353-4	RELAY	15
2	1010392-1	DIODE	14
3	1010362-003	DIODE	13
AR	1006776-20	INSULATION SLEEVING, ELEC.	12
AR	1006776-22	INSULATION SLEEVING, ELEC.	11
AR	1006776-21	INSULATION SLEEVING, ELEC.	10
AR	1006757-8	WIRE, ELEC. (.020 DIA)	9
AR	1006757-1	WIRE, ELEC. (.010 X .020)	8
8	1008161-2	SCREW, SPECIAL	7
3	1015135-015	SPACER	6
32	1006782-5	CONTACT, WRAPOST-MALE	5
32	1006775	INSULATOR, WRAPOST-MALE	4
1	1008518	WAFER BOARD, BOTTOM	3
1	1008516	WAFER BOARD, TOP	2
1	1007505	FRAME	1

011 LIST OF MATERIALS

1007528 E

NEXT ASSY	USED ON
1007578	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT
DRAWN DATE
CHECKED 13 AUG 64
APPROVAL 7 OCT 64
APPROVAL 10-8-64
NASA APPROVAL 10-14-64
MIT APPROVAL 10/14/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCT MODING ASSY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007528
SCALE 5/1
WT
SHEET 1 OF 1

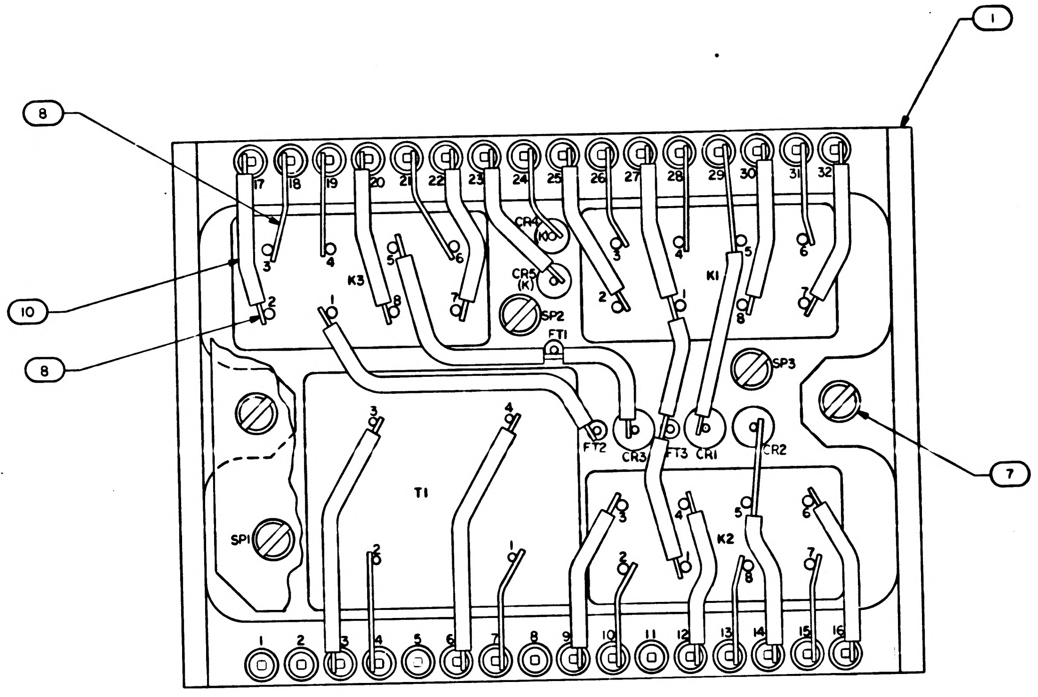
	REV LTR	SH
1007528	E	1

2#

1007528

2⅟ 1007528

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO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FT2
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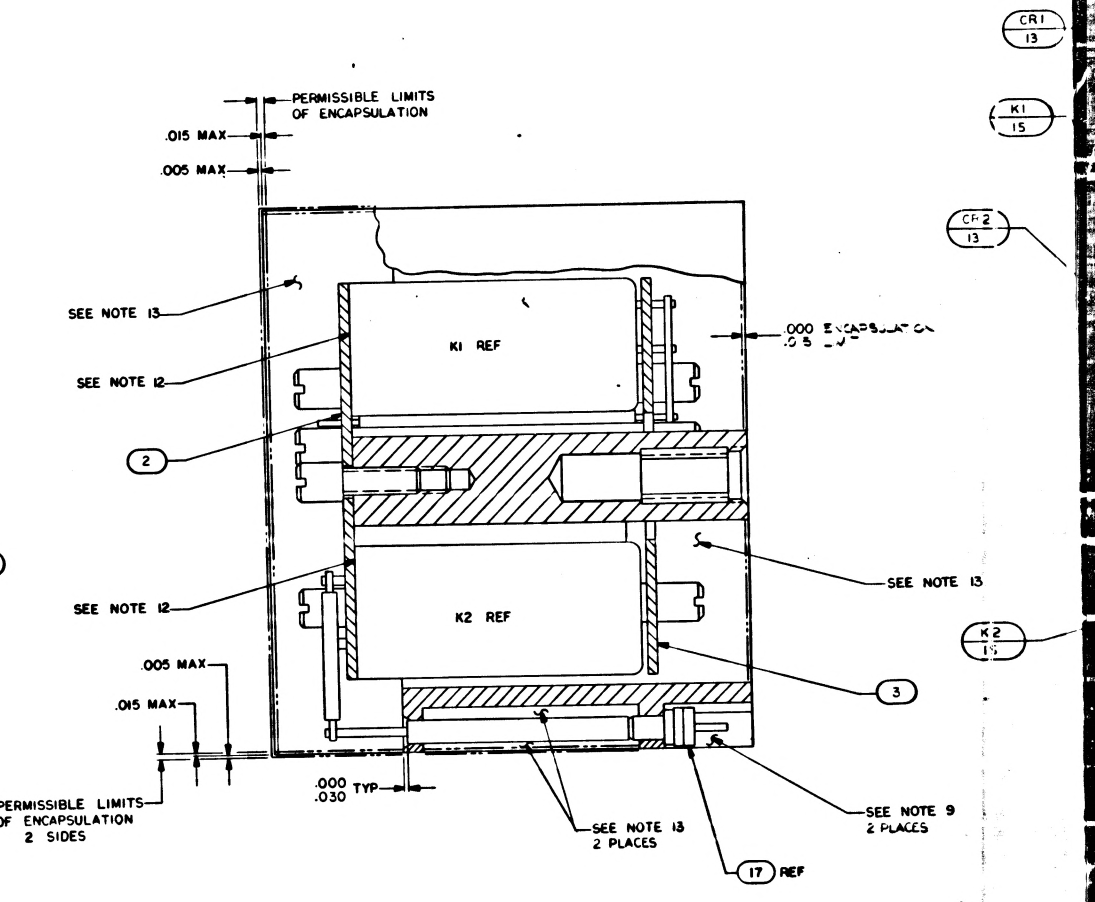
SP1
SP2
SP3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SEE NOTE 13
SEE NOTE 12
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.000 ENCAPSULATION .015 LIMIT
SEE NOTE 13
SEE NOTE 12
K2 REF
3
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PERMISSIBLE LIMITS OF ENCAPSULATION 2 SIDES
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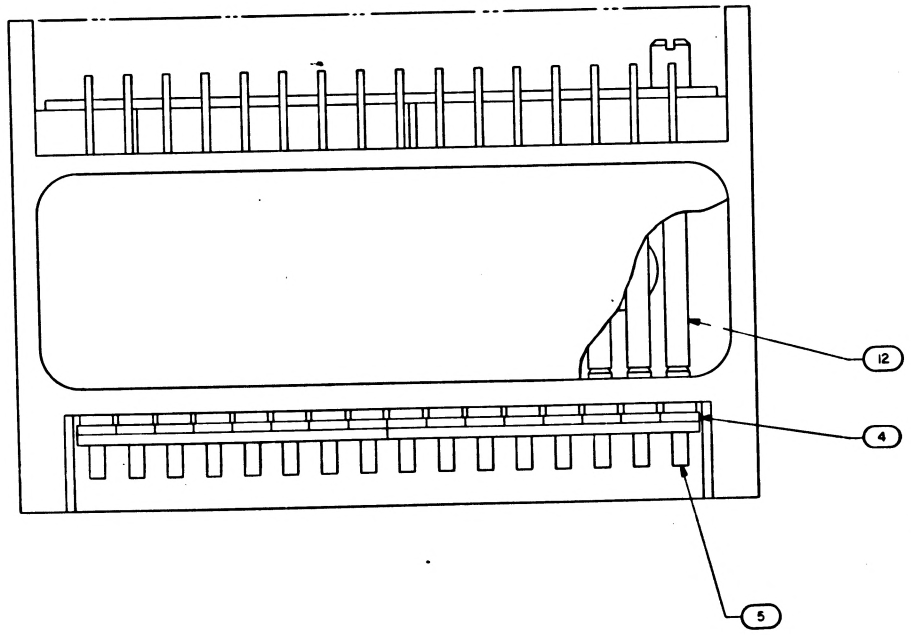
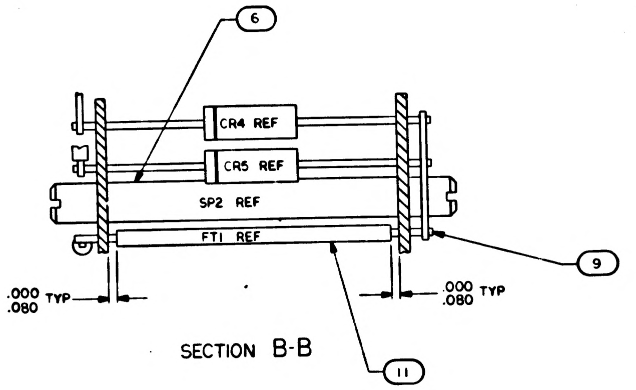
SEE NOTE 13 2 PLACES
SEE NOTE 9 2 PLACES
17 REF




6
CR4 REF
CR5 REF
SP2 REF
FT1 REF
9
.000 .080 TYP
.000 .080 TYP
11

SECTION B-B

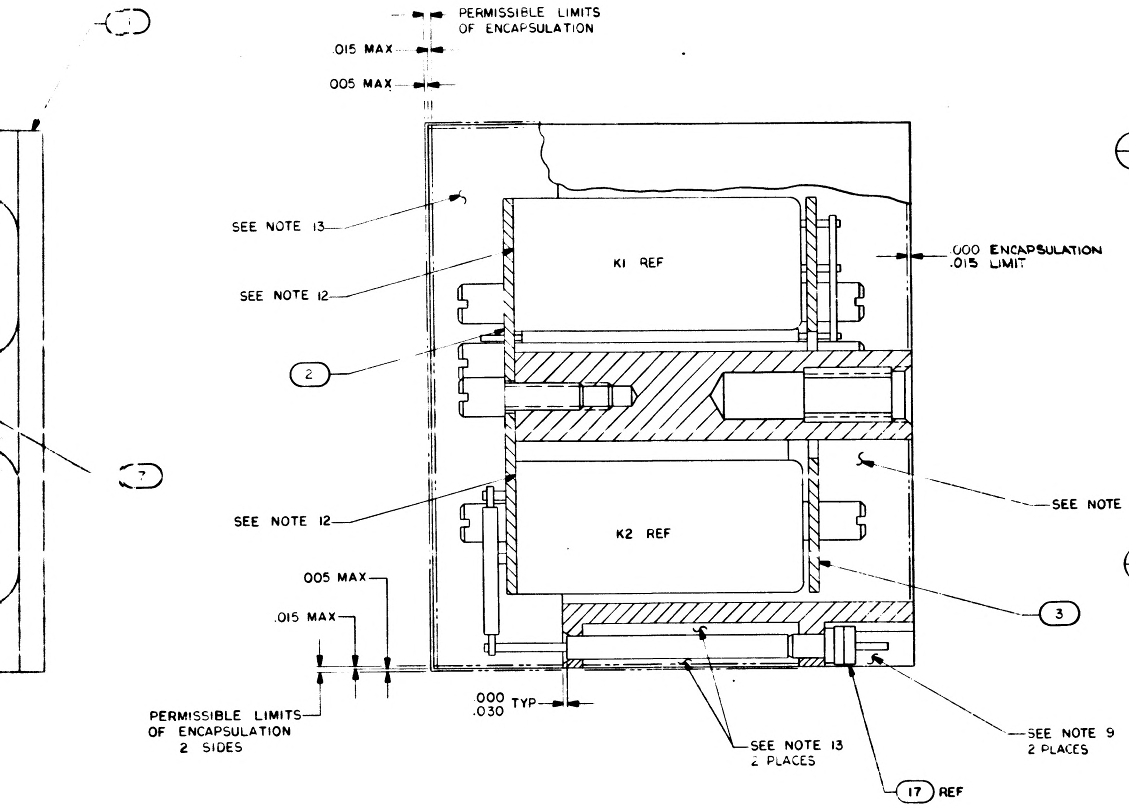
NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. FT DENOTES FEEDTHRU
4. K INDICATES CATHODE SIDE OF DIODE
5. SP DENOTES SPACER
6. WELD PER ND 1002005
7. ASSEMBLE FIND NUMBERS 4 AND 5 PER ND 1002136

9. INDICATED AREAS TO BE FREE OF ENCAPSULATION
10. MARK .100/.060 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
11. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
12. BOND FIND NOS 15 AND 16 TO FIND NO. 2 PER ND 1002004 TYPE I
13. ENCAPSULATE MODULE PER ND 1002002, BLACK POLYURETHANE FOAM. REMOVE ALL FLASHING
14. WORKMANSHIP REQUIREMENT PER ND 1002069
~~15. BOND FIND NO. 17 TO FIND NO. 4 PER ND 1002237~~
16. COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007528
17. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
18. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 100992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

1007528	REV LTR	SH
	E	1

F 1007528

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 16623	26 FEB 65	DAS
B	REVISED PER TDRR 19413	[illegible] 65	[illegible]
C	REVISED PER TDRR 19488	8 JUN 65	EHH
D	REVISED PER TDRR 20143	19 JUN 65	[illegible]
E	REVISED PER TDRR 22935	[illegible] 65	[illegible]
F	REVISED PER TDRR 23888	17 NOV 65	[illegible]


PERMISSIBLE LIMITS OF ENCAPSULATION
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SEE NOTE 13
SEE NOTE 12
K1 REF
.000 ENCAPSULATION .015 LIMIT
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SEE NOTE 13
SEE NOTE 12
K2 REF
.005 MAX
.015 MAX
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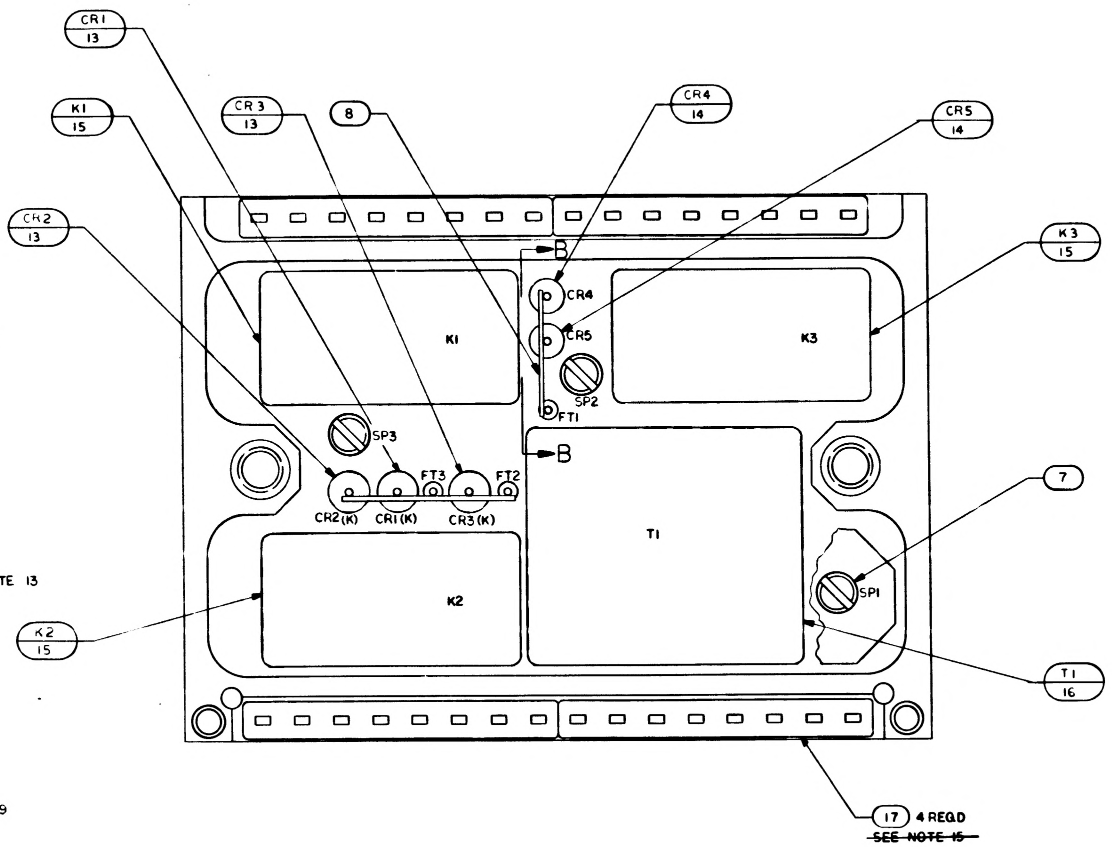
PERMISSIBLE LIMITS OF ENCAPSULATION 2 SIDES
.000 .030 TYP
SEE NOTE 13 2 PLACES
SEE NOTE 9 2 PLACES
17 REF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FT3
FT2
CR2(K)
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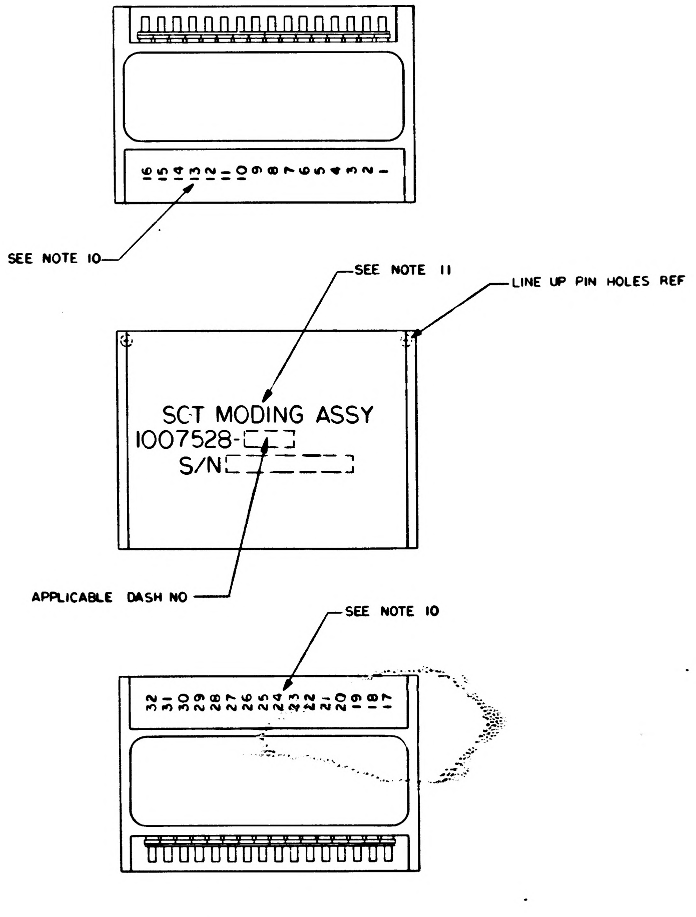
~~SEE NOTE 15~~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SEE NOTE 10
SEE NOTE 11
LINE UP PIN HOLES REF
SCT MODING ASSY
1007528-
S/N
APPLICABLE DASH NO
SEE NOTE 10
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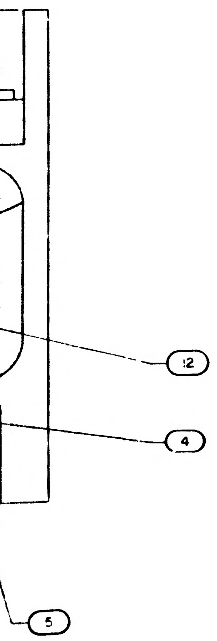
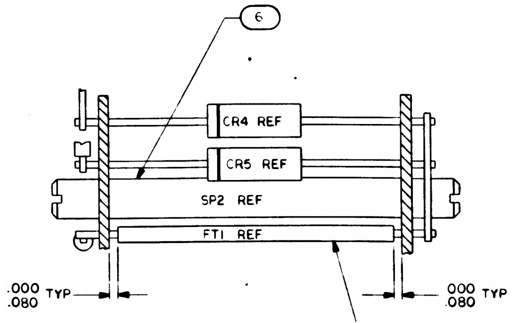
MARKING VIEWS
SCALE 2/1

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CR4 REF
CR5 REF
SP2 REF
FT1 REF
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.000 .080 TYP
18

SECTION B-B

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
☒	1009504	SCHEMATIC	REF
AR	1010848-2	WIRE, ELECTRICAL-NICKEL	18
4	1008540-8	GASKET, CONNECTOR MINIATURE	17
1	1010605	TRANSFORMER	16
3	1010353-4	RELAY	15
2	1010392-1	DIODE	14
3	1010362-003	DIODE	13
AR	1006776-20	INSULATION SLEEVING, ELEC.	12
~~AR~~	~~1006776-22~~	~~INSULATION SLEEVING, ELEC.~~	11
AR	1006776-21	INSULATION SLEEVING, ELEC.	10
~~AR~~	~~1006787-8~~	~~WIRE, ELEC. (.020 DIA)~~	9
AR	1006757-1	WIRE, ELEC. (.010 X .020)	8
8	1008161-2	SCREW, SPECIAL	7
3	1015135-015	SPACER	6
32	1006782-5	CONTACT, WRAPOST-MALE	5
32	1006775	INSULATOR, WRAPOST-MALE	4
1	1008518	WAFER BOARD, BOTTOM	3
1	1008516	WAFER BOARD, TOP	2
1	1007505	FRAME	1

011 LIST OF MATERIALS

NEXT ASSY	USED ON
1007578	
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO
CONTRACT
DRAWN DATE
CHECKED 13 [illegible] 64
APPROVAL 7 OCT 64
APPROVAL 10-8-64
NASA APPROVAL 10-14-64
MIT APPROVAL

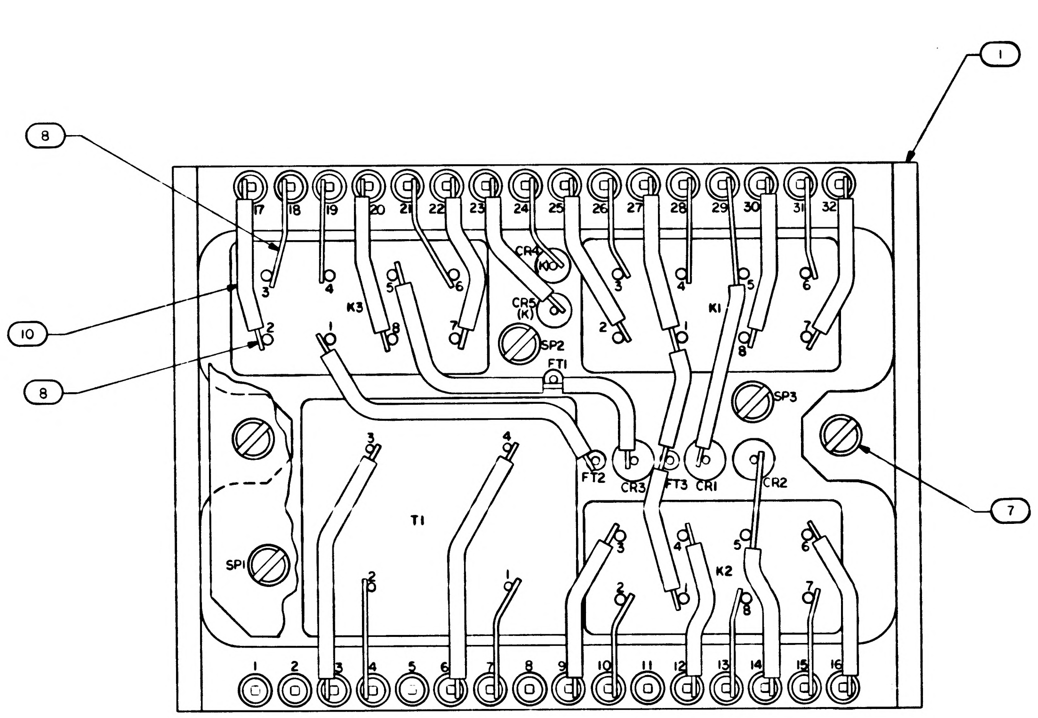
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCT MODING ASSY

CODE IDENT NO. 80230
SIZE J
NASA DRAWING NO. 1007528
SCALE 5/1
WT
SHEET 1 OF 1

1007528 F

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO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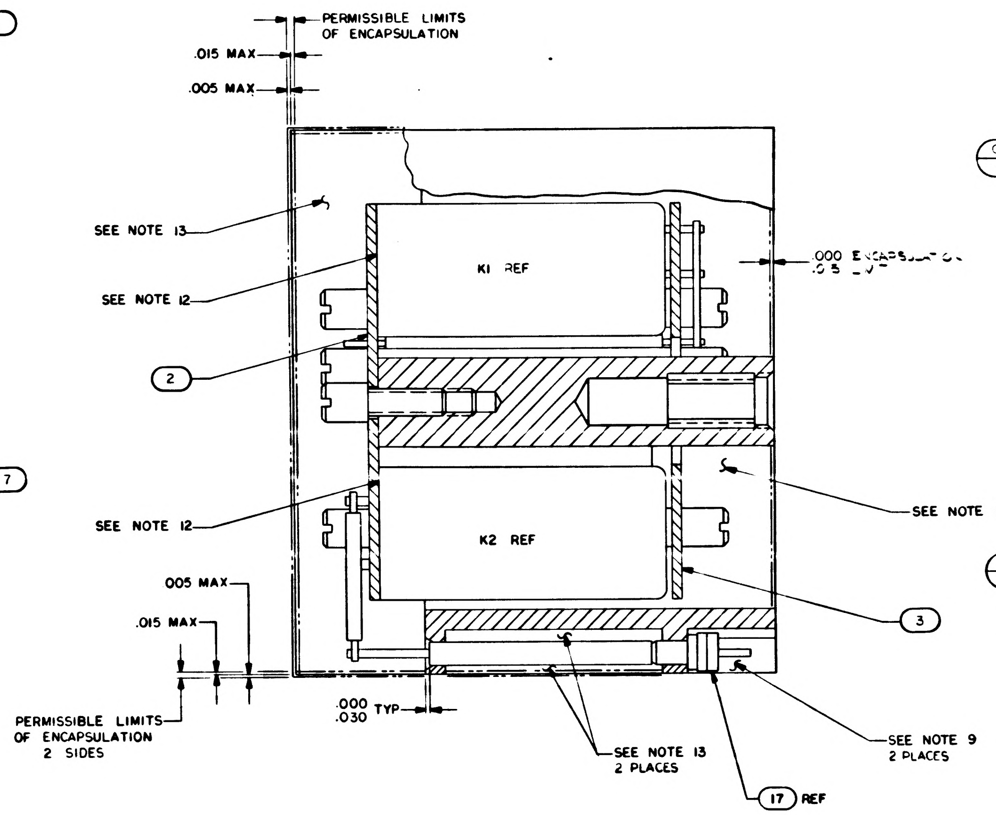
PERMISSIBLE LIMITS OF ENCAPSULATION
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SEE NOTE 12
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SEE NOTE 13
SEE NOTE 12
K2 REF
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PERMISSIBLE LIMITS OF ENCAPSULATION 2 SIDES
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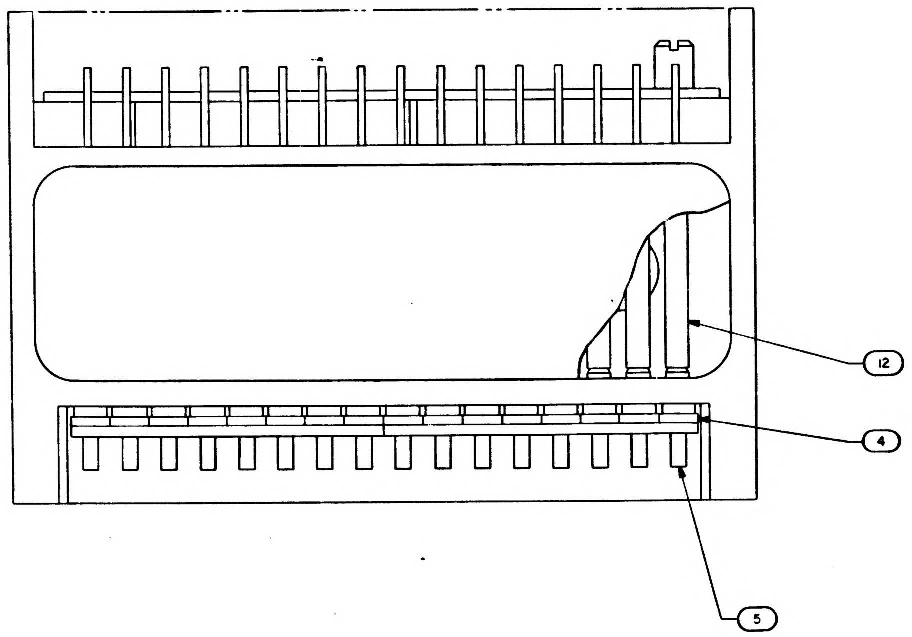
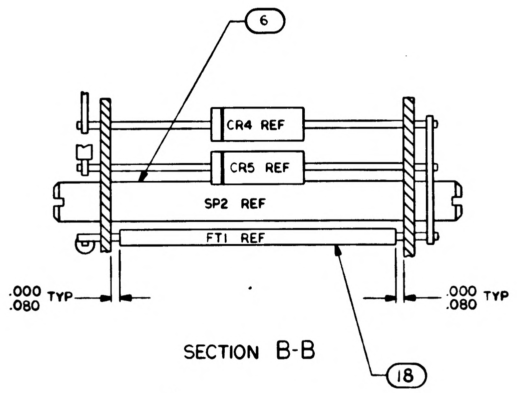
SEE NOTE 13 2 PLACES
SEE NOTE 9 2 PLACES
17 REF

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CR5 REF
SP2 REF
FT1 REF
.000 .080 TYP
.000 .080 TYP
18

SECTION B-B

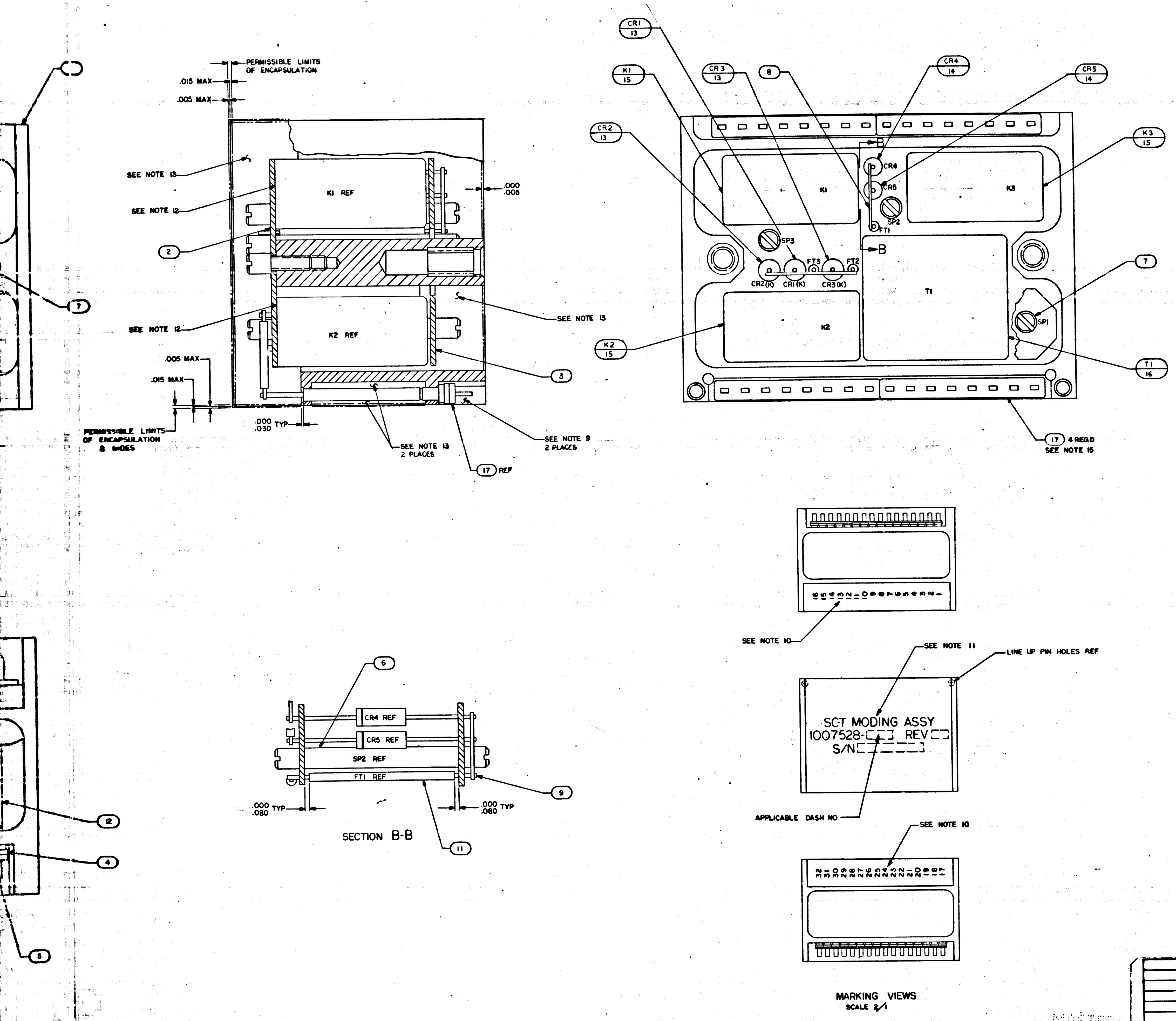
NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. FT DENOTES FEEDTHRU
4. K INDICATES CATHODE SIDE OF DIODE
5 SP DENOTES SPACER
6 WELD PER ND 1002005
7 ASSEMBLE FIND NUMBERS 4 AND 5 PER ND 1002136

9. INDICATED AREAS TO BE FREE OF ENCAPSULATION
10 MARK .100/.060 HIGH WHITE CHARACTERS PER ND 1002019 CENTRALIZE AS SHOWN
11. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
12. BOND FIND NOS 15 AND 16 TO FIND NO. 2 PER ND 1002004 TYPE I
13. ENCAPSULATE MODULE PER ND 1002002. BLACK POLYURETHANE FOAM. REMOVE ALL FLASHING
14. WORKMANSHIP REQUIREMENT PER ND 1002069
~~15. BOND FIND NO. 17 TO FIND NO. 4 PER ND 1002237~~
16 COMPLETED ASSEMBLY SHALL BE TESTED IN ACCORDANCE WITH AND SHALL MEET ALL OF THE REQUIREMENTS OF PS 1007528
17. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
18. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 10 0992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

1007528	REV LTR F	SH 1

SYM	DESCRIPTION	DATE	APPROVAL

REVISIONS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K2 REF
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SEE NOTE 12
SEE NOTE 13
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.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION 2 SIDES
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.030 TYP
SEE NOTE 13 2 PLACES
17 REF
SEE NOTE 9 2 PLACES
CR1 13
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CR4 14
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CR2 13
K3 15
B
CR4
CR5
K1
K3
SP2
FT1
SP3
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FT3
FT2
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CR1(K)
CR3(K)
T1
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K2 15
K2
SP1
T1 16
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SEE NOTE 10
SEE NOTE 11
LINE UP PIN HOLES REF
SCT MODING ASSY
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S/N☐
APPLICABLE DASH NO
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MARKING VIEWS
SCALE 2/1
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CR5 REF
SP2 REF
FT1 REF
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SECTION B-B
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☒	1009504	SCHEMATIC	REF
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1	1010605	TRANSFORMER	16
3	1010353-4	RELAY	15
2	1010392-1	DIODE	14
3	1010362-003	DIODE	13
AR	1006776-20	INSULATION SLEEVING, ELEC.	12
AR	1006776-22	INSULATION SLEEVING, ELEC.	11
AR	1006776-21	INSULATION SLEEVING, ELEC.	10
AR	1006757-8	WIRE, ELEC. (.020 DIA)	9
AR	1006757-1	WIRE, ELEC. (.010 X.020)	8
8	1008161-2	SCREW, SPECIAL	7
3	1015135-015	SPACER	6
32	1006782-5	CONTACT, WRAPOST-MALE	5
32	1006775	INSULATOR, WRAPOST-MALE	4
1	1008518	WAFER BOARD, BOTTOM	3
1	1008516	WAFER BOARD, TOP	2
1	1007505	FRAME	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
011	LIST OF MATERIALS		

NEXT ASSY	USED ON
1007578	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

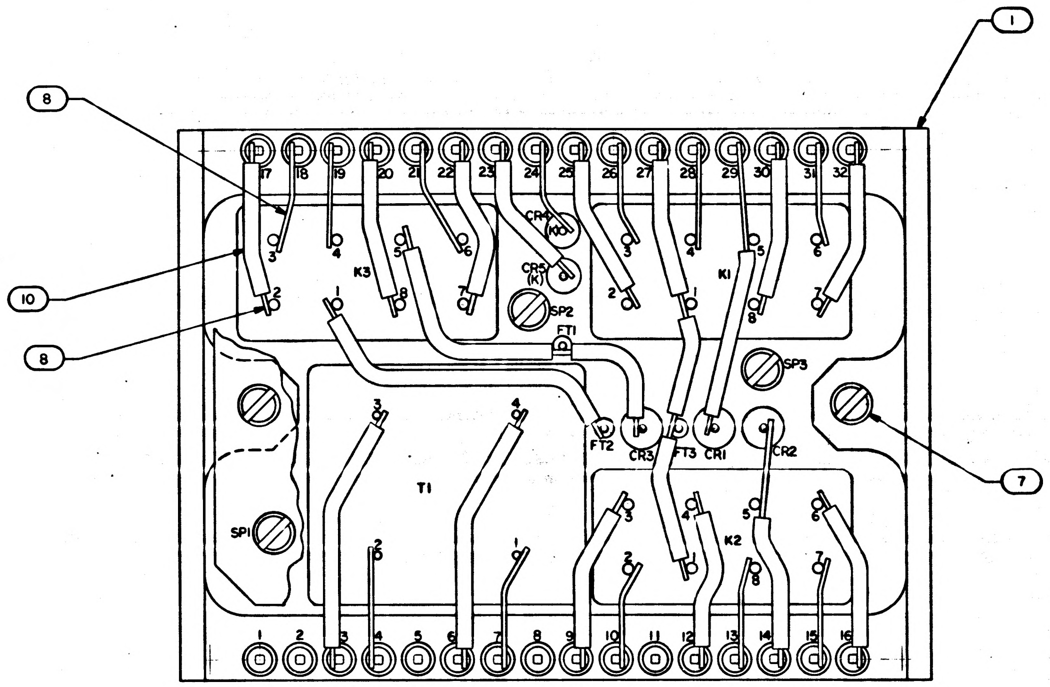
DRAWN DATE
CHECKED 13AUG64
APPROVAL 7 OCT 64
APPROVAL 11-9-64
NASA APPROVAL 10-14-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCT MODING ASSY

CODE IDENT NO. —
SIZE J
NASA DRAWING NO. 1007528
SCALE 5/1
WT —
SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.


1
8
10
8
7
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
CR4 (K)
CR5 (K)
SP2
FT1
K3
K1
SP3
T1
FT2
CR3
FT3
CR1
CR2
K2
SP1
1
2
3
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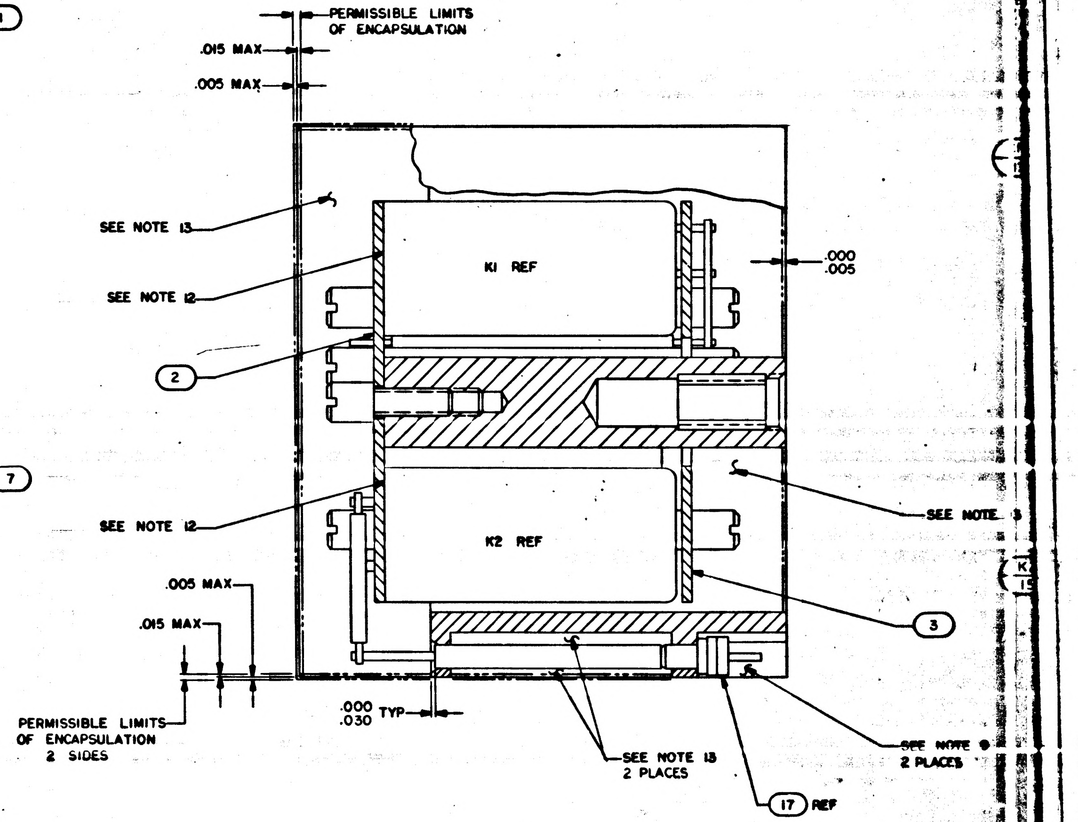
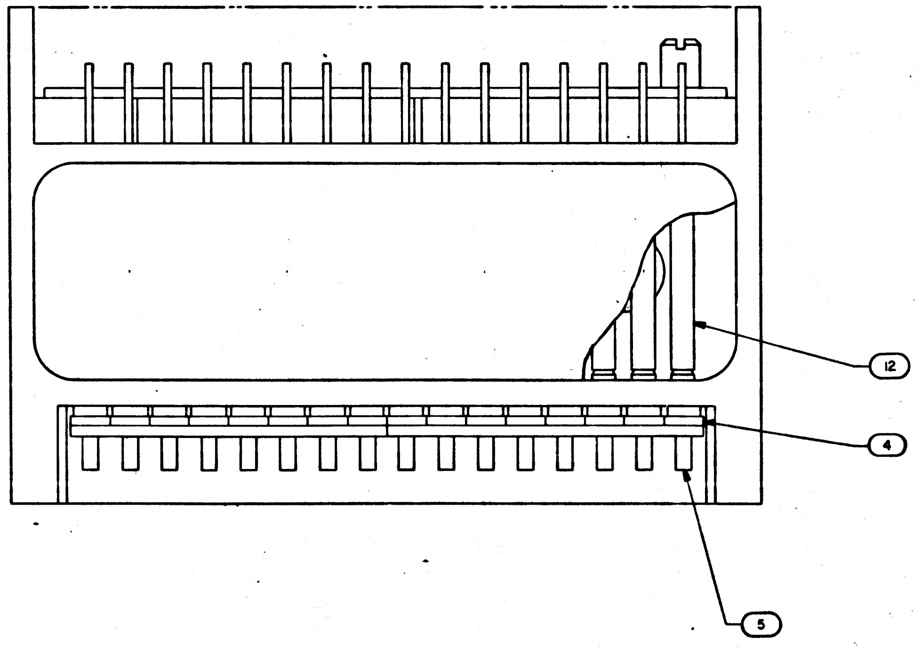
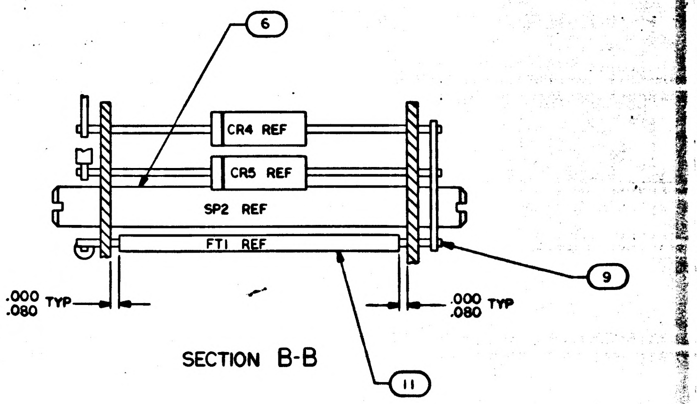

PERMISSIBLE LIMITS OF ENCAPSULATION
.015 MAX
.005 MAX
SEE NOTE 13
SEE NOTE 12
K1 REF
.000
.005
2
SEE NOTE 3
SEE NOTE 12
K2 REF
3
.005 MAX
.015 MAX
PERMISSIBLE LIMITS OF ENCAPSULATION 2 SIDES
.000
.030 TYP
SEE NOTE 13 2 PLACES
SEE NOTE 9 2 PLACES
17 REF




6
CR4 REF
CR5 REF
SP2 REF
FT1 REF
9
.000
.080 TYP
.000
.080 TYP
11

SECTION B-B

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. FT DENOTES FEEDTHRU
4. K INDICATES CATHODE SIDE OF DIODE
5. SP DENOTES SPACER
6. WELD PER ND 1002005
7. ASSEMBLE FIND NUMBERS 4 AND 5 PER ND 1002136

9. INDICATED AREAS TO BE FREE OF ENCAPSULATION
10. MARK .100/.060 HIGH WHITE CHARACTERS PER ND 1002019. CENTRALIZE AS SHOWN
11. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
12. BOND FIND NOS. 15 AND 16 TO FIND NO. 2 PER ND 1002004 TYPE I
13. ENCAPSULATE MODULE PER ND 1002002, BLACK POLYURETHANE FOAM. REMOVE ALL FLASHING
14. WORKMANSHIP REQUIREMENT PER ND 1002069
15. BOND FIND NO. 17 TO FIND NO. 4 PER ND 1002237

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1007530 A

REVISIONS 12031

SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED BY CONFIGURATION DWG REV B PER TDRR 14706	12/1/64	WK

DASH NO. 011

PART NO.	DESCRIPTION	REQD.
1008530 -001	Frame, Tray 10	1
1006774	Insulator, Wrapost, Female Miniature	157
1006781-2	Contact, Wrapost, Female Miniature	157
1010382-1	Contact, Blade Edge Connector	60
1010383-1	Insulator, Wrapost, Male	60
1010622-1	Connector Receptacle	1
1010620-4	Pin, Guide	16
1010620-5	Pin, Guide	2
1001317	Retainer, Jack Screw	1
1008172	Screw, Jack	23
1008098	Screw, Socket Head	1
1004206	Washer, Thrust	46
1008099-2	Washer	1
MS 16995-10	Screw, Cap, Socket Head	3
MS 16995-11	Screw, Cap, Socket Head	2
MS 21045 C 04	Nut, Self-Locking Hex	2
MS 171433	Pin, Spring	23
1004207	Drive Cylinder	23
1007093	Assembly, Buffer Resistor Module	1
1008552 -001	Gasket, Connector	1
1008553 -001	Gasket, Connector	1
1006782-2	Contact, Wrapost - Male, Miniature	45
1006775	Insulator, Wrapost - Male, Minature	45

Ⓐ REPLACED BY CONFIGURATION DWG REV B

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007580	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN DATE 2/15/64
CHECKED
APPROVAL
APPROVAL 8/24/64
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 10
(100 SERIES)

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007530
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
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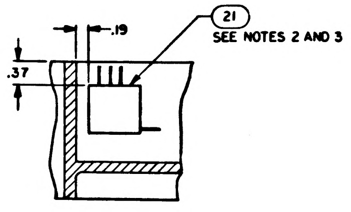
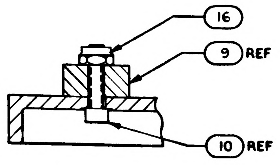
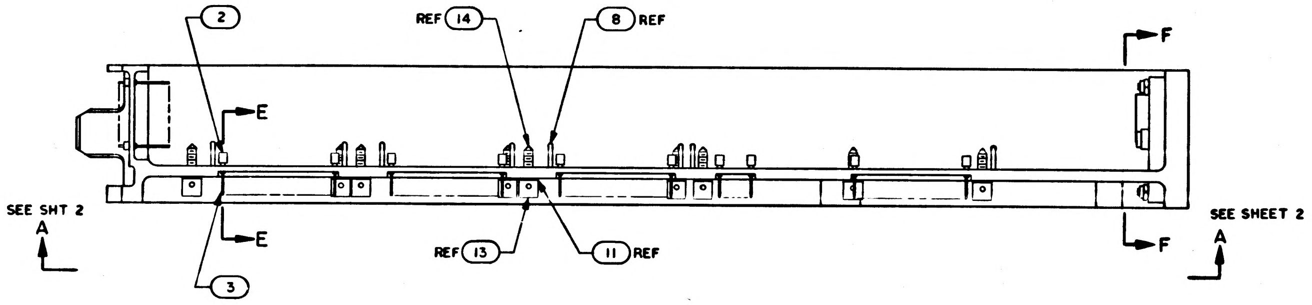
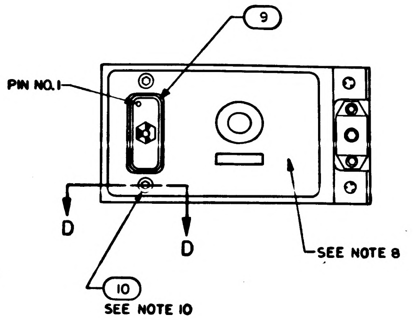


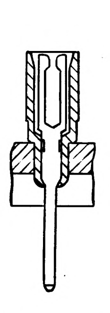
PARTIAL SECTION F-F



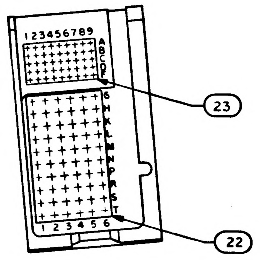
PARTIAL SECTION D-D
SCALE 2/1

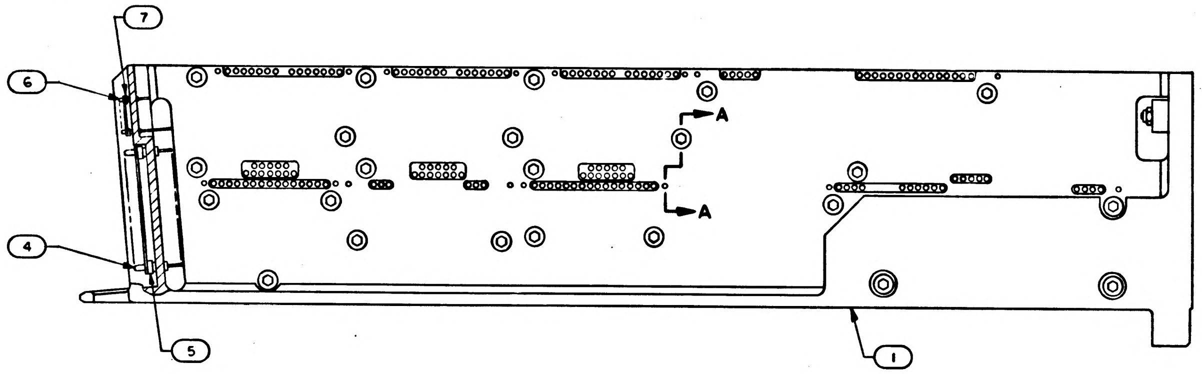


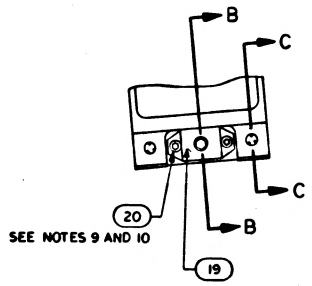




PARTIAL SECTION E-E
247 PLACES
NO SCALE

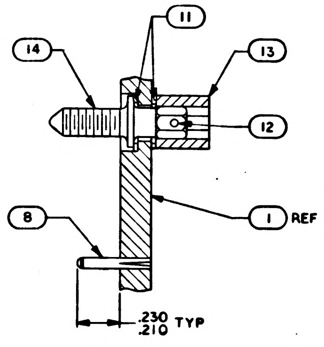




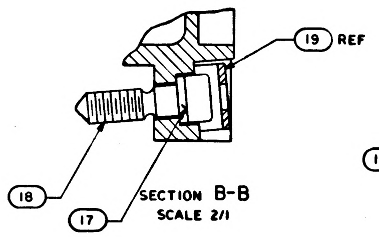


Ⓑ REPLACES WORD DWG REV A

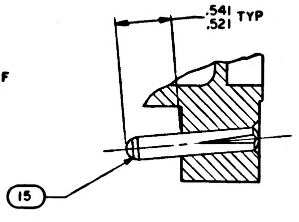
NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 21 TO FIND NO. 1 PER ND1002004 TYPE I
3. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 21
4. ASSEMBLE FIND NO. 2,3,4,5,6 AND 7 PER ND1002136
5. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
6. BOND FIND NO.
7. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. BOND FIND NO. 22 TO FIND NO. 5 & FIND NO. 23 TO FIND NO. 7 PER ND 1002237



PARTIAL SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
2 PLACES
SCALE 2/1

TERMINATION CHART FOR FIND NO. 21 REF	
FROM	TO
E8	45A10J1-24
E9	45A10J1-17
E10	45A10J1-32
E11	45A10J1-2
E12	45A10J1-10
E13	45A10J1-11

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009570		WIRING DIAGRAM	REF
1	1008553		GASKET CONNECTOR	23
1	1008552		GASKET CONNECTOR	22
1	1007582		BUFFER RESISTORS MODULE ASSY	21
3	MS16995-10		SCREW, CAP, SOCKET HD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
23	1008172		SCREW, JACK	14
23	1004207		DRIVE CYLINDER	13
23	MS171433		PIN SPRING	12
46	1004206		WASHER, THRUST	11
2	MS16995-11		SCREW CAP SOCKET HD	10
1	1010622-1		CONNECTOR RECEPTACLE	9
16	1010620-4		PIN GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	1010382-1		CONTACT, BLADE EDGE CONN	4
154	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
154	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008530		FRAME	1

011
LIST OF MATERIALS

1007580	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL
—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN L Krahn
CHECKED
APPROVED
APPROVED 12/4/64
APPROVED MIT
APPROVED MSC 12-4-64
DATE

FRAME ASSEMBLY
TRAY 10

CODE IDENT NO. —
SIZE E
DRAWING NO. 1007530
SCALE 1/1
SHEET 1 OF 2

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REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
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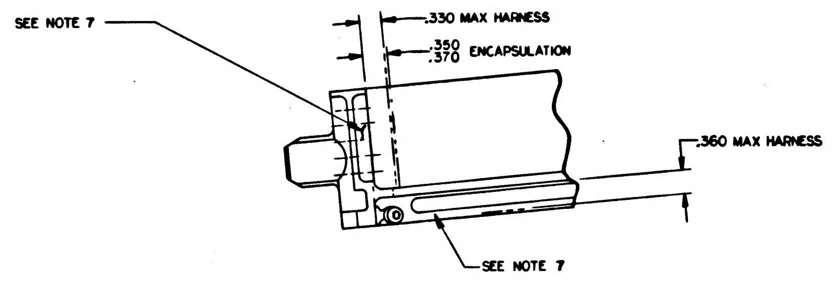
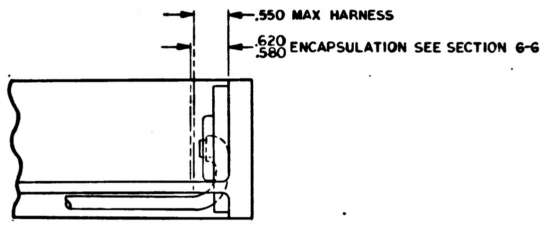
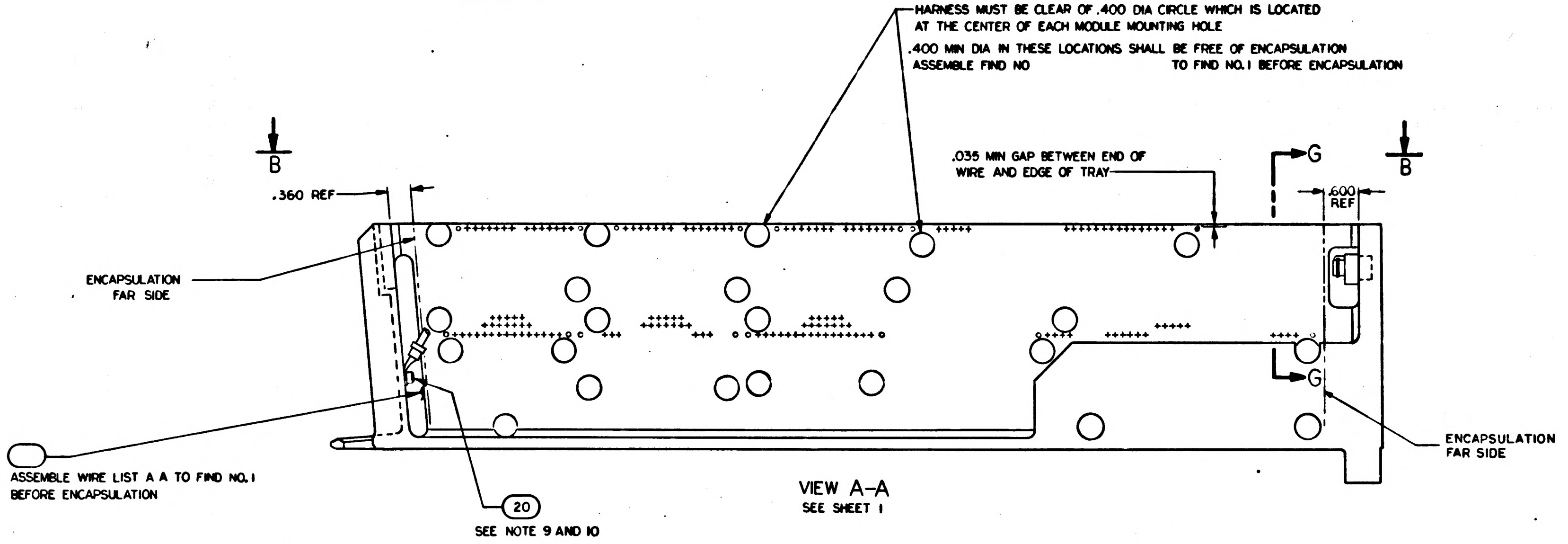
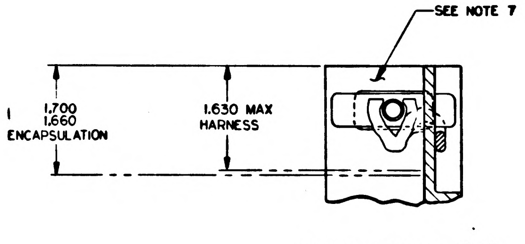

SEE NOTE 7
.330 MAX HARNESS
.350
.370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 7

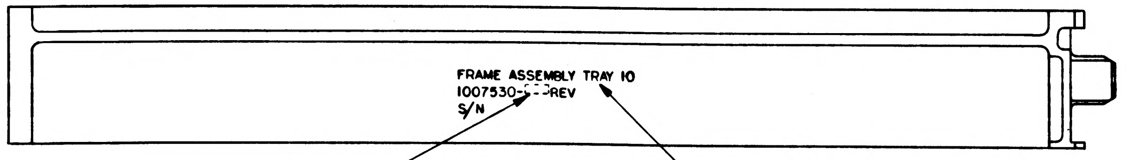

.550 MAX HARNESS
.620
.580 ENCAPSULATION SEE SECTION G-G


HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED
AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION
ASSEMBLE FIND NO
TO FIND NO. 1 BEFORE ENCAPSULATION
B
B
.360 REF
.035 MIN GAP BETWEEN END OF
WIRE AND EDGE OF TRAY
G
G
.600
REF
ENCAPSULATION
FAR SIDE
ENCAPSULATION
FAR SIDE
ASSEMBLE WIRE LIST A A TO FIND NO. 1
BEFORE ENCAPSULATION
20
SEE NOTE 9 AND 10

VIEW A–A
SEE SHEET 1


SEE NOTE 7
1.700
1.660
ENCAPSULATION
1.630 MAX
HARNESS

PARTIAL SECTION G-G


FRAME ASSEMBLY TRAY 10
1007530-– –REV
S/N
APPLICABLE DASH NO.
SEE NOTE 5

VIEW B–B
ROTATED 180°

(MARKING VIEW AFTER ENCAPSULATION)

MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007580	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS .XXX ± .005 .XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN	L. Krahn	30 SEP 64
CHECKED	[illegible]	2 OCT 64
APPROVED		
APPROVED	D. A. [illegible]	10/8/64
APPROVED MIT	W. Kupfer	[illegible]
APPROVED MSC	W. J. [illegible]	12-7-64
		DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 10

CODE IDENT NO.	SIZE	DRAWING NO.
—	E	1007530
SCALE 1/1	—	SHEET 2 OF 2

1007530 B

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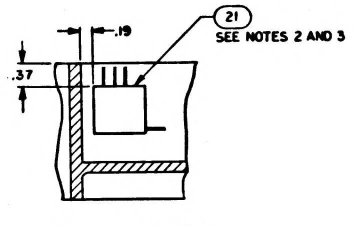
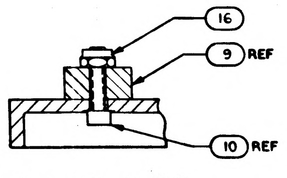
REVISIONS

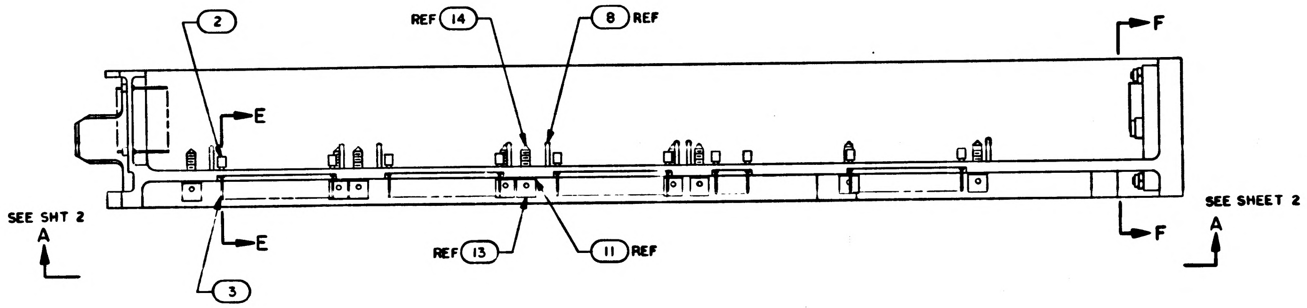
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706	4B			
C		REVISED PER TDRR 15152	LK		29 DEC 64	

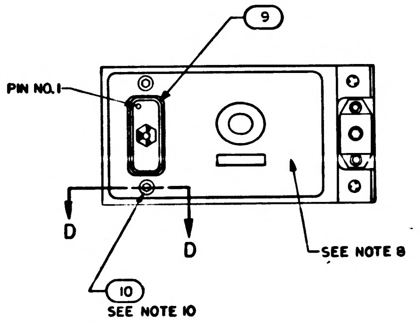


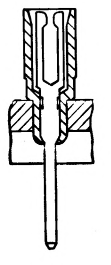
PARTIAL SECTION F-F



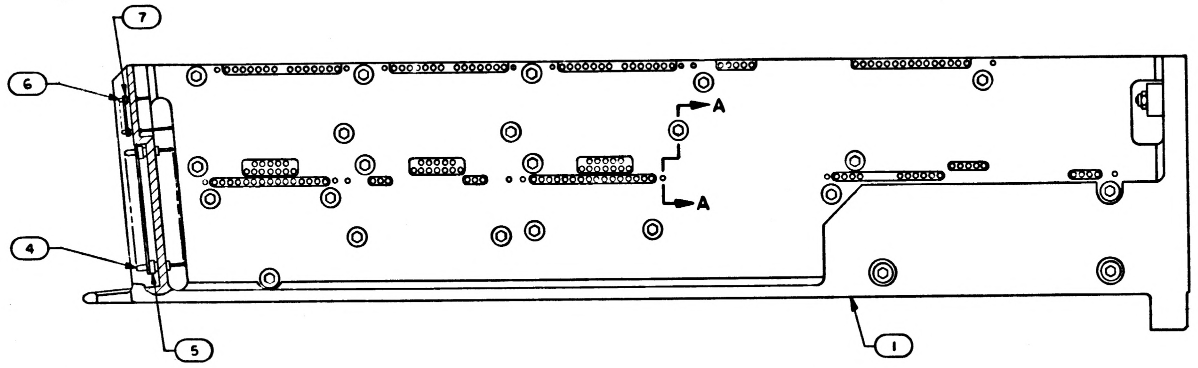
PARTIAL SECTION D-D
SCALE 2/1

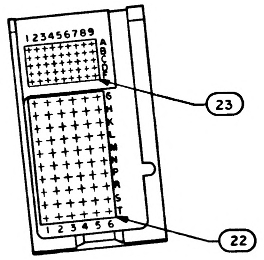


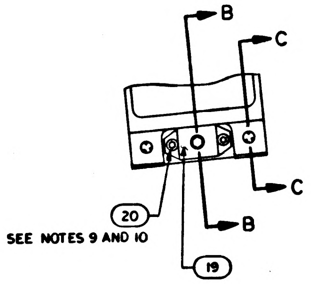




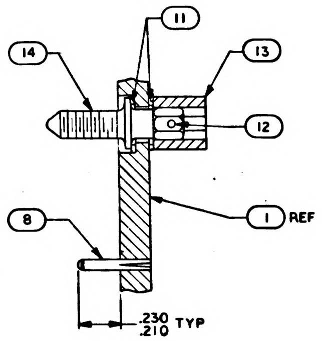
PARTIAL SECTION E-E
247 PLACES
NO SCALE



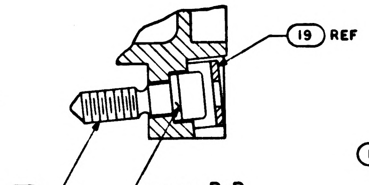




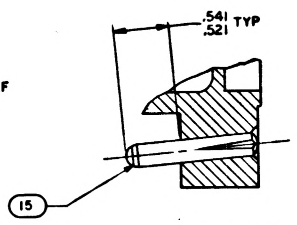
Ⓑ REPLACES WORD DWG REV A



PARTIAL SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
2 PLACES
SCALE 2/1

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 21 TO FIND NO.1 PER ND1002004 TYPE I
3. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 21
4. ASSEMBLE FIND NO. 2,3,4,5,6 AND 7 PER ND1002136
5. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
6. BOND FIND NO. 24,25 & 26 TO FIND NO.1 PER ND1002004 TYPE I AS NECESSARY
7. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. BOND FIND NO. 22 TO FIND NO. 5 & FIND NO. 23 TO FIND NO. 7 PER ND 1002237

TERMINATION CHART FOR FIND NO. 21 REF	
FROM	TO
E8	45A10J1-24
E9	45A10J1-17
E10	45A10J1-32
E11	45A10J1-2
E12	45A10J1-10
E13	45A10J1-11

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009570		WIRING DIAGRAM	REF
1	1008637		WIRE LIST AA	26
1	1008635		WIRING HARNESS B	25
1	1008634		WIRING HARNESS A	24
1	1008553		GASKET CONNECTOR	23
1	1008552		GASKET CONNECTOR	22
1	1007582		BUFFER RESISTORS MODULE ASSY	21
3	MS16995-10		SCREW, CAP, SOCKET HD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
23	1008172		SCREW, JACK	14
23	1004207		DRIVE CYLINDER	13
23	MS171433		PIN SPRING	12
46	1004206		WASHER, THRUST	11
2	MS16995-11		SCREW CAP SOCKET HD	10
1	1010821-1		CONNECTOR RECEPTACLE	9
16	1010620-4		PIN GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	1010382-1		CONTACT, BLADE EDGE CONN	4
154	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
154	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008530		FRAME	1

011 LIST OF MATERIALS

NEXT ASSY	USED ON
1007580	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN L. Krahn
CHECKED
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

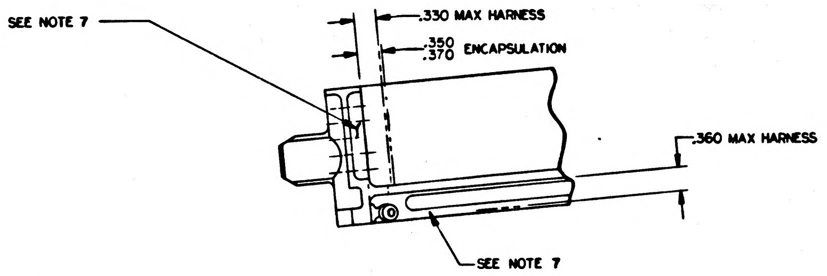
FRAME ASSEMBLY
TRAY 10

CODE IDENT NO. —
SIZE E
DRAWING NO. 1007530
SCALE 1/1
SHEET 1 OF 2

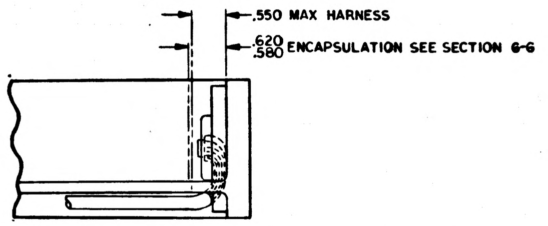
NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

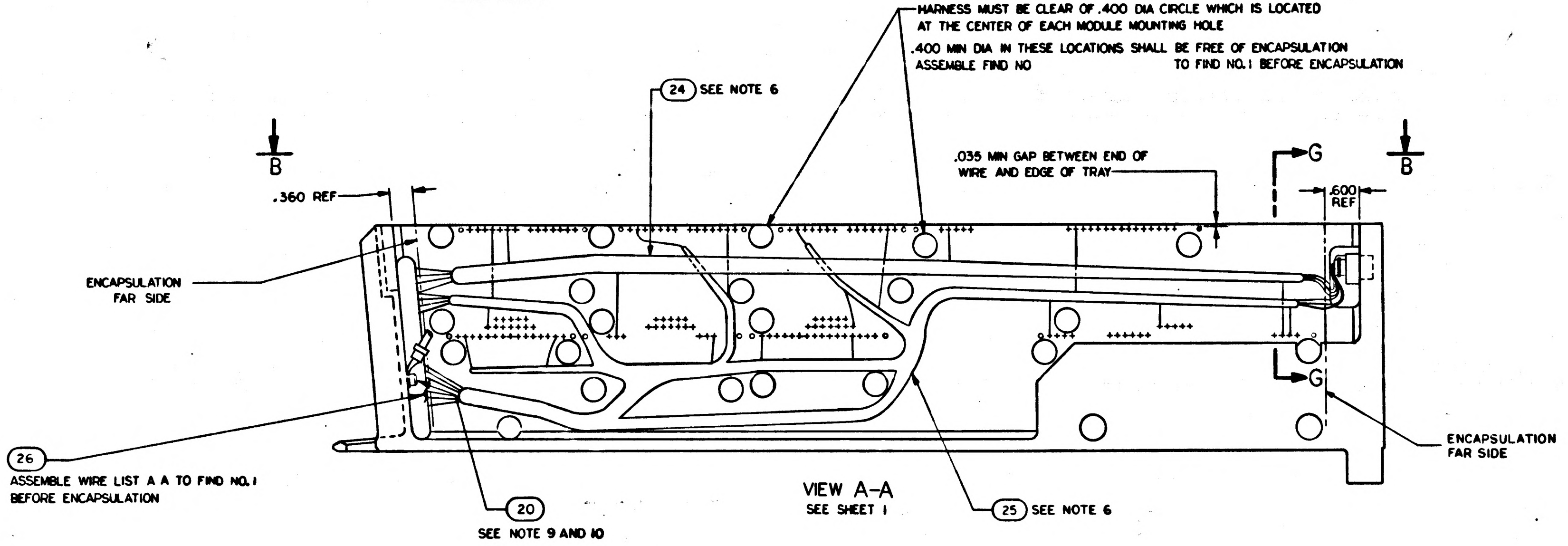
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
B		REPLACES WORD DWG REV 'A' PER TDRR 14736					
C		REVISED PER TDRR 15152	L.K.		29 DEC 64		



SEE NOTE 7
.330 MAX HARNESS
.350
.370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 7

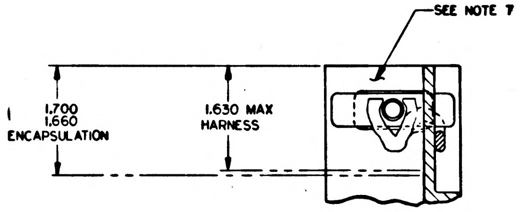


.550 MAX HARNESS
.620
.580 ENCAPSULATION SEE SECTION G-G



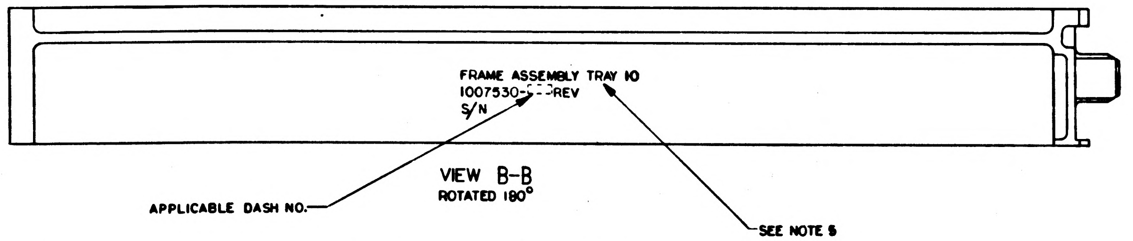
HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION
ASSEMBLE FIND NO TO FIND NO. 1 BEFORE ENCAPSULATION
24 SEE NOTE 6
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
B
B
G
G
.360 REF
.600 REF
ENCAPSULATION FAR SIDE
ENCAPSULATION FAR SIDE
26
ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
20
SEE NOTE 9 AND 10
25 SEE NOTE 6

VIEW A-A
SEE SHEET 1



SEE NOTE 7
1.700
1.660
ENCAPSULATION
1.630 MAX HARNESS

PARTIAL SECTION G-G



FRAME ASSEMBLY TRAY 10
1007530-__REV
S/N
APPLICABLE DASH NO.
SEE NOTE 5

VIEW B-B
ROTATED 180°

(MARKING VIEW AFTER ENCAPSULATION)

MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007580	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS .XXX ±.005 .XX ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN L. Krahn 30 SEP 64
CHECKED 2 OCT 64
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

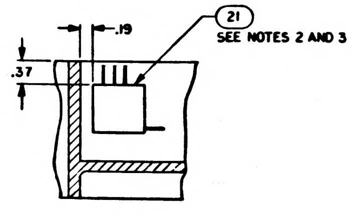
FRAME ASSEMBLY
TRAY 10

CODE IDENT NO. —
SIZE E
DRAWING NO. 1007530
SCALE 1/1
SHEET 2 OF 2

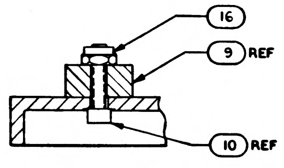
1007530 C

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

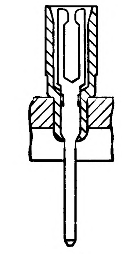
REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV "A" PER TDRR 14706				
C		REVISED PER TDRR 15152	LK		24 DEC 64	
D		REVISED PER TDRR 15476		R.L.	10 JAN 65	



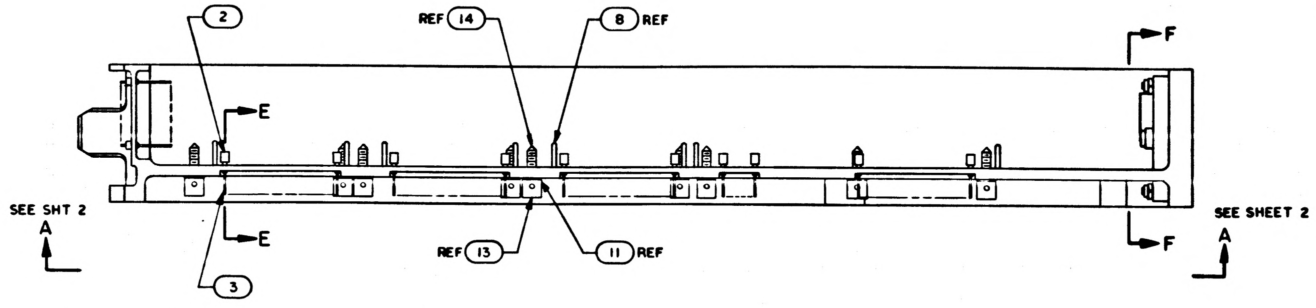
PARTIAL SECTION F-F

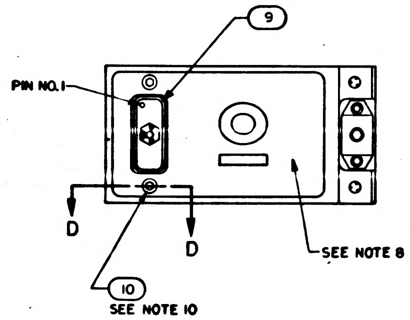


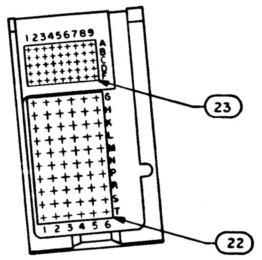
PARTIAL SECTION D-D
SCALE 2/1

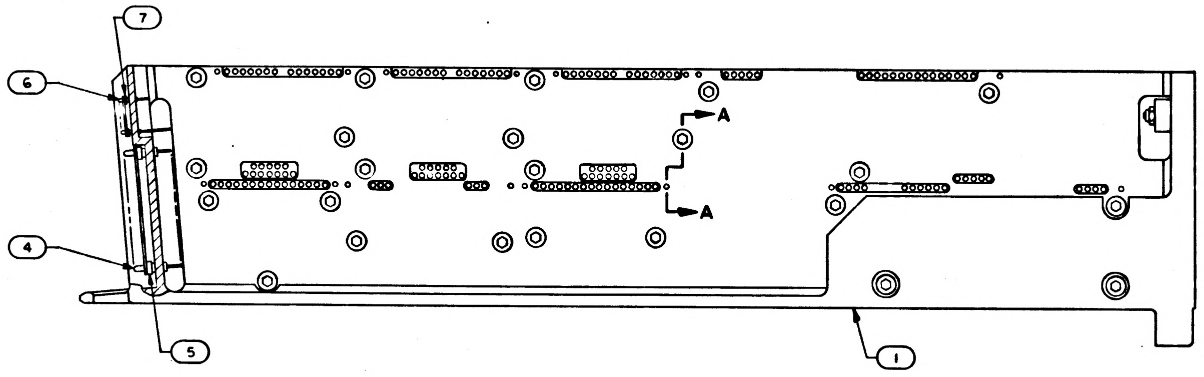


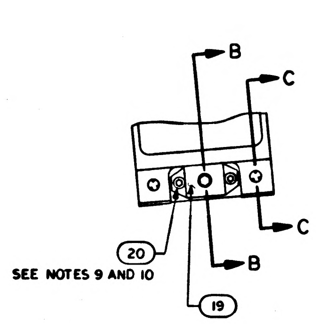
PARTIAL SECTION E-E
247 PLACES
NO SCALE



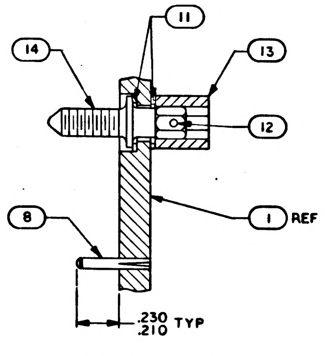




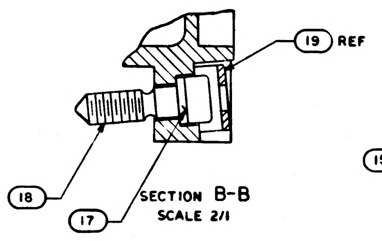




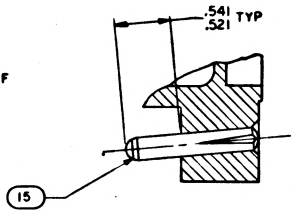
Ⓑ REPLACES WORD DWG REV A



PARTIAL SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
2 PLACES
SCALE 2/1

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 21 TO FIND NO.1 PER ND1002004 TYPE I
3. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 21
4. ASSEMBLE FIND NO. 2,3,4,5,6 AND 7 PER ND1002136
5. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
6. BOND FIND NO. 24, 25 & 26 TO FIND NO.1 PER ND1002004 TYPE I AS NECESSARY
7. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. BOND FIND NO. 22 TO FIND NO. 5 & FIND NO. 23 TO FIND NO.7 PER ND 1002237

TERMINATION CHART
FOR FIND NO. 21 REF

FROM	TO
E8	45A10J1-24
E9	45A10J1-17
E10	45A10J1-32
E11	45A10J1-2
E12	45A10J1-10
E13	45A10J1-11
E15	45A10J1-18
E17	45A10J1-19

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009570		WIRING DIAGRAM	REF
1	1008637		WIRE LIST AA	26
1	1008635		WIRING HARNESS B	25
1	1008634		WIRING HARNESS A	24
1	1008553		GASKET CONNECTOR	23
1	1008552		GASKET CONNECTOR	22
1	1007582		BUFFER RESISTORS MODULE ASSY	21
3	MS16995-10		SCREW, CAP, SOCKET HD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
23	1008172		SCREW, JACK	14
23	1004207		DRIVE CYLINDER	13
23	MS171433		PIN SPRING	12
46	1004206		WASHER, THRUST	11
2	MS16995-11		SCREW CAP SOCKET HD	10
1	1010821-1		CONNECTOR RECEPTACLE	9
16	1010620-4		PIN GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	1010382-1		CONTACT, BLADE EDGE CONN	4
154	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
154	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008530		FRAME	1

011
LIST OF MATERIALS

1007580	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN L. Krahn
CHECKED
APPROVED
APPROVED 12/4/64
APPROVED MIT
APPROVED MSC 12-4-64
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

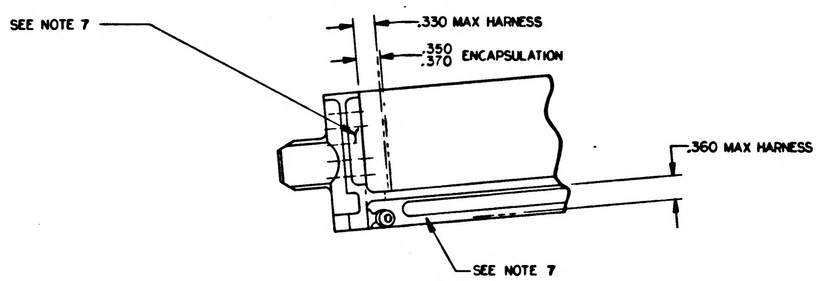
FRAME ASSEMBLY
TRAY 10

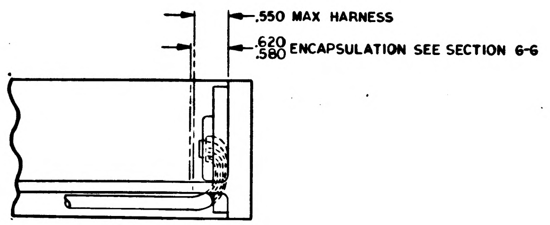
CODE IDENT NO. —
SIZE E
DRAWING NO. 1007530
SCALE 1/1
SHEET 1 OF 2

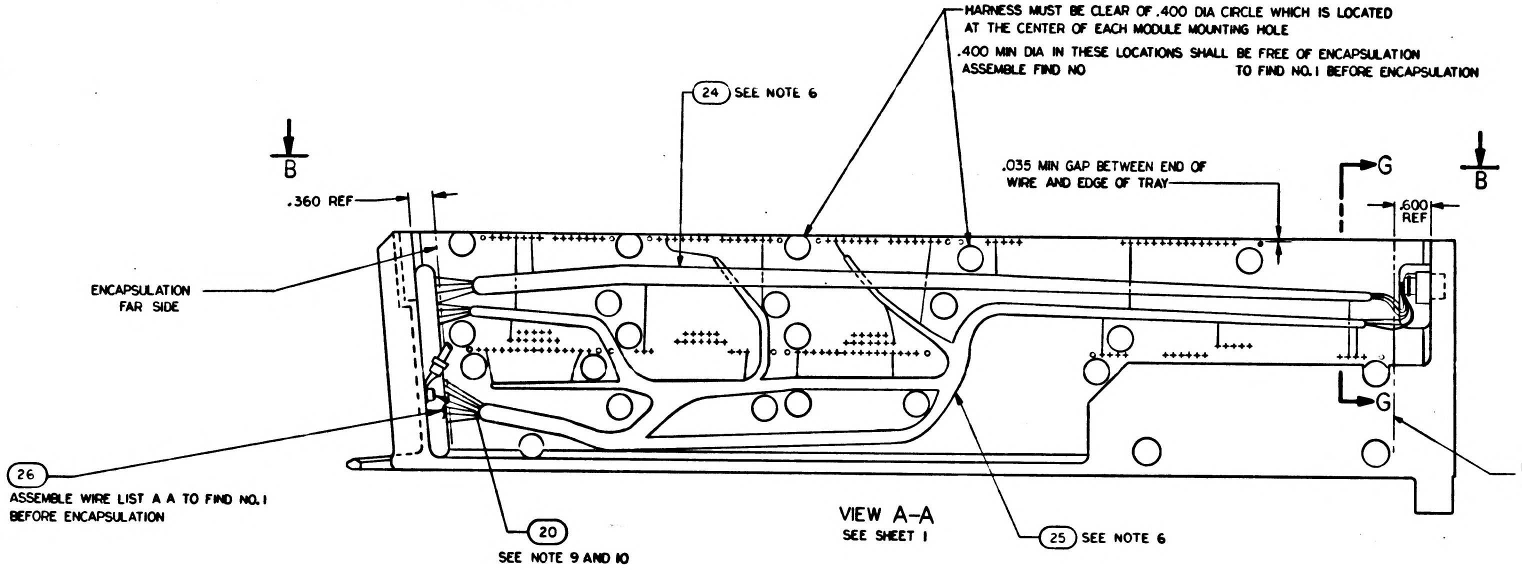
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

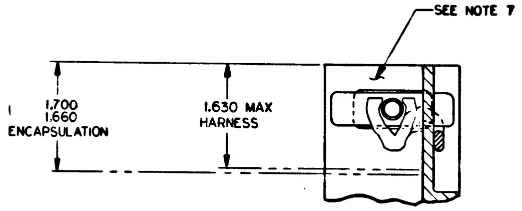
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV 'A' PER TDRR 14706				
C		REVISED PER TDRR 15152	L.K		29 DEC 64	
D		REVISED PER TDRR 15476		RL	13 JAN 65	


SEE NOTE 7
.330 MAX HARNESS
.350
.370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 7

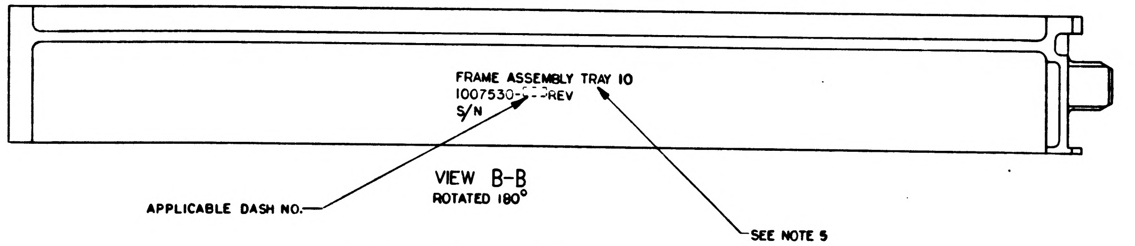

.550 MAX HARNESS
.620
.580 ENCAPSULATION SEE SECTION G-G


HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION
ASSEMBLE FIND NO TO FIND NO. 1 BEFORE ENCAPSULATION
24 SEE NOTE 6
B
B
.360 REF
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
G
G
.600 REF
ENCAPSULATION FAR SIDE
ENCAPSULATION FAR SIDE
26
ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
20
SEE NOTE 9 AND 10
25 SEE NOTE 6

VIEW A-A
SEE SHEET 1


SEE NOTE 7
1.700
1.660
ENCAPSULATION
1.630 MAX
HARNESS

PARTIAL SECTION G-G


FRAME ASSEMBLY TRAY 10
1007530-- -REV
S/N
APPLICABLE DASH NO.
SEE NOTE 5

VIEW B-B
ROTATED 180°

(MARKING VIEW AFTER ENCAPSULATION)

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007580	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS .XXX ± .005 .XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN	L. Kralln	30 SEP 64
CHECKED		2 OCT 64
APPROVED		
APPROVED		12/4/64
APPROVED MIT		
APPROVED MSC		12-7-64
		DATE

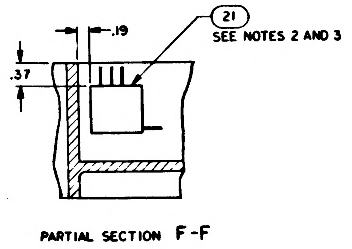
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 10

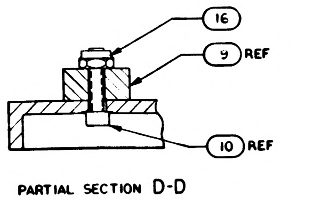
CODE IDENT NO.	SIZE	DRAWING NO.
—	E	1007530
SCALE 1/1		SHEET 2 OF 2

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

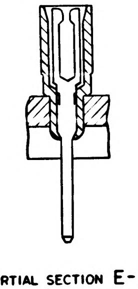
REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV 'A PER TDRR 14706			11/64	
C		REVISED PER TDRR 15152	EK		24 DEC 64	
D		REVISED PER TDRR 15476		R.L.	JAN 65	
E		REVISED PER TDRR 15948	J.K	CW	11 FEB 65	



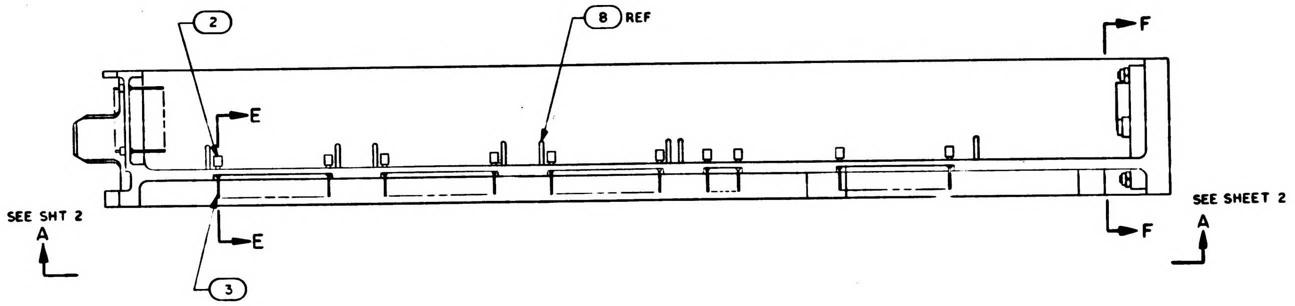
PARTIAL SECTION F-F

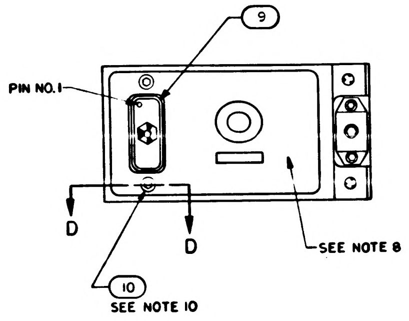


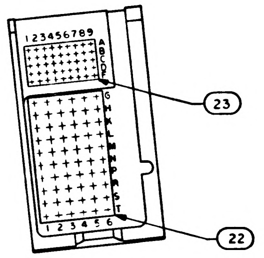
PARTIAL SECTION D-D
SCALE 2/1

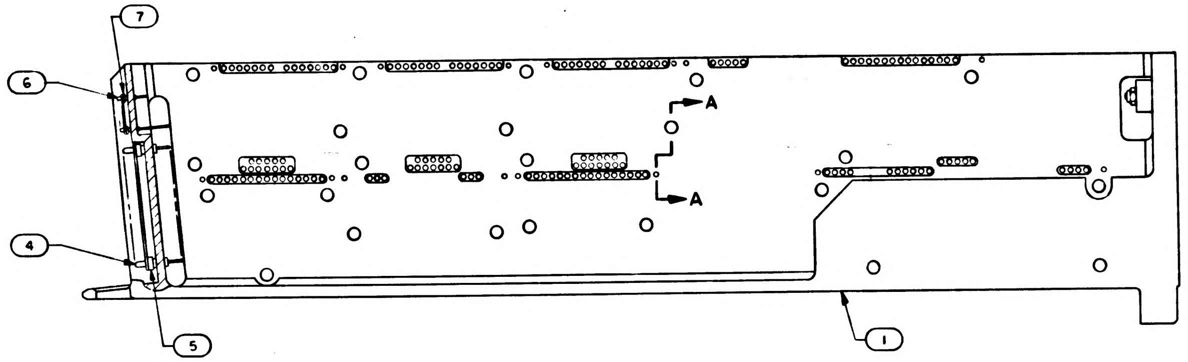


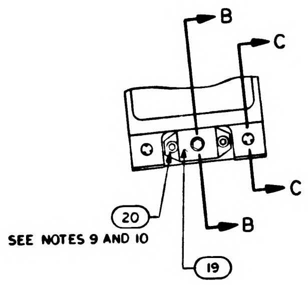
PARTIAL SECTION E-E
247 PLACES
NO SCALE



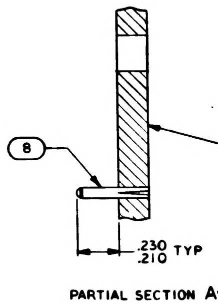




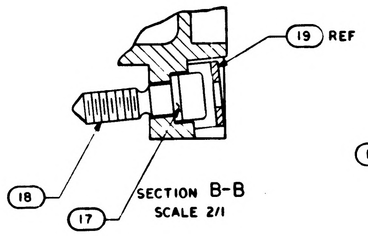




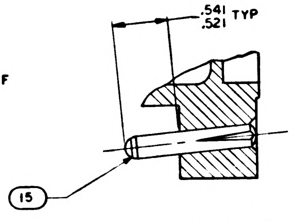
Ⓑ REPLACES WORD DWG REV A



PARTIAL SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
2 PLACES
SCALE 2/1

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO 21 TO FIND NO.1 PER ND1002004 TYPE I
3. SEE CONDUCTOR TERMINATION CHART FOR FIND NO 21
4. ASSEMBLE FIND NO. 2,3,4,5,6 AND 7 PER ND1002136
5. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
6. BOND FIND NO. 24, 25 & 26 TO FIND NO.1 PER ND1002004 TYPE I AS NECESSARY
7. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. BOND FIND NO. 22 TO FIND NO. 5 & FIND NO. 23 TO FIND NO.7 PER ND 1002237

TERMINATION CHART FOR FIND NO. 21 REF	
FROM	TO
E8	45A10J1-24
E9	45A10J1-17
E10	45A10J1-32
E11	45A10J1-2
E12	45A10J1-10
E13	45A10J1-11
E15	45A10J1-18
E17	45A10J1-19

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	IND NO.
☒	1009570		WIRING DIAGRAM	REF
1	1008637		WIRE LIST AA	26
1	1008635		WIRING HARNESS B	25
1	1008634		WIRING HARNESS A	24
1	1008553		GASKET CONNECTOR	23
1	1008552		GASKET CONNECTOR	22
1	1007582		BUFFER RESISTORS MODULE ASSY	21
3	MS16995-10		SCREW, CAP, SOCKET HD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
~~23~~	~~1008172~~		~~SCREW, JACK~~	14
~~23~~	~~1004207~~		~~DRIVE CYLINDER~~	13
~~23~~	~~MS171433~~		~~PIN SPRING~~	12
~~46~~	~~1004206~~		~~WASHER, THRUST~~	11
2	MS16995-11		SCREW CAP SOCKET HD	10
1	1010821-1		CONNECTOR RECEPTACLE	9
16	1010620-4		PIN GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	1010382-1		CONTACT, BLADE EDGE CONN	4
154	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
154	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008530		FRAME	1

011 LIST OF MATERIALS

1007580	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN L. Krahn
CHECKED
APPROVED
APPROVED 12/4/64
APPROVED MIT
APPROVED MSC 12-4-64
DATE

FRAME ASSEMBLY
TRAY 10

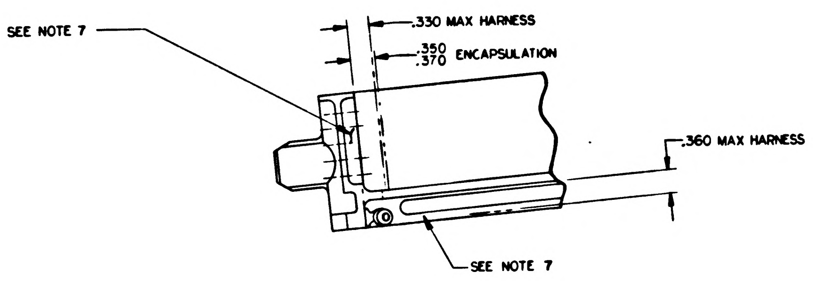
CODE IDENT NO —
SIZE E
DRAWING NO. 1007530
SCALE 1/1
SHEET 1 OF 2

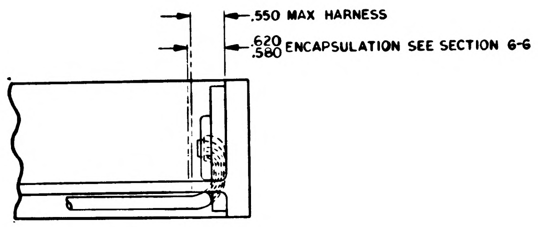
1007530 E

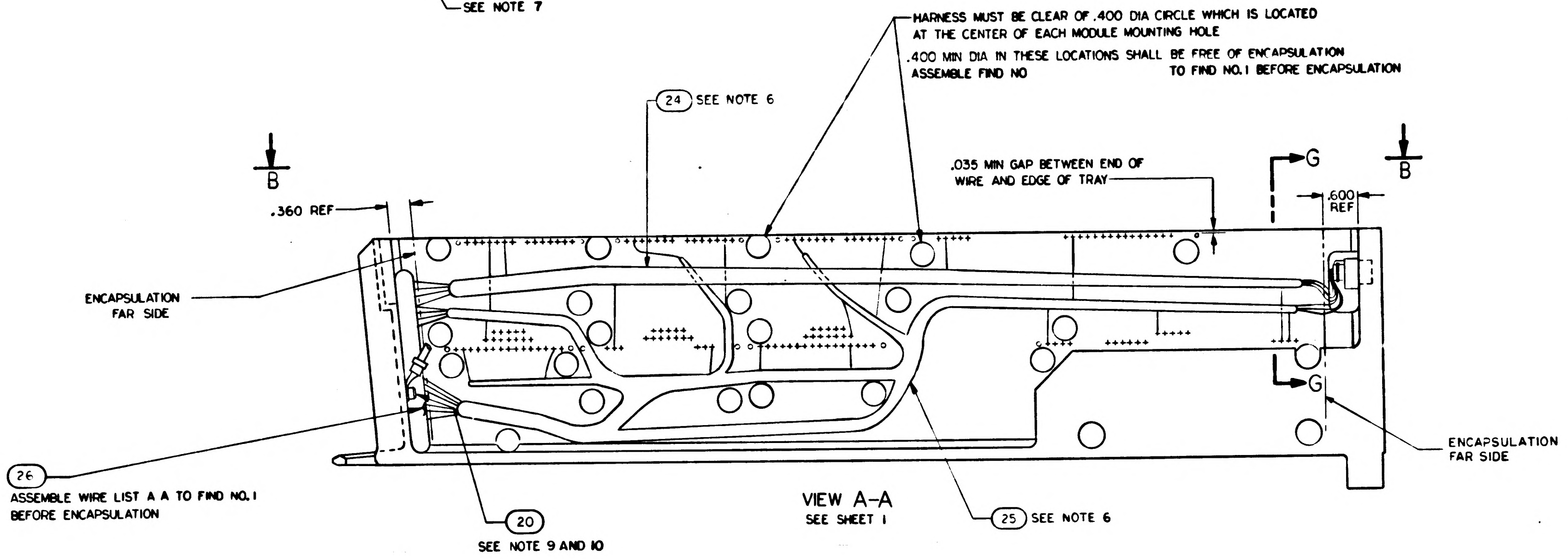
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

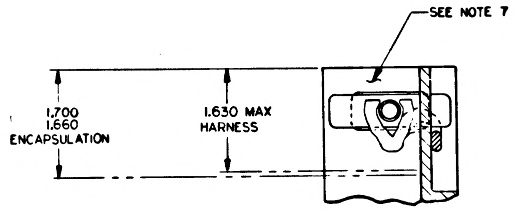
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
B		REPLACES WORD DWG REV A PER TDRR 14706			7/1/64		
C		REVISED PER TDRR 15152	LK		29 DEC 64		
D		REVISED PER TDRR 15476	TAB	RL	13 JAN 65		
E		REVISED PER TDRR 15948	JK		11 FEB 65		


SEE NOTE 7
.330 MAX HARNESS
.350
.370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 7

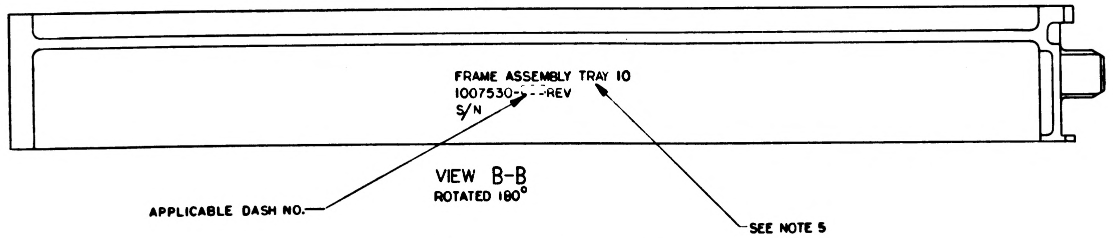

.550 MAX HARNESS
.620
.580 ENCAPSULATION SEE SECTION G-G


HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION
ASSEMBLE FIND NO
TO FIND NO. 1 BEFORE ENCAPSULATION
24 SEE NOTE 6
B
B
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
G
G
.600 REF
.360 REF
ENCAPSULATION FAR SIDE
ENCAPSULATION FAR SIDE
26
ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
20
SEE NOTE 9 AND 10
25 SEE NOTE 6

VIEW A-A
SEE SHEET 1


SEE NOTE 7
1.700
1.660
ENCAPSULATION
1.630 MAX HARNESS

PARTIAL SECTION G-G


FRAME ASSEMBLY TRAY 10
1007530-- --REV
S/N
APPLICABLE DASH NO.
SEE NOTE 5

VIEW B-B
ROTATED 180°

(MARKING VIEW AFTER ENCAPSULATION)

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007580	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS XXX ±.005 XX ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL
—
—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN 30 SEP 64
CHECKED 27 OCT 64
APPROVED
APPROVED 12/8/64
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

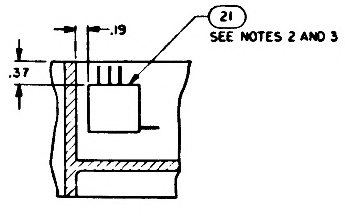
FRAME ASSEMBLY
TRAY 10

CODE IDENT NO. —
SIZE E
DRAWING NO. 1007530
SCALE 1/1
SHEET 2 OF 2

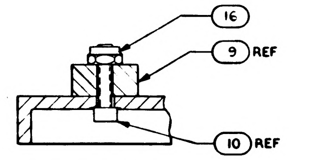
1007530 E

NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

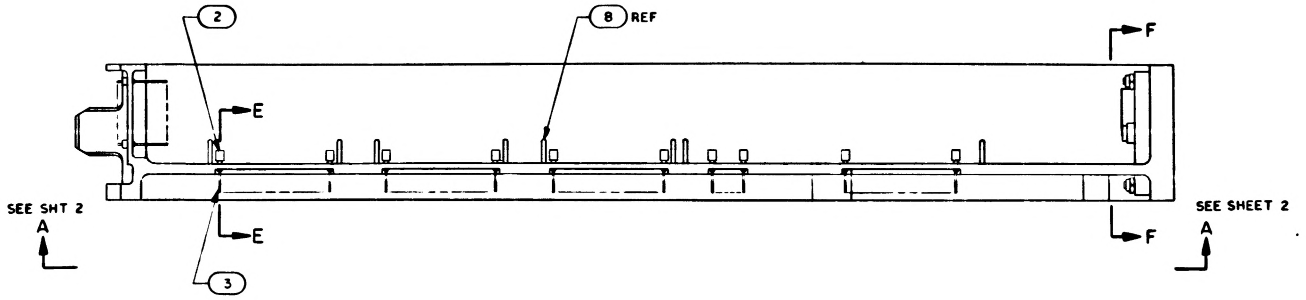
REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
Ⓜ B		REPLACES WORD DWG REV A PER TDRR 14706	[illegible]		[illegible] /64	[illegible]
C		REVISED PER TDRR 15152	LK	[illegible]	24 DEC 64	
D		REVISED PER TDRR 15476	[illegible]	[illegible]	18 JAN 65	
Ⓜ E		REVISED PER TDRR 15948	J.K	CW	11 FEB 65	
F		REVISED PER TDRR 17613	RJJ	[illegible]	29 MAR 65	

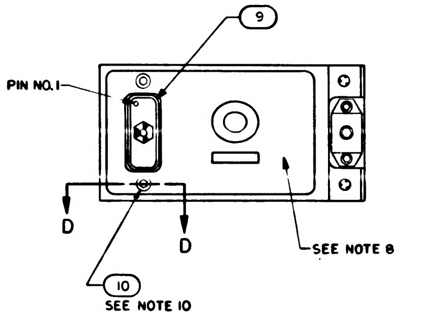


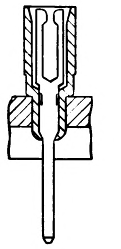
PARTIAL SECTION F-F



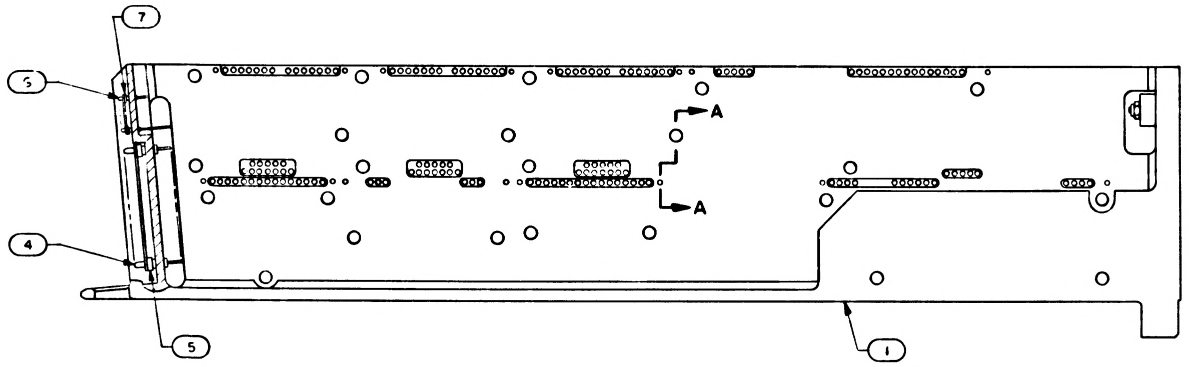
PARTIAL SECTION D-D
SCALE 2/1

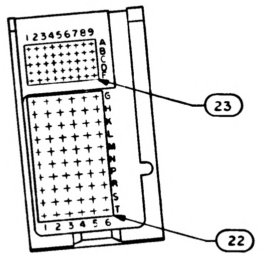


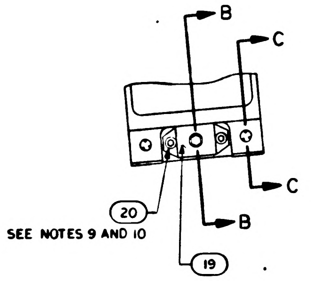




PARTIAL SECTION E-E
247 PLACES
NO SCALE



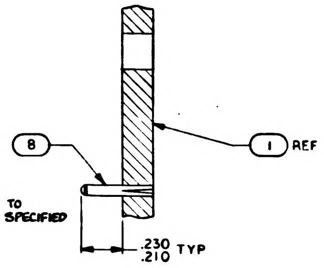




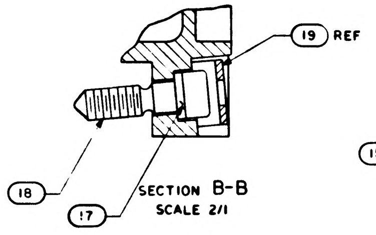
Ⓑ REPLACES WORD DWG REV A

NOTES:

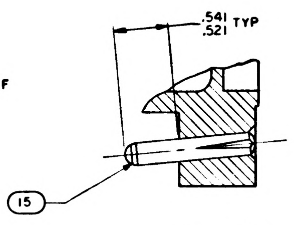
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 21 TO FIND NO.1 PER ND1002004 TYPE I
3. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 21
4. ASSEMBLE FIND NO. 2,3,4,5,6 AND 7 PER ND1002136
5. MARK .140/.100 HIGH BLACK CHARACTERS PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN
6. BOND FIND NO. 24, 25 & 26 TO FIND NO 1 PER ND1002004 TYPE I AS NECESSARY
7. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) .010 ABOVE TO .010 BELOW PERIPHERAL SURFACES OF THE TRAY FRAME UNLESS OTHERWISE SPECIFIED
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. BOND FIND NO. 22 TO FIND NO. 5 & FIND NO. 23 TO FIND NO.7 PER ND 1002237



PARTIAL SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
2 PLACES
SCALE 2/1

TERMINATION CHART FOR FIND NO. 21 REF	
FROM	TO
E8	45A10J1-24
E9	45A10J1-17
E10	45A10J1-32
E11	45A10J1-2
E12	45A10J1-10
E13	45A10J1-11
E15	45A10J1-18
E17	45A10J1-19

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009570		WIRING DIAGRAM	REF
1	1008637		WIRE LIST AA	26
1	1008635		WIRING HARNESS B	25
1	1008634		WIRING HARNESS A	24
1	1008553		GASKET CONNECTOR	23
1	1008552		GASKET CONNECTOR	22
1	1007582		BUFFER RESISTORS MODULE ASSY	21
3	MS16995-10		SCREW, CAP, SOCKET HD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
~~23~~	~~1008172~~		~~SCREW, JACK~~	14
~~23~~	~~1004207~~		~~DRIVE CYLINDER~~	13
~~23~~	~~MS171433~~		~~PIN SPRING~~	12
~~46~~	~~100420~~		~~WASHER, THRUST~~	11
2	MS16995-11		SCREW CAP SOCKET HD	10
1	1010821-1		CONNECTOR RECEPTACLE	9
16	1010620-4		PIN GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	1010382-1		CONTACT, BLADE EDGE CONN	4
154	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
154	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008530		FRAME	1

011 LIST OF MATERIALS

1007580	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN L Krahn
CHECKED
APPROVED
APPROVED [illegible] 12/4/64
APPROVED MIT [illegible]
APPROVED MSC [illegible] 12/64
DATE

FRAME ASSEMBLY TRAY 10

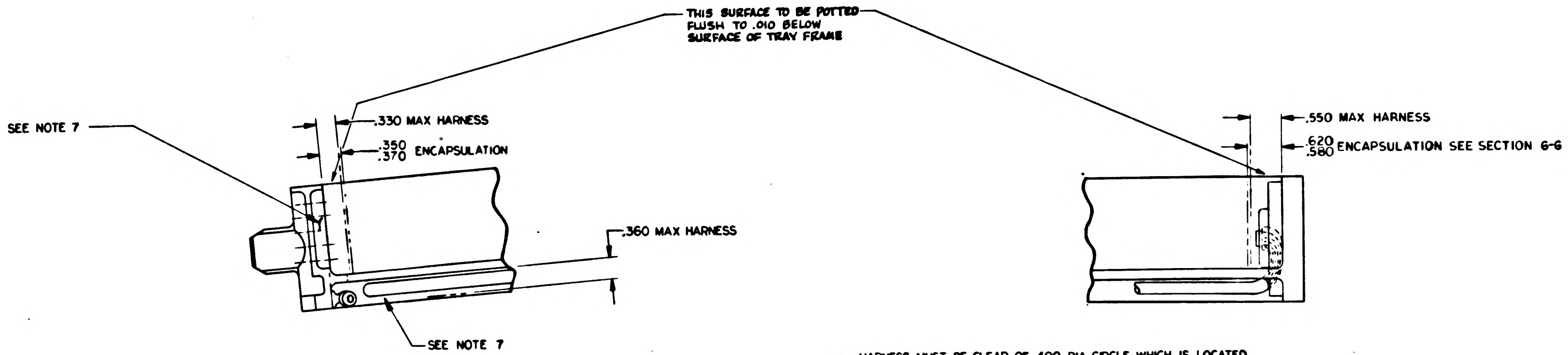
CODE IDENT NO	SIZE	DRAWING NO.
—	E	1007530
SCALE 1/1	—	SHEET 1 OF 2

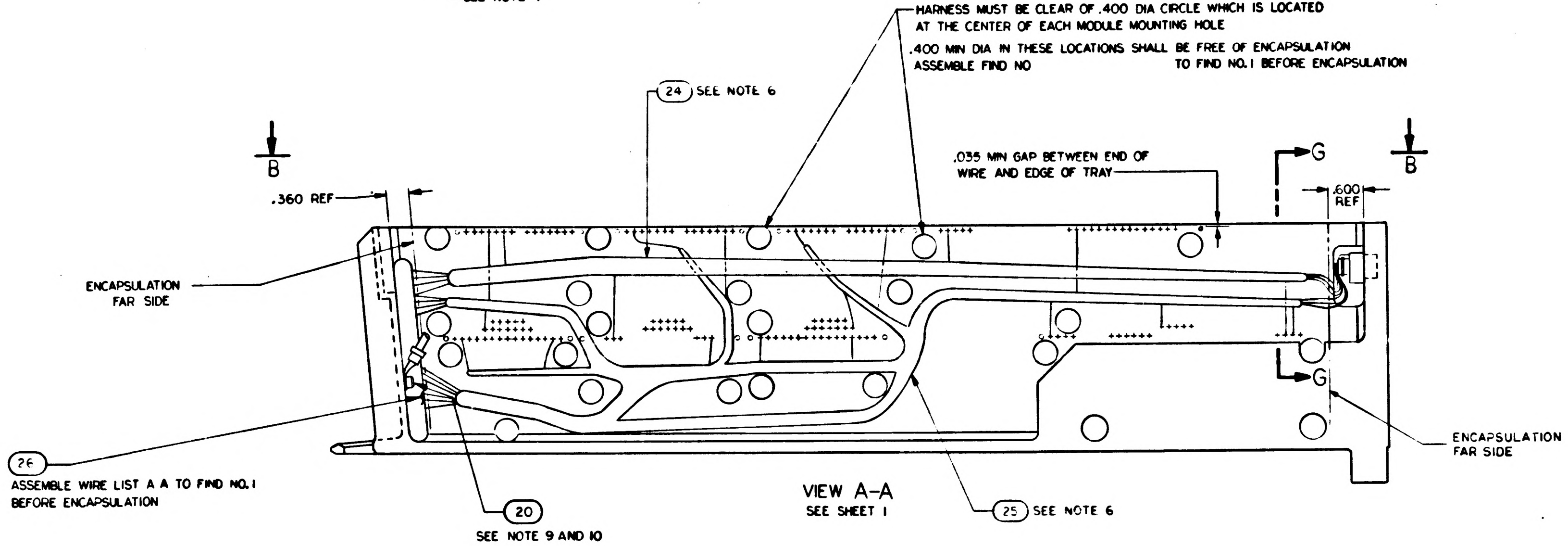
1007530 F

NOTICE WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

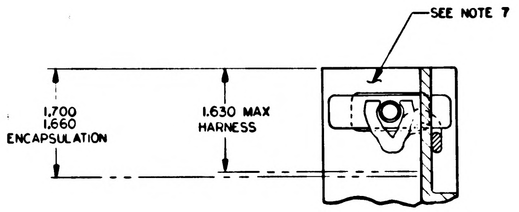
REVISIONS

	SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
Ⓜ	B		REPLACES WORD DWG REV A PER TDRR 14706					
	C		REVISED PER TDRR 15152	LK		29 DEC 64		
	D		REVISED PER TDRR 15476			JAN 65		
Ⓜ	E		REVISED PER TDRR 15948	JK		11 FEB 65		
	F		REVISE PER TDRR 17613	RJJ				

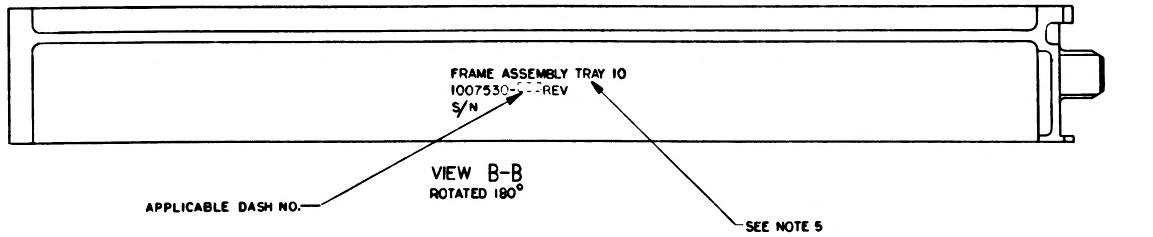

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 7
.330 MAX HARNESS
.350 .370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 7
.550 MAX HARNESS
.620 .580 ENCAPSULATION SEE SECTION G-G


HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION
ASSEMBLE FIND NO 24 TO FIND NO. 1 BEFORE ENCAPSULATION
24 SEE NOTE 6
B
B
.360 REF
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
G
G
.600 REF
ENCAPSULATION FAR SIDE
ENCAPSULATION FAR SIDE
26
ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
20
SEE NOTE 9 AND 10
25 SEE NOTE 6

VIEW A-A
SEE SHEET 1


SEE NOTE 7
1.700 1.660 ENCAPSULATION
1.630 MAX HARNESS

PARTIAL SECTION G-G


FRAME ASSEMBLY TRAY 10
1007530-___REV
S/N
APPLICABLE DASH NO.
SEE NOTE 5

VIEW B-B
ROTATED 180°

(MARKING VIEW AFTER ENCAPSULATION)

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007580	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS XXX ±.005 XX ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN
CHECKED
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

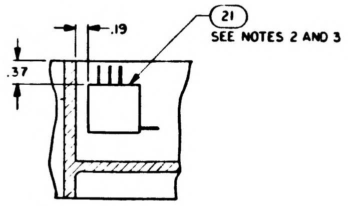
FRAME ASSEMBLY
TRAY 10

CODE IDENT NO. —
SIZE E
DRAWING NO. 1007530
SCALE 1/1
SHEET 2 OF 2

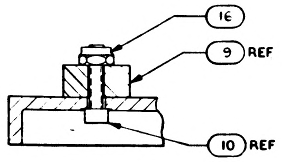
1007530 F

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

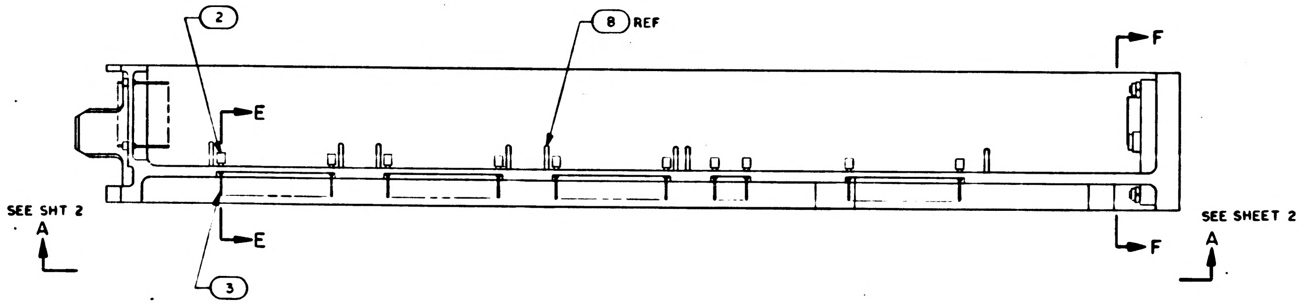
REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706			9/8/64	
C		REVISED PER TDRR 15152	JK		29 DEC 64	
D		REVISED PER TDRR 15476			JAN 65	
E		REVISED PER TDRR 15948	JK			
F		REVISED PER TDRR 17613	RJJ		29 MAR	
G		REVISED PER TDRR 18690	WD	EF	4 MAY 65	

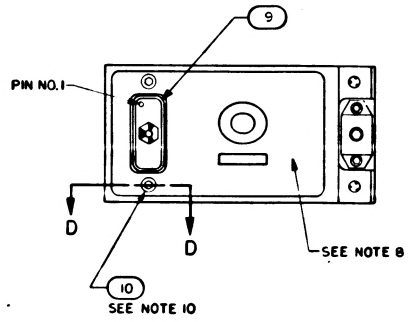


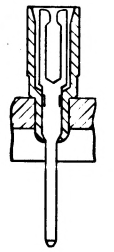
PARTIAL SECTION F-F



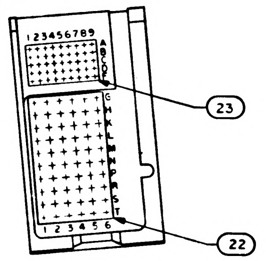
PARTIAL SECTION D-D
SCALE 2/1

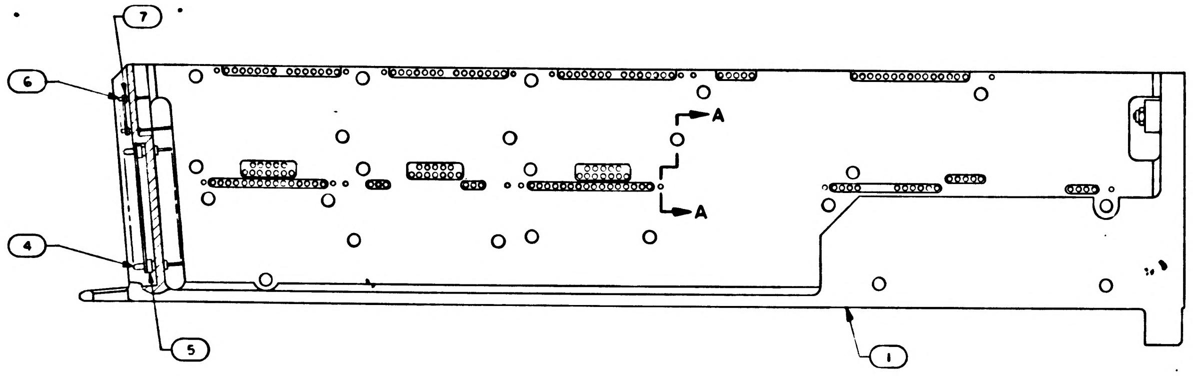


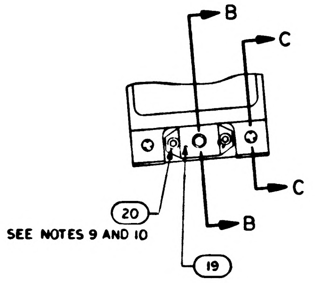




PARTIAL SECTION E-E
247 PLACES
NO SCALE

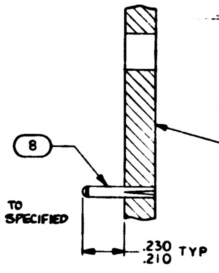




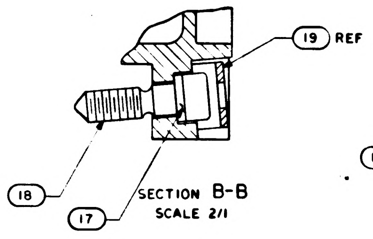


Ⓑ REPLACES WORD DWG REV A

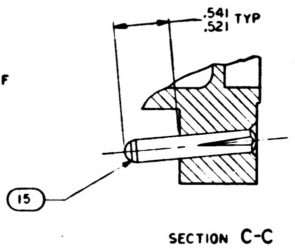
NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 21 TO FIND NO. 1 PER ND1002004 TYPE I
3. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 21
4. ASSEMBLE FIND NO. 2,3,4,5,6 AND 7 PER ND1002136
5. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
6. BOND FIND NO. 24, 25 & 26 TO FIND NO. 1 PER ND1002004 TYPE I AS NECESSARY
7. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) .010 ABOVE TO .010 BELOW PERIPHERAL SURFACES OF THE TRAY FRAME UNLESS OTHERWISE SPECIFIED
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. BOND FIND NO. 22 TO FIND NO. 5 & FIND NO. 23 TO FIND NO. 7 PER ND 1002237



PARTIAL SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
2 PLACES
SCALE 2/1

TERMINATION CHART FOR FIND NO. 21 REF	
FROM	TO
E8	45A10J1-24
E9	45A10J1-17
E10	45A10J1-32
E11	45A10J1-2
E12	45A10J1-10
E13	45A10J1-11
E15	45A10J1-18
E17	45A10J1-19

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO
⨯	1009570		WIRING DIAGRAM	REF
1	1008637		WIRE LIST AA	26
1	1008635		WIRING HARNESS B	25
1	1008634		WIRING HARNESS A	24
1	1008553		GASKET CONNECTOR	23
1	1008552		GASKET CONNECTOR	22
1	1007582		BUFFER RESISTORS MODULE ASSY	21
3	MS16995-10		SCREW, CAP. SOCKET HD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
~~23~~	~~1008172~~		~~SCREW, JACK~~	14
~~23~~	~~1004207~~		~~DRIVE CYLINDER~~	13
~~23~~	~~MS171433~~		~~PIN SPRING~~	12
~~46~~	~~1004208~~		~~WASHER, THRUST~~	11
2	MS16995-11		SCREW CAP SOCKET HD	10
1	1010821-1		CONNECTOR RECEPTACLE	9
16	MS 16556-604		PIN GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	1010382-1		CONTACT, BLADE EDGE CONN	4
154	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
154	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008530		FRAME	1
011	LIST OF MATERIALS			

1007580	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN L. Krahn
CHECKED
APPROVED
APPROVED 12/4/64
APPROVED MIT 3 Dec 64
APPROVED MSC 12-4-64
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 10

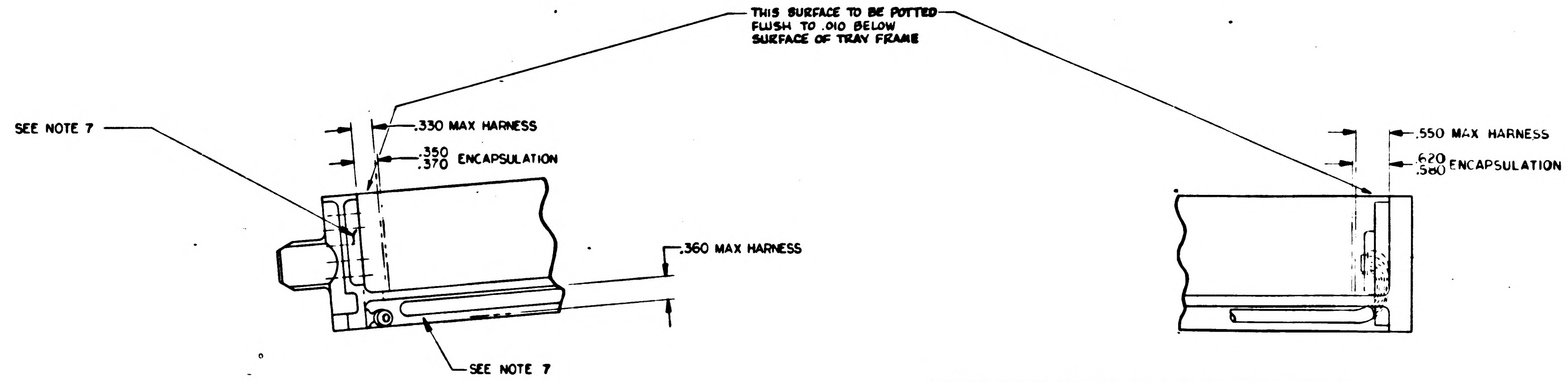
CODE IDENT NO —
SIZE E
DRAWING NO. 1007530
SCALE 1/1
SHEET 1 OF 2

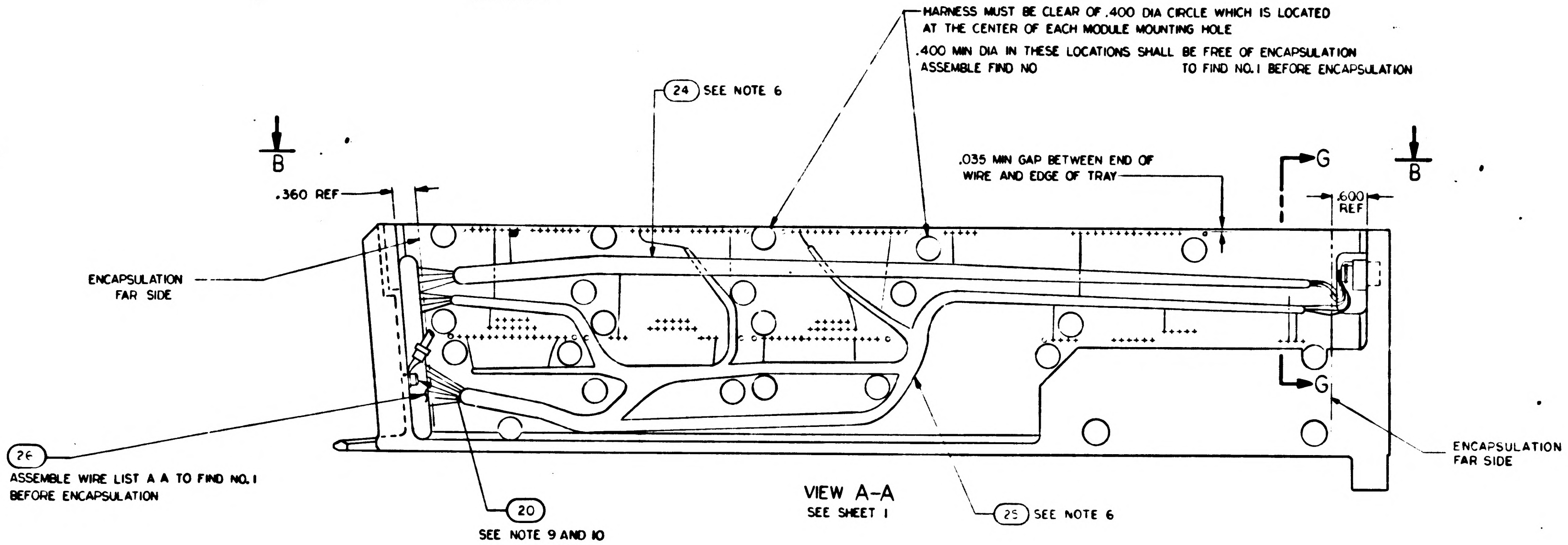
1007530 G

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

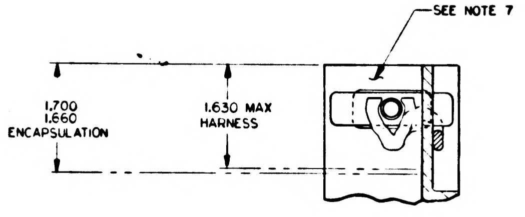
REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
B		REPLACES WORD DWG REV A PER TDRR 14706	[illegible]		3/64		WK
C		REVISED PER TDRR 5152	LK	[illegible]	29 DEC 64		WK
D		REVISED PER TDRR 15476	[illegible]	[illegible]	[illegible]		WK
E		REVISED PER TDRR 15948	J.K	[illegible]	11 FEB 65		
F		REVISE PER TDRR 17615	RJJ	[illegible]	[illegible]		
G		REVISED PER TDRR 18690	[illegible]	EF	4 MAY 65		

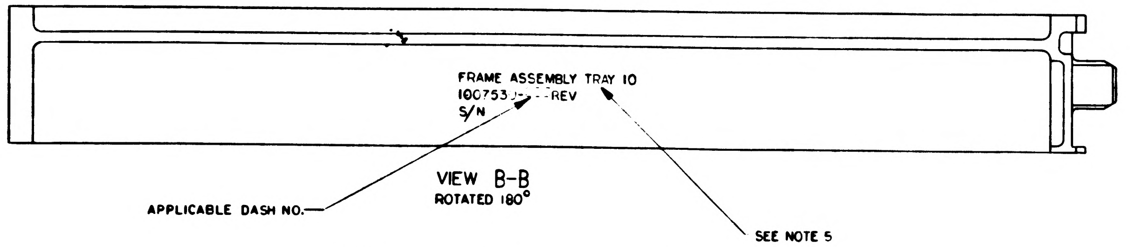

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 7
.330 MAX HARNESS
.390
.370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 7
.550 MAX HARNESS
.620
.580 ENCAPSULATION SEE SECTION G-G


HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION
ASSEMBLE FIND NO TO FIND NO.1 BEFORE ENCAPSULATION
24 SEE NOTE 6
B
B
.360 REF
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
G
G
.600 REF
ENCAPSULATION FAR SIDE
26
ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
20
SEE NOTE 9 AND 10
25 SEE NOTE 6
ENCAPSULATION FAR SIDE

VIEW A-A
SEE SHEET 1


SEE NOTE 7
1.700
1.660
ENCAPSULATION
1.630 MAX HARNESS

PARTIAL SECTION G-G


FRAME ASSEMBLY TRAY 10
100753- REV
S/N
APPLICABLE DASH NO.
SEE NOTE 5

VIEW B-B
ROTATED 180°

(MARKING VIEW AFTER ENCAPSULATION)

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
1007580	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± —— DECIMALS .XXX ±.005 .XX ±.02 ANGLES ± ——
DO NOT SCALE THIS DRAWING

MATERIAL ——

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN [illegible]
CHECKED [illegible]
APPROVED
APPROVED [illegible]
APPROVED MIT [illegible]
APPROVED MSC [illegible]
DATE

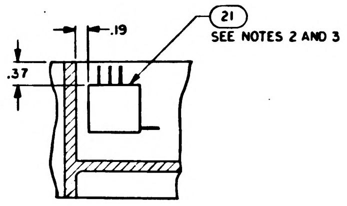
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 10

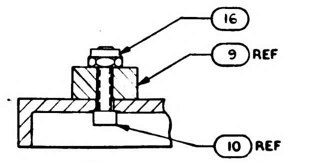
CODE IDENT NO ——
SIZE E
DRAWING NO. 1007530
SCALE 1/1
SHEET 2 OF 2

NOTICE WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

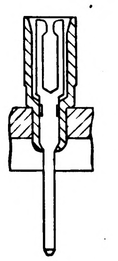
REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706	4B		12/1/64	WK
C		REVISED PER TDRR 15152	EK	A.W.L.	29 DEC 64	WK
D		REVISED PER TDRR 15476		RL	15 JAN 65	WK
E		REVISED PER TDRR 15948	J.K	AJW	11 FEB 65	
F		REVISED PER TDRR 17613	RJJ	WD	29 MAR 65	
G		REVISED PER TDRR 18690	WD	EF	4 MAY 65	
H		REVISED PER TDRR 18691	JJJ	EF	6 MAY 65	



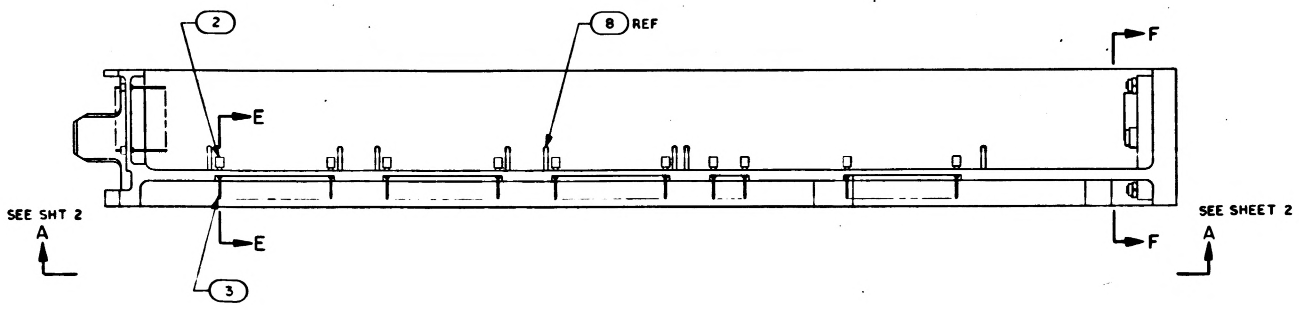
PARTIAL SECTION F-F

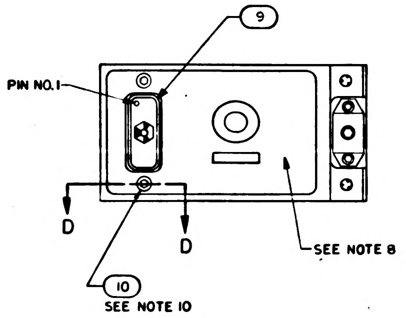


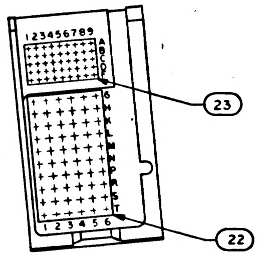
PARTIAL SECTION D-D
SCALE 2/1

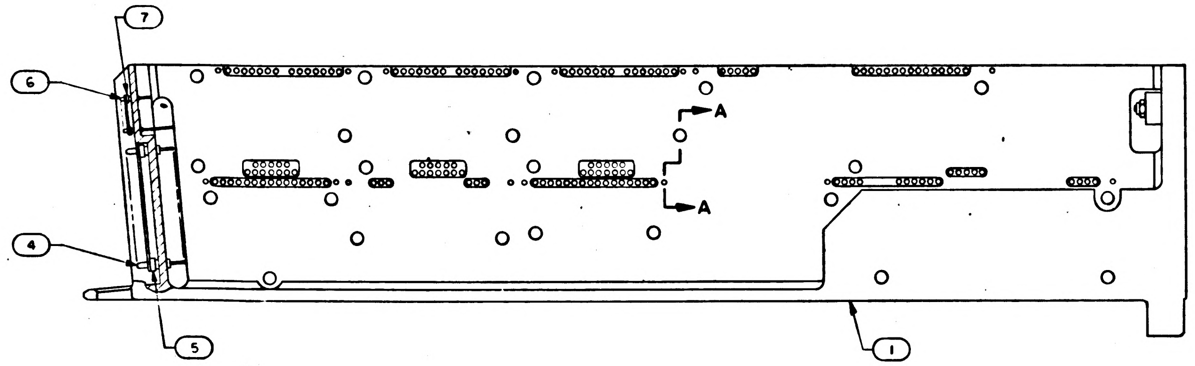


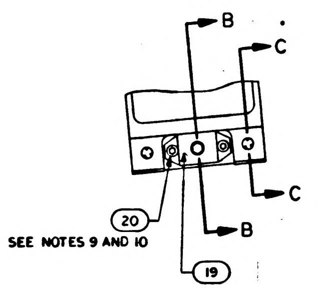
PARTIAL SECTION E-E
247 PLACES
NO SCALE







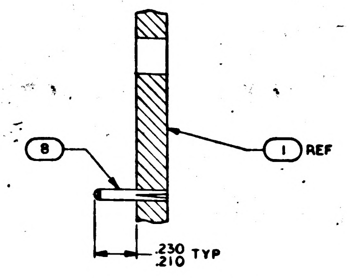




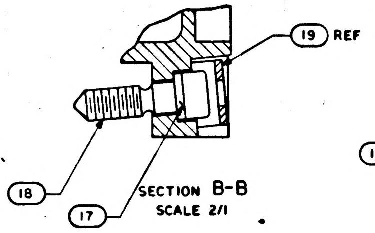
Ⓑ REPLACES WORD DWG REV A

NOTES:

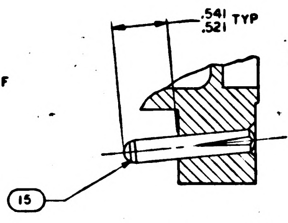
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 21 TO FIND NO. 1 PER ND 1002004 TYPE 1
3. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 21
4. ASSEMBLE FIND NO. 2, 3, 4, 5, 6 AND 7 PER ND 1002136
5. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
6. BOND FIND NO. 24, 25 AND 26 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
7. ENCAPSULATE PER ND 1002290, SECTION 3.6, CURE CYCLE A OR B USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL BUT NOT TO EXCEED .100 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. BOND FIND NO. 22 TO FIND NO. 5 AND FIND NO. 23 TO FIND NO. 7 PER ND 1002237
13. COAT 1010822 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I



PARTIAL SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
2 PLACES
SCALE 2/1

TERMINATION CHART FOR FIND NO. 21 REF	
FROM	TO
E8	45A10J1-24
E9	45A10J1-17
E10	45A10J1-32
E11	45A10J1-2
E12	45A10J1-10
E13	45A10J1-11
E15	45A10J1-18
E17	45A10J1-19

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1009570	WIRING DIAGRAM		REF
1	1008637	WIRE LIST AA		26
1	1008635	WIRING HARNESS B		25
1	1008634	WIRING HARNESS A		24
1	1008553	GASKET CONNECTOR		23
1	1008552	GASKET CONNECTOR		22
1	1007582	BUFFER RESISTORS MODULE ASSY		21
3	MS16995-10	SCREW, CAP, SOCKET HD		20
1	1001317	RETAINER, JACK SCREW		19
1	1008098	SCREW, SOCKET HD		18
1	1008099-2	WASHER		17
2	MS21045C04	NUT, SELF-LOCKING HEX		16
2	1010620-5	PIN, GUIDE		15
~~23~~	~~1008172~~	~~SCREW, JACK~~		14
~~23~~	~~1004207~~	~~DRIVE CYLINDER~~		13
~~23~~	~~MS171433~~	~~PIN SPRING~~		12
~~46~~	~~1004208~~	~~WASHER, THRUST~~		11
2	MS16995-11	SCREW CAP SOCKET HD		10
1	1010821-1	CONNECTOR RECEPTACLE		9
16	MS16556-604	PIN GUIDE		8
45	1006775	INSULATOR, WRAPOST, MALE MINAT		7
45	1006782-2	CONTACT, WRAPOST, MALE MINAT		6
60	1010383-1	INSULATOR, WRAPOST, MALE		5
60	1010382-1	CONTACT, BLADE EDGE CONN		4
154	1006781-2	CONTACT, WRAPOST, FEMALE MINAT		3
154	1006774	INSULATOR, WRAPOST, FEMALE MINAT		2
1	1008530	FRAME		1
011	LIST OF MATERIALS			

1007530 H

NEXT ASSY	USED ON
1007580	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN L. Krahn
CHECKED
APPROVED
APPROVED 12/4/64
APPROVED MIT 12/4/64
APPROVED MSC 12-4-64
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

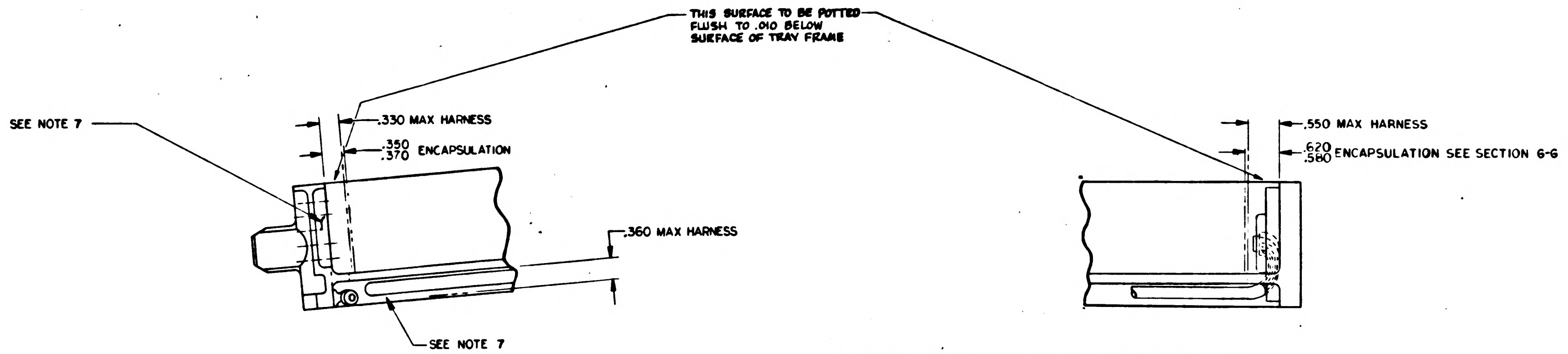
FRAME ASSEMBLY
TRAY 10

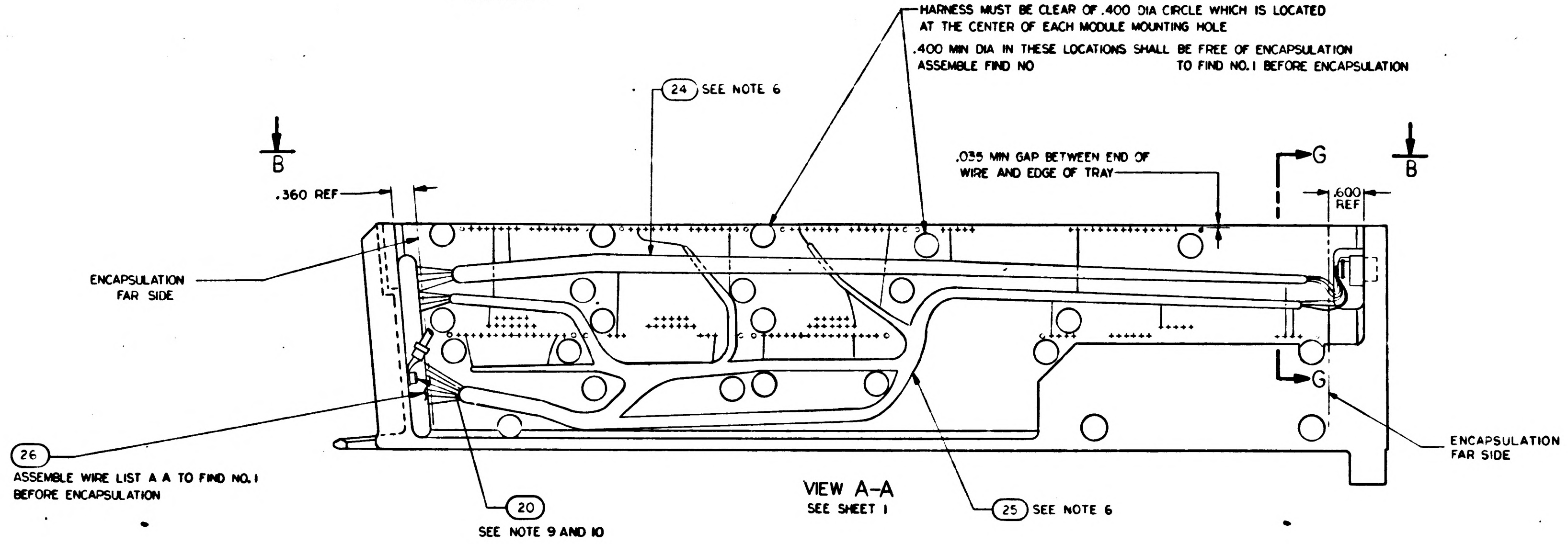
CODE IDENT NO. 80230
SIZE E
DRAWING NO. 1007530
SCALE 1/1
SHEET 1 OF 2

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

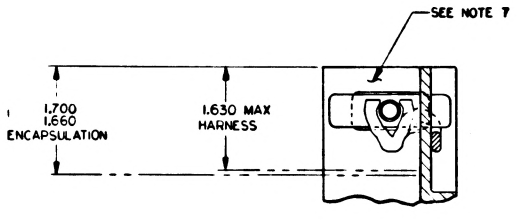
REVISIONS

	SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
Ⓜ	B		REPLACES WORD DWG REV 'A' PER TDRR 14706			3/64		WK
	C		REVISED PER TDRR 15152	LK		29 DEC 64		WK
	D		REVISED PER TDRR 15476	TAB	RL	13 JAN 65		WK
Ⓜ	E		REVISED PER TDRR 15948	J.K		11 FEB 65		
Ⓜ	F		REVISE PER TDRR 17613	RJJ				
	G		REVISED PER TDRR 18690		EF	4 MAY 65		
	H		REVISED PER TDRR 18691	JJJ	EF	6 MAY 65		

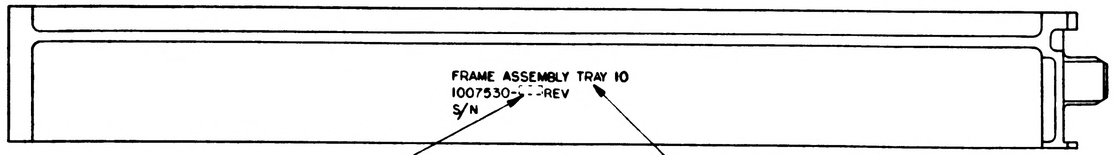

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 7
.330 MAX HARNESS
.350
.370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 7
.550 MAX HARNESS
.620
.580 ENCAPSULATION SEE SECTION G-G


HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION
24 SEE NOTE 6
ASSEMBLE FIND NO TO FIND NO. 1 BEFORE ENCAPSULATION
B
B
.360 REF
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
G
G
.600 REF
ENCAPSULATION FAR SIDE
ENCAPSULATION FAR SIDE
26
ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
20
SEE NOTE 9 AND 10
25 SEE NOTE 6

VIEW A-A
SEE SHEET 1


SEE NOTE 7
1.700
1.660
ENCAPSULATION
1.630 MAX
HARNESS

PARTIAL SECTION G-G


FRAME ASSEMBLY TRAY 10
1007530-- -REV
S/N
APPLICABLE DASH NO.
SEE NOTE 5

VIEW B-B
ROTATED 180°

(MARKING VIEW AFTER ENCAPSULATION)

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007580	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS .XXX ± .005 .XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN L. Krahn 30 SEP 64
CHECKED 27 OCT 64
APPROVED
APPROVED 12/4/64
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 10

CODE IDENT NO.	SIZE	DRAWING NO.
80230	E	1007530

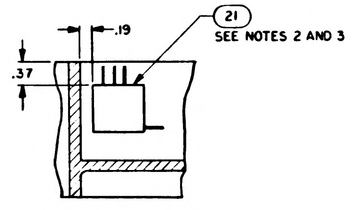
SCALE 1/1 SHEET 2 OF 2

1007530 H

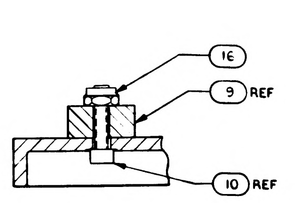
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

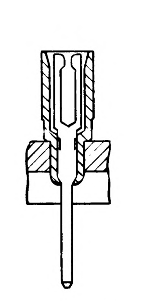
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706				
C		REVISED PER TDRR 15152	JK		29 DEC 64	
D		REVISED PER TDRR 15476			18 JAN 65	
E		REVISED PER TDRR 15948	JK		11 FEB 65	
F		REVISED PER TDRR 17613	RJJ		29 MAR 65	
G		REVISED PER TDRR 18690		EF	4 MAY 65	
H		REVISED PER TDRR 18691		EF	6 MAY 65	
J		REVISED PER TDRR 18695	A.N.		11 MAY 65	



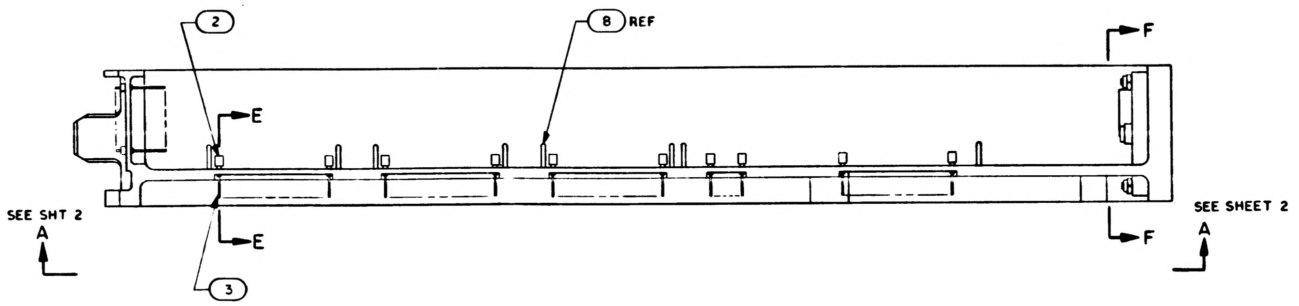
PARTIAL SECTION F-F

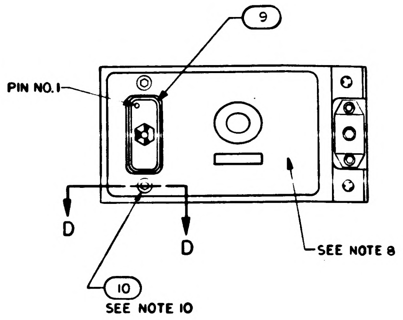


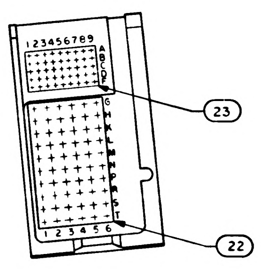
PARTIAL SECTION D-D
SCALE 2/1

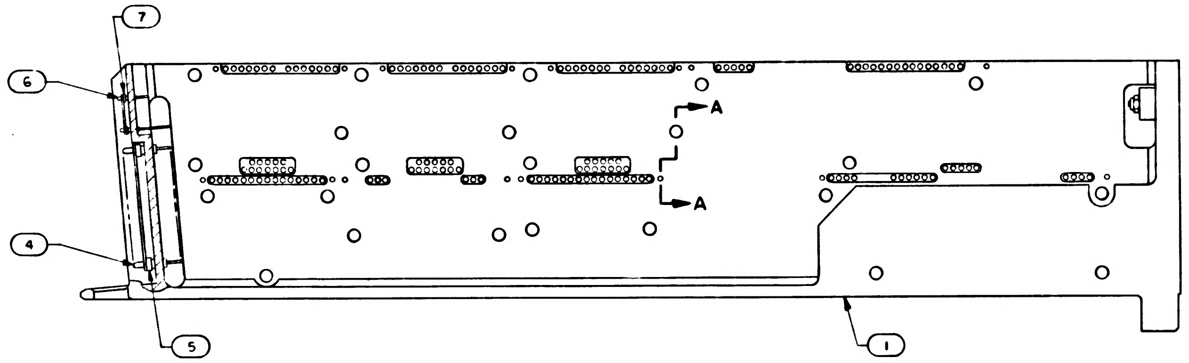


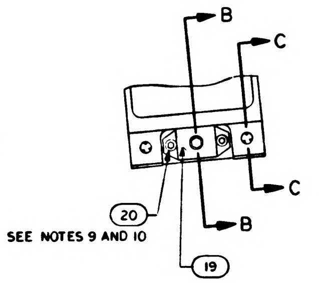
PARTIAL SECTION E-E
247 PLACES
NO SCALE







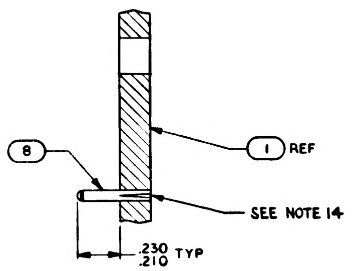




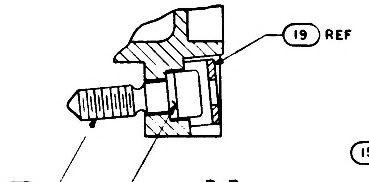
(B) REPLACES WORD DWG REV A

NOTES:

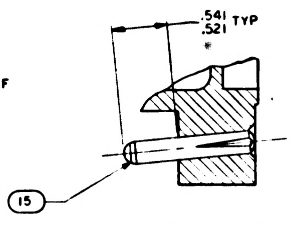
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 21 TO FIND NO. 1 PER ND 1002004 TYPE 1
3. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 21
4. ASSEMBLE FIND NO. 2, 3, 4, 5, 6 AND 7 PER ND 1002136
5. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
6. BOND FIND NO. 24, 25 AND 26 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
7. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A OR B USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. BOND FIND NO. 22 TO FIND NO. 5 AND FIND NO. 23 TO FIND NO. 7 PER ND 1002237
13. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I
14. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.



PARTIAL SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
2 PLACES
SCALE 2/1

TERMINATION CHART FOR FIND NO. 21 REF	
FROM	TO
E8	45A10J1-24
E9	45A10J1-17
E10	45A10J1-32
E11	45A10J1-2
E12	45A10J1-10
E13	45A10J1-11
E15	45A10J1-18
E17	45A10J1-19

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1009570		WIRING DIAGRAM	REF
1	1008637		WIRE LIST AA	26
1	1008635		WIRING HARNESS B	25
1	1008634		WIRING HARNESS A	24
1	1008553		GASKET CONNECTOR	23
1	1008552		GASKET CONNECTOR	22
1	1007582		BUFFER RESISTORS MODULE ASSY	21
3	MS16995-10		SCREW, CAP, SOCKET HD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
~~23~~	~~1008172~~		~~SCREW, JACK~~	14
~~23~~	~~1004207~~		~~DRIVE CYLINDER~~	13
~~23~~	~~MS171433~~		~~PIN SPRING~~	12
~~46~~	~~1004206~~		~~WASHER, THRUST~~	11
2	MS16995-11		SCREW CAP SOCKET HD	10
1	1010821-1		CONNECTOR RECEPTACLE	9
16	MS 16556-604		PIN GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	1010382-1		CONTACT, BLADE EDGE CONN	4
154	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
154	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008530		FRAME	1

011 LIST OF MATERIALS

1007580	
NEXT ASSY	USED ON
APPLICATION	

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CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
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MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN L. Krahn
CHECKED
APPROVED
APPROVED 12/4/64
APPROVED MIT
APPROVED MSC 12-1-64
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 10

CODE IDENT NO 80230
SIZE E
DRAWING NO. 1007530
SCALE 1/1
SHEET 1 OF 2

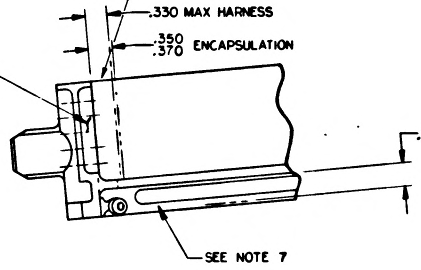
1007530 J

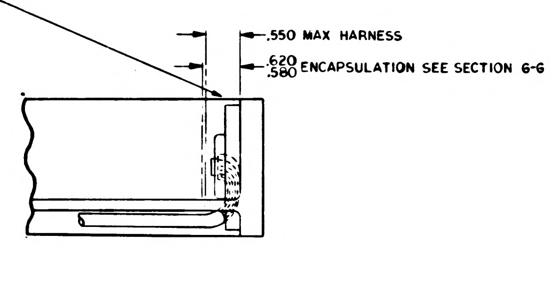
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706			3/ /64	UK
C		REVISED PER TDRR 15152	LK		29 DEC 64	
D		REVISED PER TDRR 15476		RL	13 JAN 65	
E		REVISED PER TDRR 15948	JK		11 FEB 65	
F		REVISE PER TDRR 17613	RJJ			
G		REVISED PER TDRR 18690		EF	65	
H		REVISED PER TDRR 18691	JJJ	EF	6 MAY 65	
J		REVISED PER TDRR 18695	A.N.		1 MAY 65	

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME

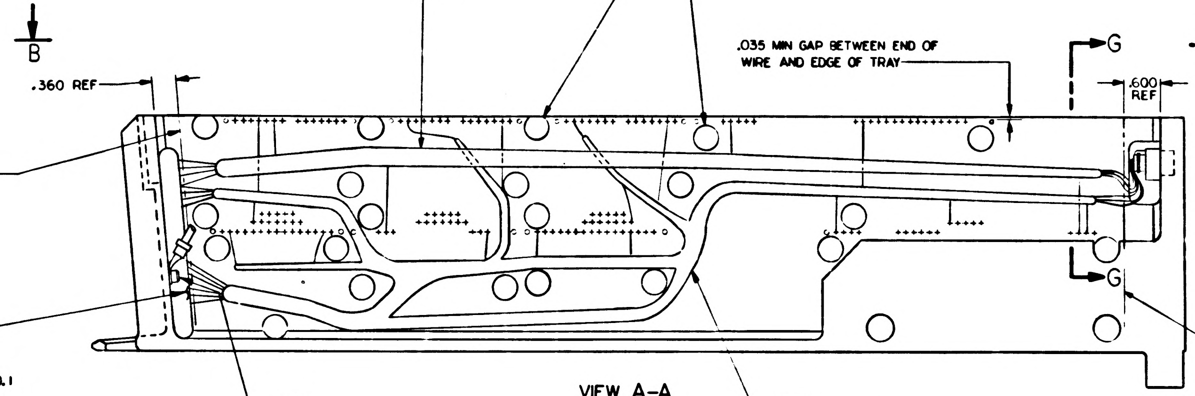

SEE NOTE 7
.330 MAX HARNESS
.350
.370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 7


.550 MAX HARNESS
.620
.580 ENCAPSULATION SEE SECTION G-G

HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE

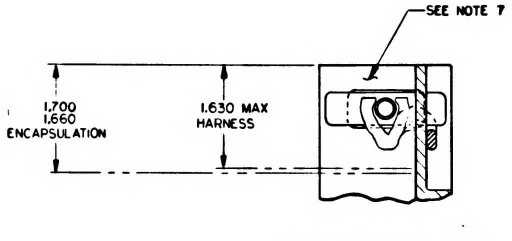
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION

ASSEMBLE FIND NO (24) TO FIND NO. 1 BEFORE ENCAPSULATION

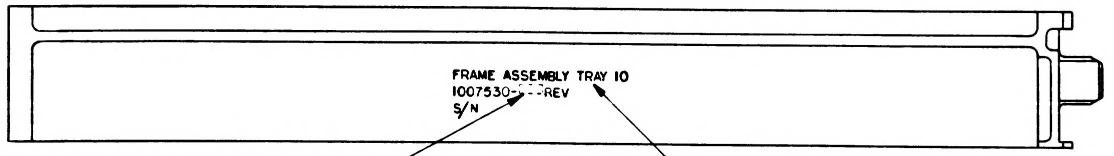

24 SEE NOTE 6
B
.360 REF
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
G
B
.600 REF
ENCAPSULATION FAR SIDE
G
ENCAPSULATION FAR SIDE
20
SEE NOTE 9 AND 10
25 SEE NOTE 6

(26) ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION

VIEW A-A
SEE SHEET 1


SEE NOTE 7
1.700
1.660
ENCAPSULATION
1.630 MAX HARNESS

PARTIAL SECTION G-G


FRAME ASSEMBLY TRAY 10
1007530- - -REV
S/N
APPLICABLE DASH NO.
SEE NOTE 5

VIEW B-B
ROTATED 180°

(MARKING VIEW AFTER ENCAPSULATION)

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007580	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS .XXX ±.005 .XX ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

		DATE
DRAWN		30 SEP 64
CHECKED		27 OCT 64
APPROVED		
APPROVED		12/8/64
APPROVED MIT		Dec 64
APPROVED MSC		12-7-64

FRAME ASSEMBLY
TRAY 10

CODE IDENT NO.	SIZE	DRAWING NO.
80230	E	100753

SCALE 1/1 SHEET 2 OF 2

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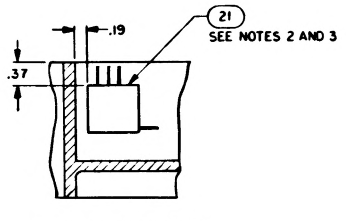
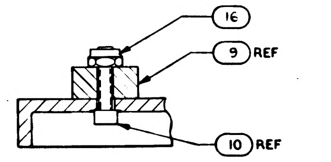
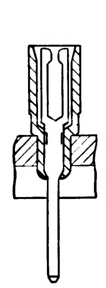
REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
Ⓜ B		REPLACES WORD DWG REV A PER TDRR 1470[illegible]	[illegible]		[illegible]	
C		REVISED PER TDRR 15152	JK	[illegible]	24 DEC 64	
D		REVISED PER TDRR 15476	[illegible]	[illegible]	18 JAN 65	
Ⓜ E		REVISED PER TDRR 15918	J.K	[illegible]	11 FEB 65	
F		REVISED PER TDRR 17613	RJJ	[illegible]	29 MAR 65	
G		REVISED PER TDRR 18[illegible]	[illegible]	EF	4 MAY 65	
H		REVISED PER TDRR 1[illegible]91	JJJ	EF	6 MAY 65	
Ⓜ J		REVISED PER TDRR 18[illegible]	[illegible]	[illegible]	11 MAY 65	
K		REVISED PER TDRR 20.4[illegible]	RJ	JAC	[illegible] 65	



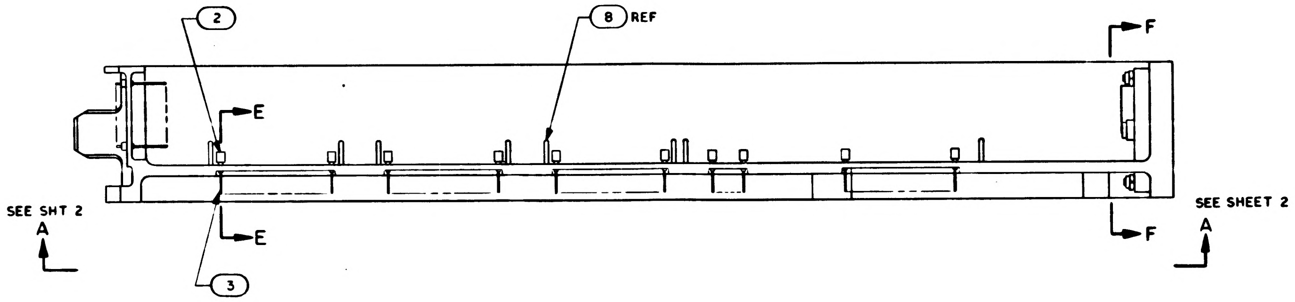
PARTIAL SECTION F-F

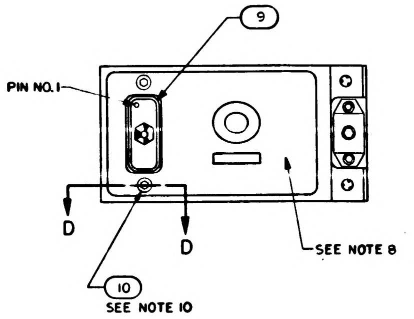


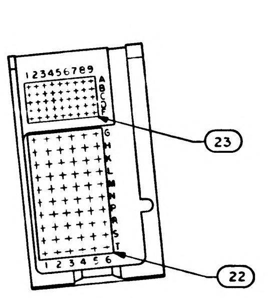
PARTIAL SECTION D-D
SCALE 2/1

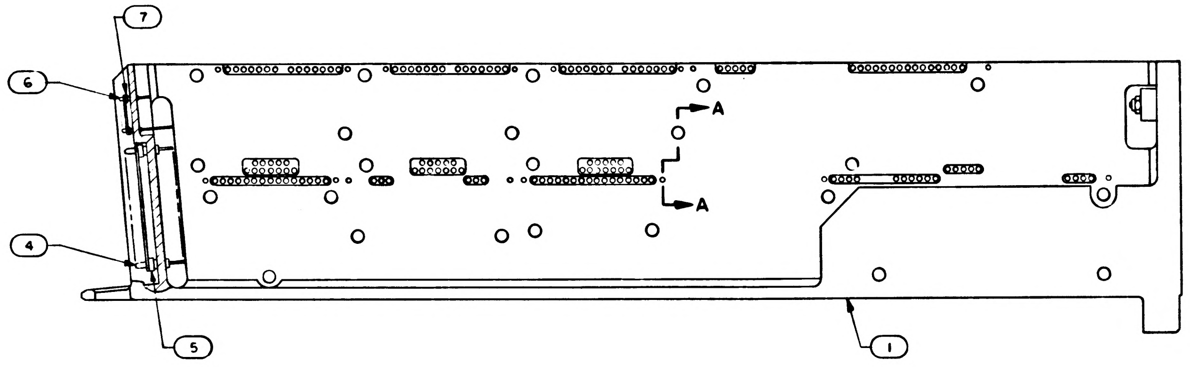


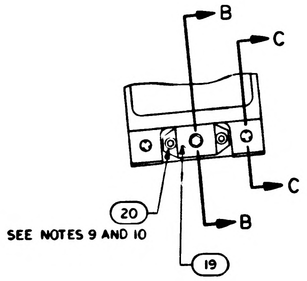
PARTIAL SECTION E-E
247 PLACES
NO SCALE







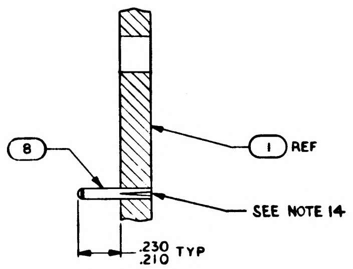




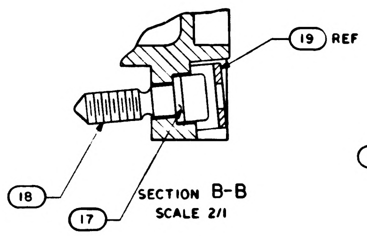
Ⓑ REPLACES WORD DWG REV A

NOTES:

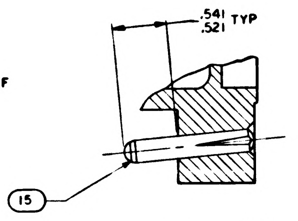
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 21 TO FIND NO. 1 PER ND 1002004 TYPE 1
3. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 21
4. ASSEMBLE FIND NO. 2, 3, 4, 5, 6 AND 7 PER ND 1002136
5. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
6. BOND FIND NO. 24, 25 AND 26 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
7. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A OR B USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. BOND FIND NO. 22 TO FIND NO. 5 AND FIND NO. 23 TO FIND NO. 7 PER ND 1002237
13. COAT 1010622 OR 1010621 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I
14. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.
15. PROCURE PER FS 1007150.



PARTIAL SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
2 PLACES
SCALE 2/1

TERMINATION CHART FOR FIND NO. 21 REF	
FROM	TO
E8	45A10J1-24
E9	45A10J1-17
E10	45A10J1-32
E11	45A10J1-2
E12	45A10J1-10
E13	45A10J1-11
E15	45A.0J1-18
E17	45A10J1-19

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	IND NO.
⊠	1009570		WIRING DIAGRAM	REF
1	1008637		WIRE LIST AA	26
1	1008635		WIRING HARNESS B	25
1	1008634		WIRING HARNESS A	24
1	1008553		GASKET CONNECTOR	23
1	1008552		GASKET CONNECTOR	22
1	1007582		BUFFER RESISTORS MODULE ASSY	21
3	MS16995-10		SCREW, CAP, SOCKET HD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
~~23~~	~~1008172~~		~~SCREW, JACK~~	14
~~23~~	~~1004207~~		~~DRIVE CYLINDER~~	13
~~23~~	~~MS171433~~		~~PIN SPRING~~	12
~~46~~	~~1004206~~		~~WASHER, THRUST~~	11
2	MS16995-11		SCREW CAP SOCKET HD	10
1	1010821-1		CONNECTOR RECEPTACLE	9
16	MS 1655[illegible]-604		PIN GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782 2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	1010382-1		CONTACT, BLADE EDGE CONN	4
154	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
154	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008530		FRAME	1

011 LIST OF MATERIALS

1007580	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN L. Krahn
CHECKED
APPROVED
APPROVED [illegible] 12/4/64
APPROVED MIT [illegible] [illegible]
APPROVED MSC [illegible] 12-[illegible]
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 10

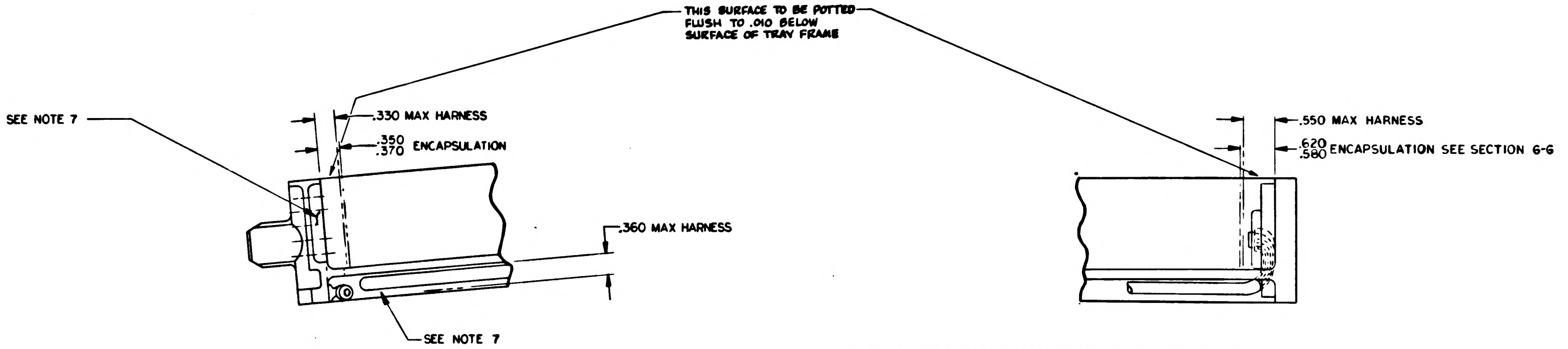
CODE IDENT NO. 80230
SIZE E
DRAWING NO. 1007530
SCALE 1/1
SHEET 1 OF 2

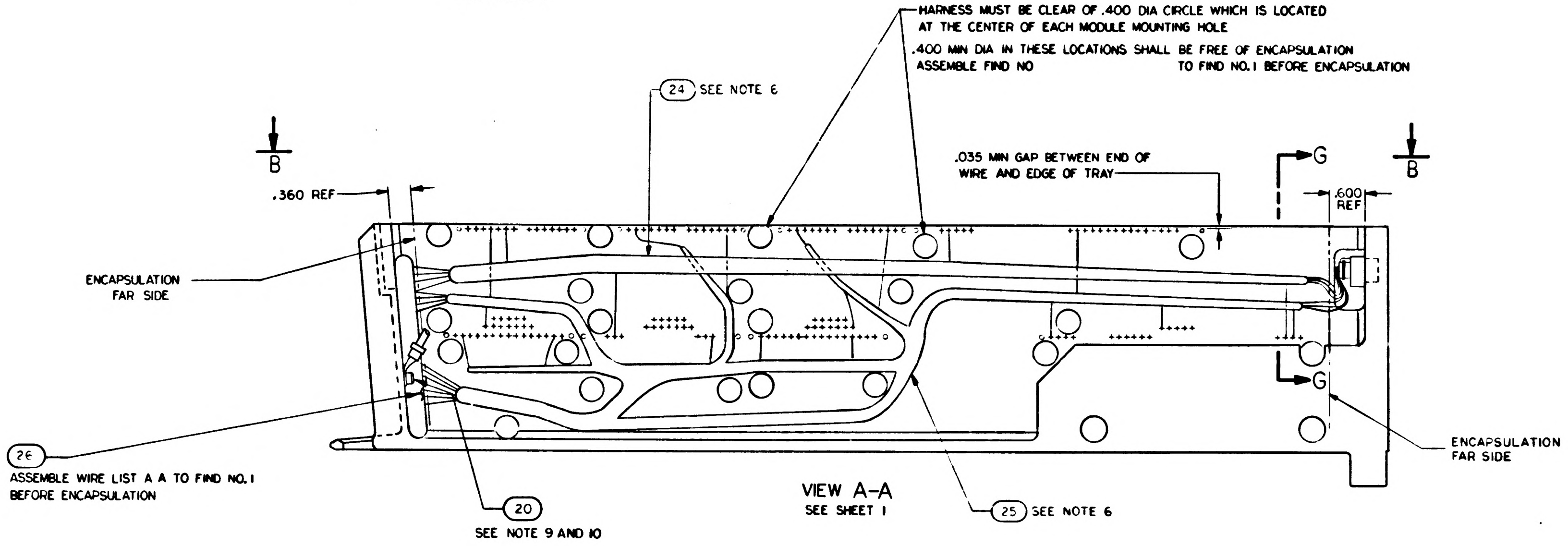
1007530 K

NOTICE WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

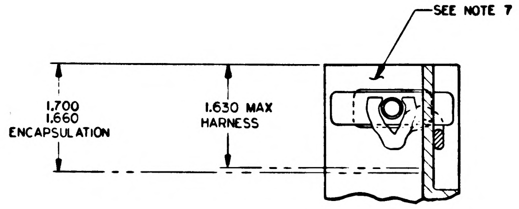
REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 4706				
C		REVISED PER TDRR 5152	LK		29 DEC 64	
D		REVISED PER TDRR 15476		RL		
E		REVISED PER TDRR 15948	J.K			
F		REVISE PER TDRR 17613	RJJ			
G		REVISED PER TDRR 18690		EF		
H		REVISED PER TDRR 18691	JJJ	EF		
J		REVISED PER TDRR 18695	A.N.			
K		REVISION STATUS CHANGED				

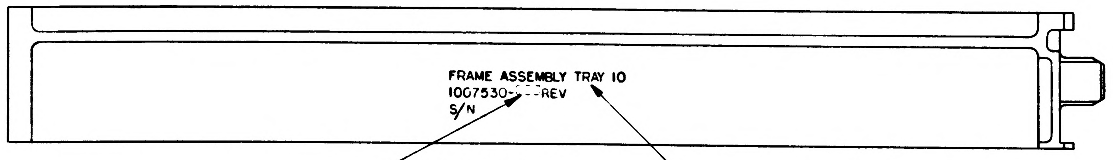

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 7
.330 MAX HARNESS
.350 .370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 7
.550 MAX HARNESS
.620 .580 ENCAPSULATION SEE SECTION G-G


HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION
ASSEMBLE FIND NO TO FIND NO.1 BEFORE ENCAPSULATION
24 SEE NOTE 6
B
.360 REF
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
G
B
.600 REF
ENCAPSULATION FAR SIDE
G
26
ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
20
SEE NOTE 9 AND 10
25 SEE NOTE 6
ENCAPSULATION FAR SIDE

VIEW A-A
SEE SHEET 1


SEE NOTE 7
1.700 1.660 ENCAPSULATION
1.630 MAX HARNESS

PARTIAL SECTION G-G


FRAME ASSEMBLY TRAY 10
1007530-- -REV
S/N
APPLICABLE DASH NO.
SEE NOTE 5

VIEW B-B
ROTATED 180°

(MARKING VIEW AFTER ENCAPSULATION)

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007580	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS XXX ±.005 XX ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN		30 SEP 64
CHECKED		27 OCT 64
APPROVED		
APPROVED		
APPROVED MIT		
APPROVED MSC		
		DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

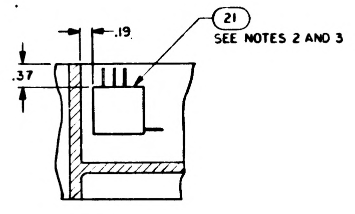
FRAME ASSEMBLY
TRAY 10

CODE IDENT NO.	SIZE	DRAWING NO.
80230	E	1007530
SCALE 1/1		SHEET 2 OF 2

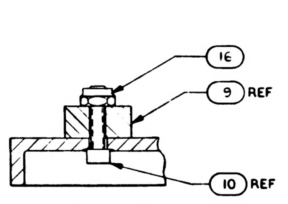
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

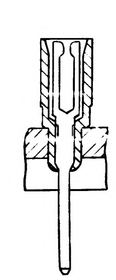
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14 6				
C		REVISED PER TDRR 15152	LK		28 DEC 64	
D		REVISED PER TDRR 15476			JAN	
E		REVISED PER TDRR 15948	JK			
F		REVISED PER TDRR 176 3	RJJ		25	
G		REVISED PER TDRR 1 690		EF		
H		REVISED PER TDRR 18C91	JJJ	EF	65	
J		REVISED PER TDRR 18693	A.N.		65	
K		REVISED PER TDRR 20 45	RJJ	JAC		
L		REVISION STATUS CHANGED	RLP		12 65	



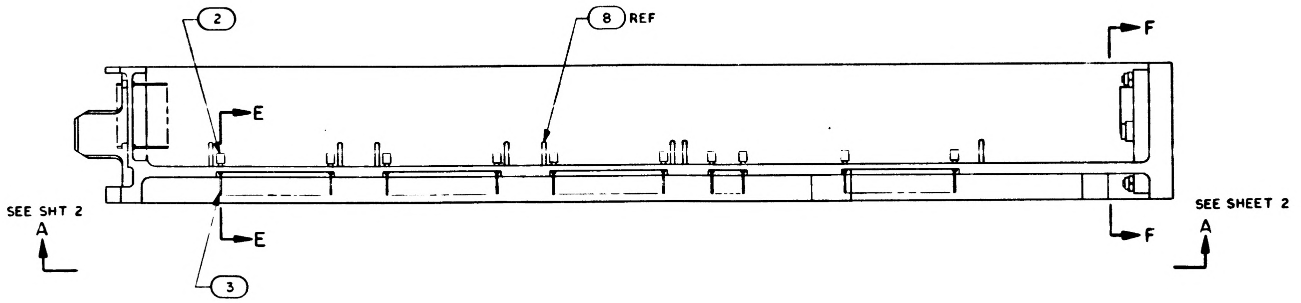
PARTIAL SECTION F-F

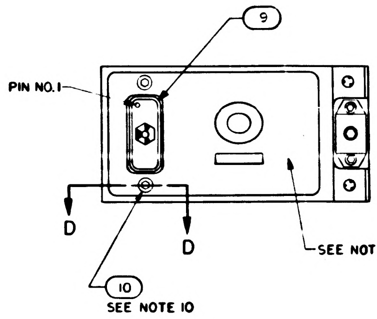


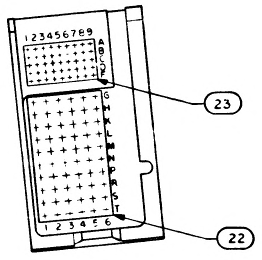
PARTIAL SECTION D-D
SCALE 2/1

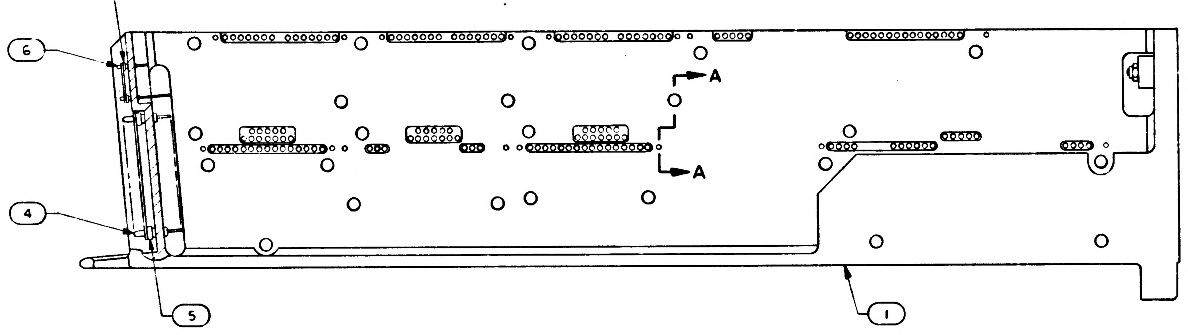


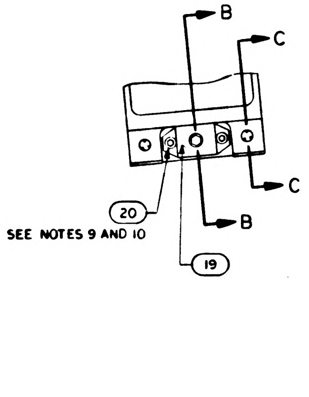
PARTIAL SECTION E-E
247 PLACES
NO SCALE







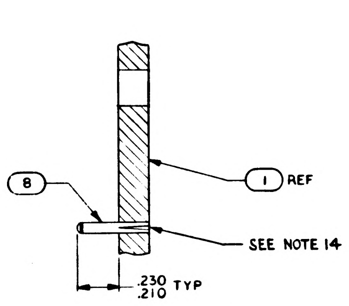




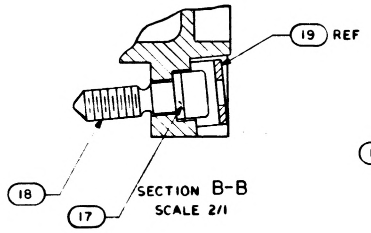
Ⓑ REPLACES WORD DWG REV A

NOTES:

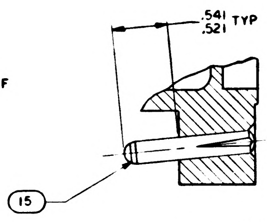
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 21 TO FIND NO. 1 PER ND 1002004 TYPE 1
3. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 21
4. ASSEMBLE FIND NO. 2, 3, 4, 5, 6 AND 7 PER ND 1002136
5. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
6. BOND FIND NO. 24, 25 AND 26 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
7. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A OR B USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. BOND FIND NO. 22 TO FIND NO. 5 AND FIND NO. 23 TO FIND NO. 7 PER ND 1002237
13. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I
14. FILL [illegible] GUIDE PIN HOLES AND ANY ASSOCIATE[illegible] IN PLA[illegible] (AFTER GUIDE PIN INSERTION) USIN[illegible] ADHES[illegible] PER ND1002004, POTTING SIDE ONLY.
15. PROCURE PER PS 1007150.



PARTIAL SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
2 PLACES
SCALE 2/1

TERMINATION CHART FOR FIND NO. 21 REF

FROM	TO
E8	45A10J1-24
E9	45A10J1-17
E10	45A10J1-32
E11	45A10J1-2
E12	45A10J1-10
E13	45A10J1-11
E15	45A10J1-18
E17	45A10J1-19

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
╳	1009570		WIRING DIAGRAM	REF
1	1008637		WIRE LIST AA	26
1	1008635		WIRING HARNESS B	25
1	1008634		WIRING HARNESS A	24
1	1008553		GASKET CONNECTOR	23
1	1008552		GASKET CONNECTOR	22
1	1007582		BUFFER RESISTORS MODULE ASSY	21
3	MS16995-10		SCREW, CAP, SOCKET HD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
~~23~~	~~1008172~~		~~SCREW, JACK~~	14
~~23~~	~~1004207~~		~~DRIVE CYLINDER~~	13
~~23~~	~~MS171433~~		~~PIN SPRING~~	12
~~46~~	~~1004206~~		~~WASHER, THRUST~~	11
2	MS16995-11		SCREW CAP SOCKET HD	10
1	1010821-1		CONNECTOR RECEPTACLE	9
16	MS 165[illegible]-604		PIN GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	1010382-1		CONTACT, BLADE EDGE CONN	4
154	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
154	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008530		FRAME	1

C11
LIST OF MATERIALS

NEXT ASSY	USED ON
1007580	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN L. Krahn
CHECKED
APPROVED
APPROVED 12/4/64
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

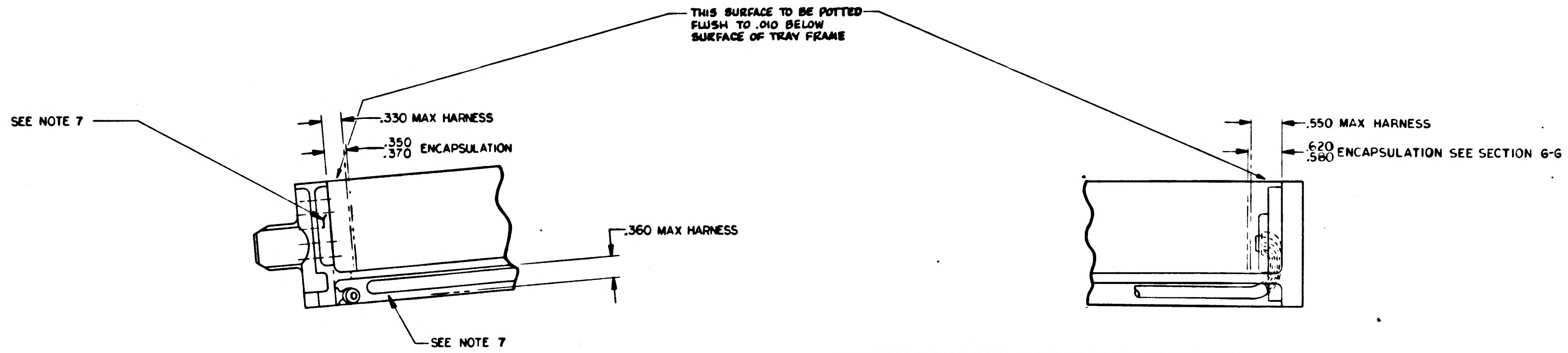
FRAME ASSEMBLY
TRAY 10

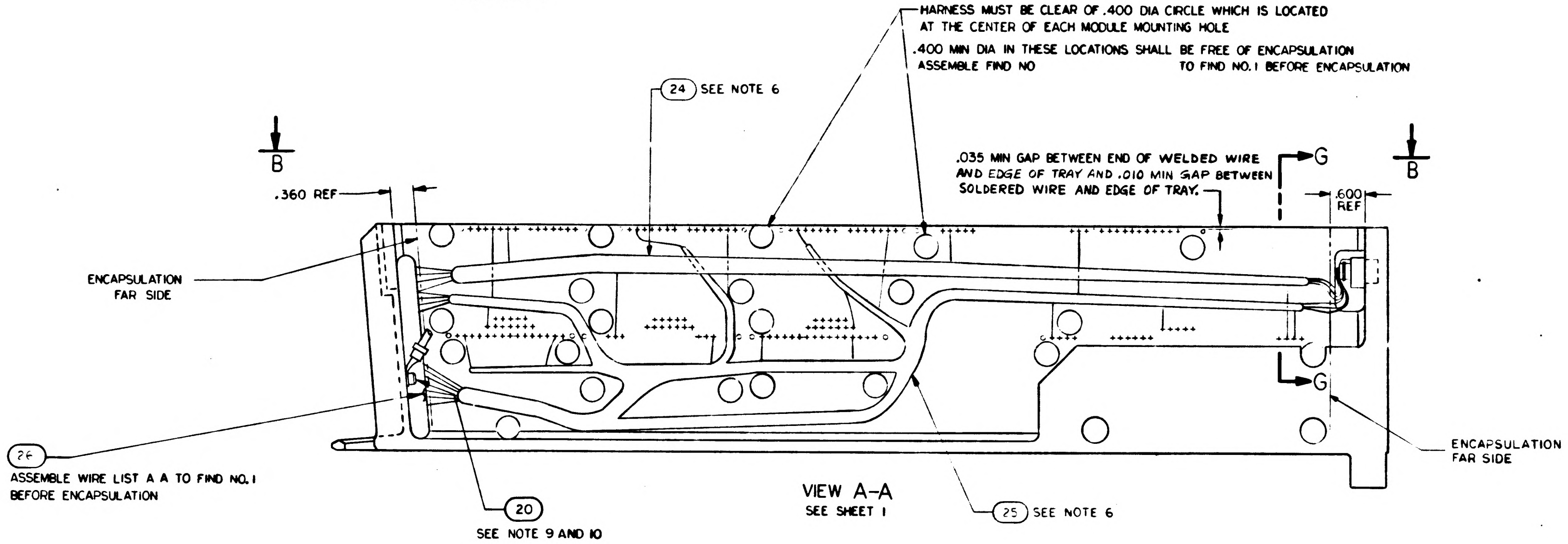
CODE IDENT NO. 80230
SIZE E
DRAWING NO. 1007530
SCALE 1/1
SHEET 1 OF 2

NOTICE WHEN GOVERNMENT DRAWINGS SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

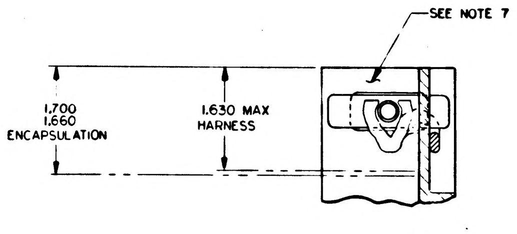
REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
(M) B		REPLACES WORD DWG REV A PER TDRR 4706			7/64	
C		REVISED PER TDRR 5152	LK	[illegible]	29 DEC 64	
D		REVISED PER TDRR 15476	TAB	RL	[illegible]	
(V) E		REVISED PER TDRR 15948	[illegible]	[illegible]	11 FEB	
(M) F		REVISE PER TDRR 17615	RJJ	[illegible]	30 MAR	
G		REVISED PER TDRR 18690	[illegible]	EF	65	
H		REVISED PER TDRR 18691	JJJ	[illegible]	2 MAY 65	
(M) J		REVISED PER TDRR 18695	A.N	[illegible]	MAY 65	
(M) K		REVISION STATUS CHANGED	RL	[illegible]	[illegible]	
L		REVISED PER TDRR 20687	R	[illegible]	[illegible]	

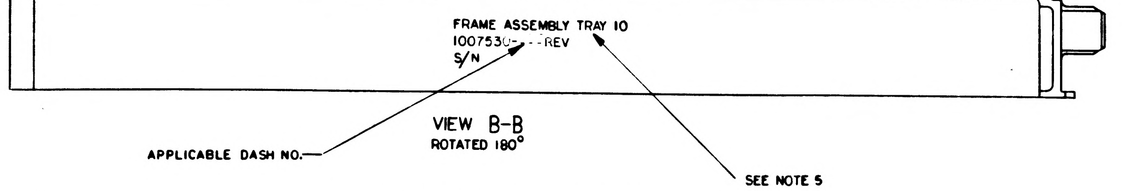

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 7
.330 MAX HARNESS
.350 .370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 7
.550 MAX HARNESS
.620 .580 ENCAPSULATION SEE SECTION G-G


HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION
ASSEMBLE FIND NO 24 TO FIND NO. 1 BEFORE ENCAPSULATION
24 SEE NOTE 6
B
.360 REF
.035 MIN GAP BETWEEN END OF WELDED WIRE AND EDGE OF TRAY AND .010 MIN GAP BETWEEN SOLDERED WIRE AND EDGE OF TRAY.
G
B
.600 REF
ENCAPSULATION FAR SIDE
G
26
ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
ENCAPSULATION FAR SIDE
20
SEE NOTE 9 AND 10
25 SEE NOTE 6

VIEW A-A
SEE SHEET 1


SEE NOTE 7
1.700 1.660 ENCAPSULATION
1.630 MAX HARNESS

PARTIAL SECTION G-G


FRAME ASSEMBLY TRAY 10
1007530- -REV
S/N
APPLICABLE DASH NO.
SEE NOTE 5

VIEW B-B
ROTATED 180°

(MARKING VIEW AFTER ENCAPSULATION)

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

1007580	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS XXX ±.005 XX ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN [illegible] 30 SEP 64
CHECKED [illegible] 27 OCT 64
APPROVED
APPROVED [illegible] 10/6/64
APPROVED MIT [illegible]
APPROVED MSC [illegible]
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 10

CODE IDENT NO.	SIZE	DRAWING NO.
80230	E	1007530

SCALE 1/1
SHEET 2 OF 2

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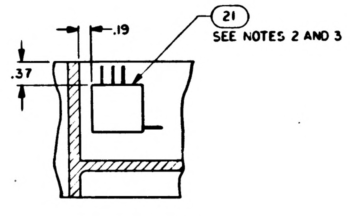
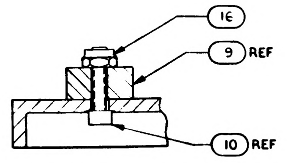
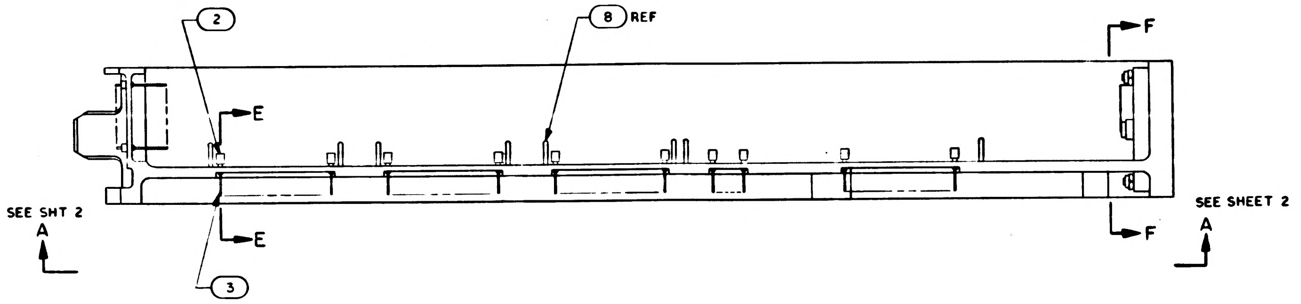
REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 147[illegible]6				Wk
C		REVISED PER TDRR 15152	LK	G.W.L	29 DEC 64	Wk
D		REVISED PER TDRR 15476	TAW	RL	18 JAN 65	
E		REVISED PER TDRR 15948	JK	MW		
F		REVISED PER TDRR 17613	RJJ	WD	29 MAR 65	
G		REVISED PER TDRR 18690	WD	EF		
H		REVISED PER TDRR 18[illegible]91	JJJ	EF	6 MAY 65	
J		REVISED PER TDRR [illegible]	AN.		65	
K		REVISED PER TDRR [illegible]	RJ	JAC		
L		REVISION STATUS CHANGED	RLP		12 65	
M		REVISED PER TDRR [illegible]	JWP	RWH	65	

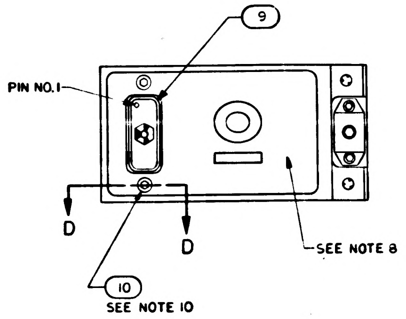


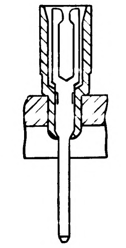
PARTIAL SECTION F-F



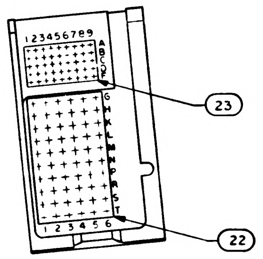
PARTIAL SECTION D-D
SCALE 2/1

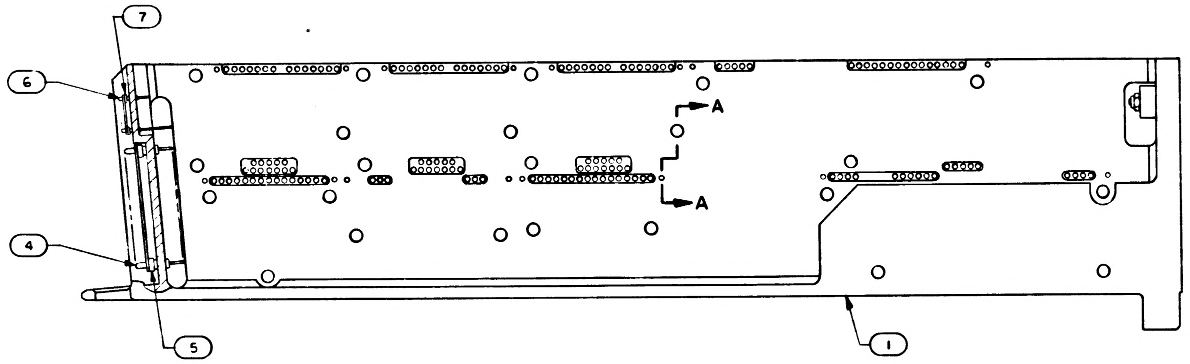


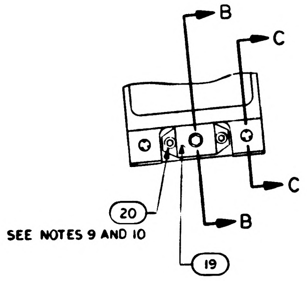




PARTIAL SECTION E-E
247 PLACES
NO SCALE

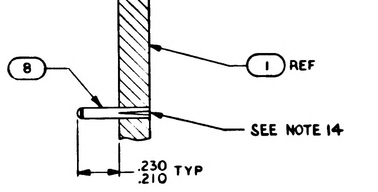




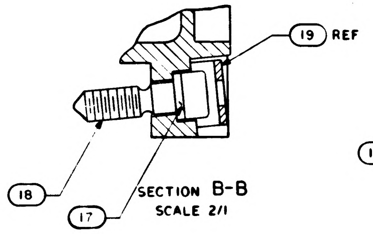


Ⓑ REPLACES WORD DWG REV A

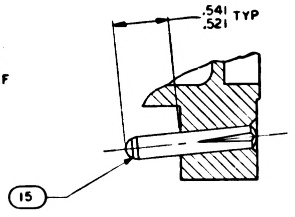
TERMINATION CHART FOR FIND NO. 21 REF	
FROM	TO
E8	45A10J1-24
E9	45A10J1-17
E10	45A10J1-32
E11	45A10J1-2
E12	45A10J1-10
E13	45A10J1-11
E15	45A10J1-18
E17	45A10J1-19



PARTIAL SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
2 PLACES
SCALE 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 21 TO FIND NO. 1 PER ND 1002004 TYPE 1
3. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 21
4. ASSEMBLE FIND NO. 2, 3, 4, 5, 6 AND 7 PER ND 1002136
5. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
6. BOND FIND NO. 24, 25 AND 26 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
7. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A OR B USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. BOND FIND NO. 22 TO FIND NO. 5 AND FIND NO. 23 TO FIND NO. 7 PER ND 1002237
13. ~~COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002008 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I~~
14. FILL [illegible] GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLA[illegible] (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.
15. PROCURE PER PS 1007150.

13. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A FORMULATION CONSISTING OF 40 PARTS BY WT. 1010959-1, 100 PARTS BY WT. 1010959-2, AND 7 PARTS BY WT. 1006277 AND CURE AT ROOM TEMPERATURE FOR THREE HOURS OR ONE HOUR AT 140°F. LIMITED AMOUNT ALLOWED TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND1002004, TYPE I.

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009570		WIRING DIAGRAM	REF
1	1008637		WIRE LIST AA	26
1	1008635		WIRING HARNESS B	25
1	1008634		WIRING HARNESS A	24
1	1008553		GASKET CONNECTOR	23
1	1008552		GASKET CONNECTOR	22
1	1007582		BUFFER RESISTORS MODULE ASSY	21
3	MS16995-10		SCREW, CAP, SOCKET HD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
~~23~~	~~1008172~~		~~SCREW, JACK~~	14
~~23~~	~~1004207~~		~~DRIVE CYLINDER~~	13
~~23~~	~~MS171433~~		~~PIN SPRING~~	12
~~46~~	~~1004206~~		~~WASHER, THRUST~~	11
2	MS16995-11		SCREW CAP SOCKET HD	10
1	1010821-1		CONNECTOR RECEPTACLE	9
16	MS1655[illegible]-604		PIN GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	1010382-1		CONTACT, BLADE EDGE CONN	4
154	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
154	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008530		FRAME	1

011 LIST OF MATERIALS

1007580	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL
—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN L Krahn
CHECKED
APPROVED
APPROVED 12/4/64
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 10

CODE IDENT NO 80230
SIZE E
DRAWING NO. 1007530
SCALE 1/1
SHEET 1 OF 2

1007530 M

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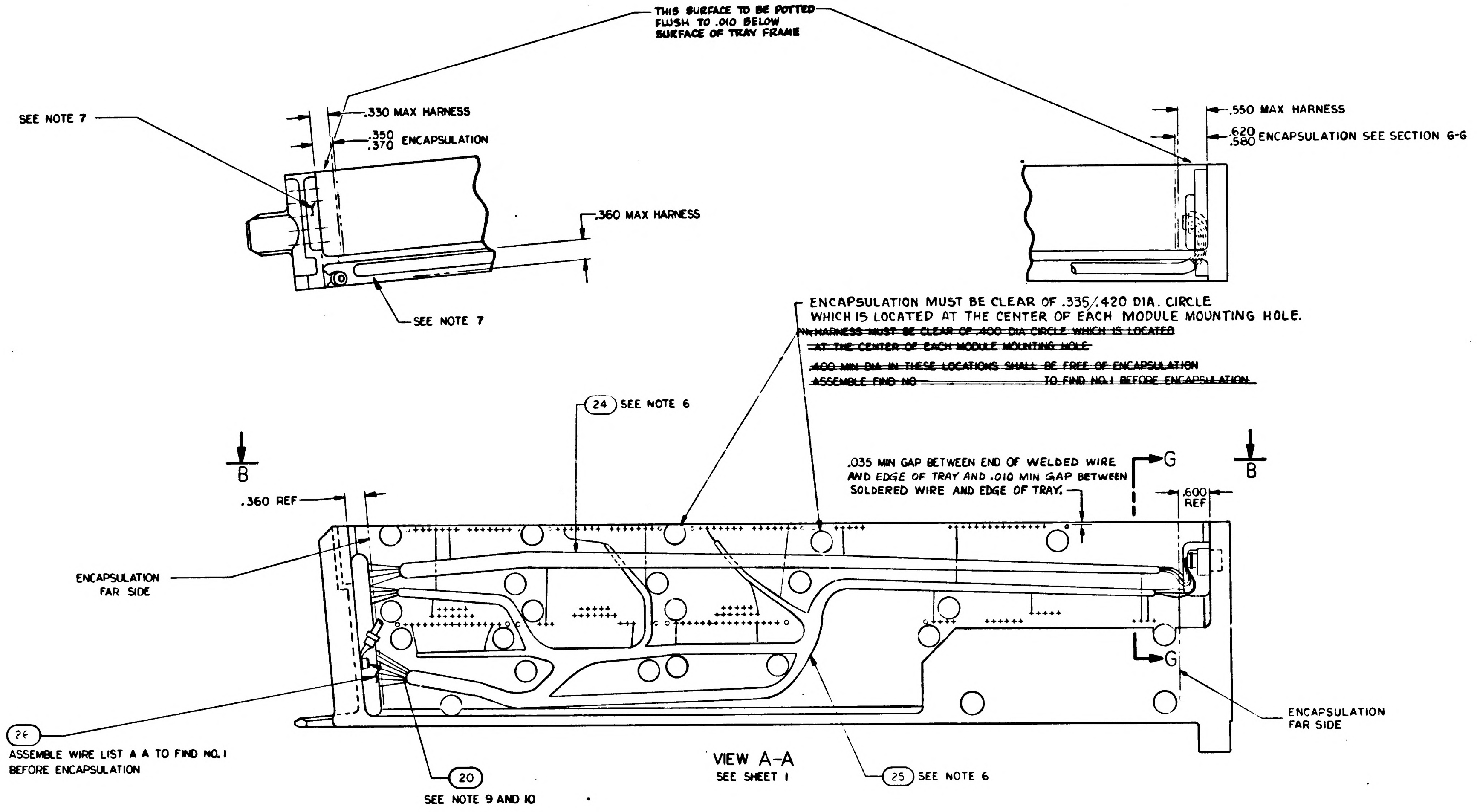
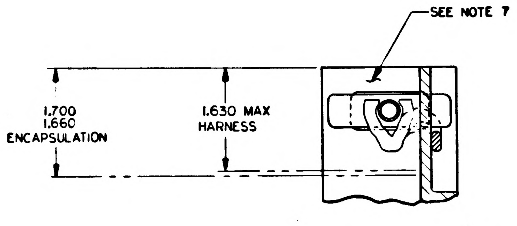
REVISIONS

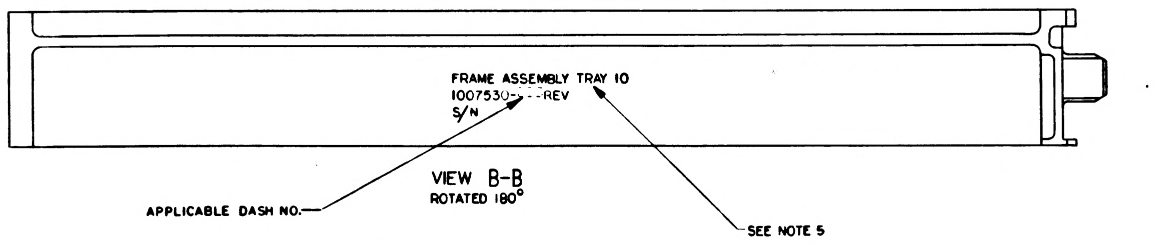
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 4706			3/64	
C		REVISED PER TDRR 5152	LK		29 DEC 64	
D		REVISED PER TDRR 15476		RL	JAN 65	
E		REVISED PER TDRR 15948	JK		11 FEB 65	
F		REVISE PER TDRR 17615	RJJ		MAR	
G		REVISED PER TDRR 18690		EF	65	
H		REVISED PER TDRR 18691	JJJ		MAY 65	
J		REVISED PER TDRR 18695	A.N.		MAY 65	
K		REVISION STATUS CHANGED				
L		REVISED PER TDRR 20687			65	
M		REVISED PER TDRR 20768			65	


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 7
.330 MAX HARNESS
.350 .370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 7
.550 MAX HARNESS
.620 .580 ENCAPSULATION SEE SECTION G-G
ENCAPSULATION MUST BE CLEAR OF .335/.420 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
~~HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE~~
~~.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION~~
~~ASSEMBLE FIND NO TO FIND NO. 1 BEFORE ENCAPSULATION.~~
24 SEE NOTE 6
B
B
.360 REF
.035 MIN GAP BETWEEN END OF WELDED WIRE AND EDGE OF TRAY AND .010 MIN GAP BETWEEN SOLDERED WIRE AND EDGE OF TRAY.
G
G
.600 REF
ENCAPSULATION FAR SIDE
ENCAPSULATION FAR SIDE
26 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
20 SEE NOTE 9 AND 10
25 SEE NOTE 6

VIEW A-A
SEE SHEET 1


SEE NOTE 7
1.700 1.660 ENCAPSULATION
1.630 MAX HARNESS

PARTIAL SECTION G-G


FRAME ASSEMBLY TRAY 10
1007530-REV
S/N
APPLICABLE DASH NO.
SEE NOTE 5

VIEW B-B
ROTATED 180°

(MARKING VIEW AFTER ENCAPSULATION)

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007580	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS .XXX ±.005 .XX ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN
CHECKED
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 10

CODE IDENT NO.	SIZE	DRAWING NO.
80230	E	1007530

SCALE 1/1
SHEET 2 OF 2

1007530 M

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1007530

REVISIONS 12031			
SYM	DESCRIPTION	DATE	APPROVAL

DASH NO. 011

PART NO.	DESCRIPTION	REQD.
1008530 -001	Frame, Tray 10	1
1006774	Insulator, Wrapost, Female Miniature	157
1006781-2	Contact, Wrapost, Female Miniature	157
1010382-1	Contact, Blade Edge Connector	60
1010383-1	Insulator, Wrapost, Male	60
1010622-1	Connector Receptacle	1
1010620-4	Pin, Guide	16
1010620-5	Pin, Guide	2
1001317	Retainer, Jack Screw	1
1008172	Screw, Jack	23
1008098	Screw, Socket Head	1
1004206	Washer, Thrust	46
1008099-2	Washer	1
MS 16995-10	Screw, Cap, Socket Head	3
MS 16995-11	Screw, Cap, Socket Head	2
MS 21045 C 04	Nut, Self-Locking Hex	2
MS 171433	Pin, Spring	23
1004207	Drive Cylinder	23
1007093	Assembly, Buffer Resistor Module	1
1008552 -001	Gasket, Connector	1
1008553 -001	Gasket, Connector	1
1006782-2	Contact, Wrapost - Male, Miniature	45
1006775	Insulator, Wrapost - Male, Minature	45

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007580	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN Karen DATE 2/15/64
CHECKED
APPROVAL
APPROVAL D.B. [illegible] 8/24/64
NASA APPROVAL [illegible]
MIT APPROVAL W [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 10
(100 SERIES)

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007530
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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1007531

REVISIONS 12031

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 12628	[illegible]	[illegible]

DASH NO. C11

PART NO.	DESCRIPTION	REQD.
1008101-000	Frame, Tray 1	1
1006774	Insulator, Wrapost, Female Miniature	149
1006781-2	Contact, Wrapost, Female Miniature	149
1010382-1	Contact, Blade Edge Connector	84
1010383-1	Insulator, Wrapost, Male	84
1010622-1	Connector Receptacle	1
1010620-4	Pin, Guide	20
1010620-5	Pin, Guide	2
1001317	Retainer, Jack Screw	1
1008172	Screw, Jack	30
1008098	Screw, Socket Head,	1
1004206	Washer Thrust	60
1008099-2	Washer	1
MS 16995-10	Screw, Cap, Socket Head	3
MS 16995-11	Screw, Cap, Socket Head	2
MS 21045 C 04	Nut, Self-Locking Hex	2
MS 171433	Pin, Spring	30
1004207	Drive Cylinder	30
1007088	Assembly, Buffer Resistor Module	1
1008552-001	~~Gasket, Connector~~	1
1008551-001	Gasket, Connector	1

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007571	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

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DWG. NO. CONTRACT
DRAWN Karen DATE 7/15/64
CHECKED
APPROVAL
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL W Kupfer [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 1
(100 SERIES)

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007531
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE

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1007531 B

REVISIONS 12031			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 12628	21SEP64	
B	REVISED PER TDRR 13227	10-6-64	

PART NO.	DESCRIPTION	DASH NO. 011 REQD.	DASH NO. 021
1008101	Frame, Tray 1	1	1
1006774	Insulator, Wrapost, Female Miniature	149	149
1006781-2	Contact, Wrapost, Female Miniature	149	149
1010382-1	Contact, Blade Edge Connector	84	84
1010383-1	Insulator, Wrapost, Male	84	84
1010622-1	Connector Receptacle	1	1
1010620-4	Pin, Guide	20	20
1010620-5	Pin, Guide	2	2
1001317	Retainer, Jack Screw	1	1
1008172	Screw, Jack	30	30
1008098	Screw, Socket Head	1	1
1004206	Washer Thrust	60	60
1008099-2	Washer	1	1
MS 16995-10	Screw, Cap, Socket Head	3	3
MS 16995-11	Screw, Cap, Socket Head	2	2
MS 21045 C 04	Nut, Self-Locking Hex	2	2
MS 171433	Pin, Spring	30	30
1004207	Drive Cylinder	30	30
1007088	Assembly, Buffer Resistor Module	1	1
1008552	Gasket, Connector	1	1
1008551	Gasket, Connector	1	1
	Harness Group (100 Series)	1	-
	Harness Group (50 Series)		1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

MASTER

1007571	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

M I T
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN Hansen DATE 7/13/64
CHECKED
APPROVAL
APPROVAL D. B. Test 8/24/64
NASA APPROVAL 8/15/64
MIT APPROVAL W Kupfer 25 Aug 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 1

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007531
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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1007531 C

REVISIONS 12031

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 12628	21 SEPT 64	EAK WK
B	REVISED PER TDRR 13227	10-6-64	EAK WK
C	REPLACED BY CONFIGURATION DWG REV D PER TDRR 13939	11/9/68	WK

PART NO.	DESCRIPTION	DASH NO. 011 REQD.	DASH NO. 021
1008101	Frame, Tray 1	1	1
1006774	Insulator, Wrapost, Female Miniature	149	149
1006781-2	Contact, Wrapost, Female Miniature	149	149
1010382-1	Contact, Blade Edge Connector	84	84
1010383-1	Insulator, Wrapost, Male	84	84
1010622-1	Connector Receptacle	1	1
1010620-4	Pin, Guide	20	20
1010620-5	Pin, Guide	2	2
1001317	Retainer, Jack Screw	1	1
1008172	Screw, Jack	30	30
1008098	Screw, Socket Head	1	1
1004206	Washer Thrust	60	60
1008099-2	Washer	1	1
MS 16995-10	Screw, Cap, Socket Head	3	3
MS 16995-11	Screw, Cap, Socket Head	2	2
MS 21045 C 04	Nut, Self-Locking Hex	2	2
MS 171433	Pin, Spring	30	30
1004207	Drive Cylinder	30	30
1007088	Assembly, Buffer Resistor Module	1	1
1008552	Gasket, Connector	1	1
1008551	Gasket, Connector	1	1
	Harness Group (100 Series)	1	-
	Harness Group (50 Series)		1

Ⓒ REPLACED BY CONFIGURATION DWG REV D

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007571	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN Kanen DATE 7/13/64
CHECKED
APPROVAL
APPROVAL D. B. Test 8/24/64
NASA APPROVAL W. Michael 8/15/64
MIT APPROVAL W Kupfer 25 Aug 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

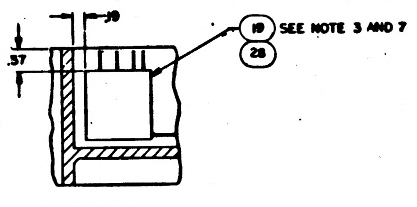
FRAME ASSEMBLY
TRAY 1

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007531
SCALE
WT
SHEET 1 OF 1

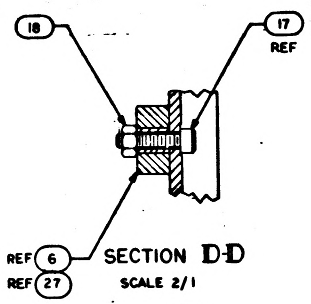
MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

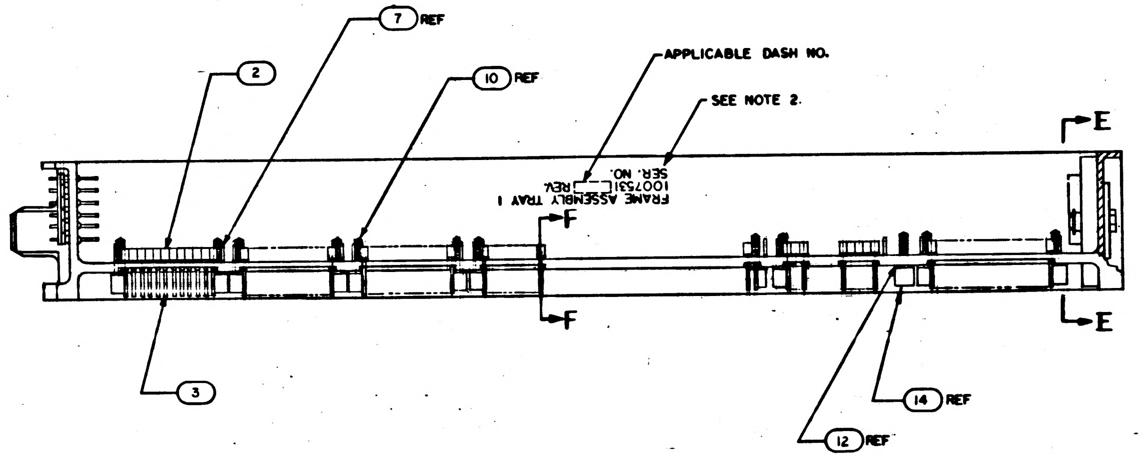
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
D		REPLACES WORD DWG REV C PER TDRR 13939		11/4/64	WR

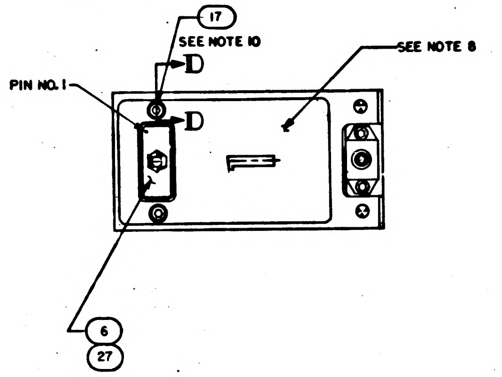


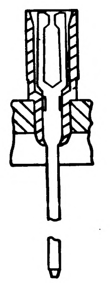
PARTIAL SECTION E-E



SECTION D-D
SCALE 2/1

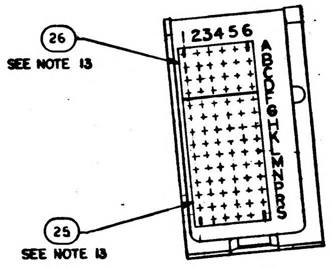


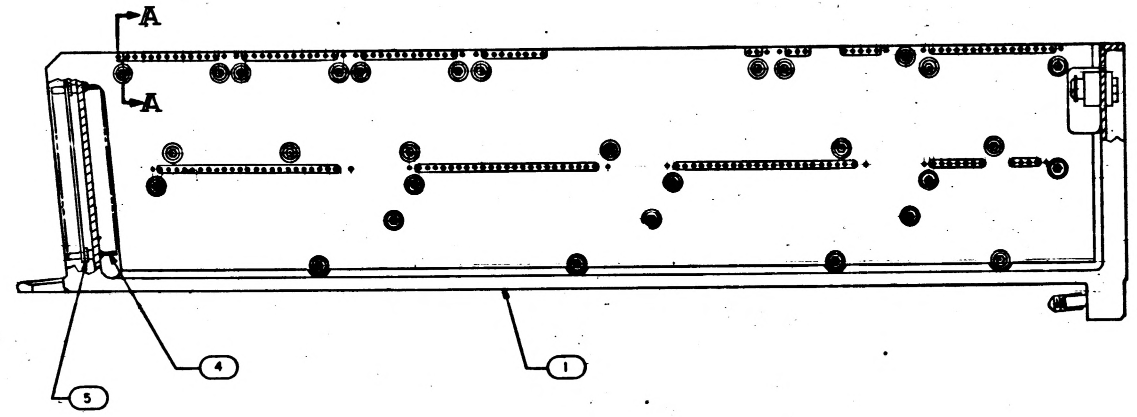


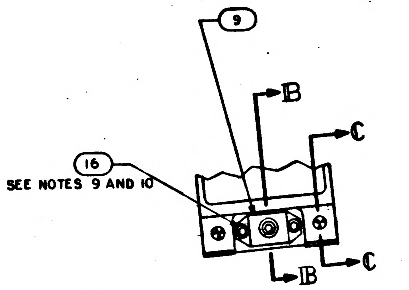


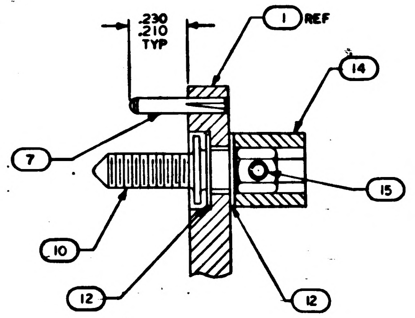
PARTIAL SECTION F-F
149 PLACES

D REPLACES WORD DWG REV C

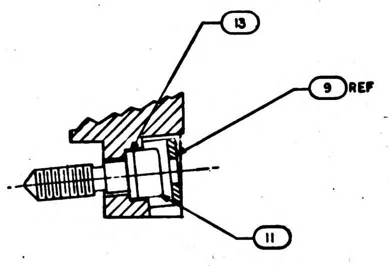




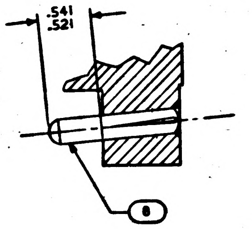




SECTION A-A
SCALE 4/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A1E7	45A1J1-12
E8	-3
E9	-33
E10	-17
45A1E11	45A1J1-18

QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		021	011				
		-	1		1007586-011	BUFFER RESISTOR ASSY	28
		-	X		1009561	WIRING DIAGRAM	REF
		X	-		1009551	WIRING DIAGRAM	REF
		-	1		1010821-1	CONNECTOR, RECEPTACLE	27
		1	1		1008551	GASKET, CONNECTOR TRAY	26
		1	1		1008552	GASKET, CONNECTOR TRAY	25
		1	—		1015741	WIRE LIST AA	24
		1	—		1015740	WIRING HARNESS D	23
		1	—		1015739	WIRING HARNESS C	22
		1	—		1015738	WIRING HARNESS B	21
		1	—		1015737	WIRING HARNESS A	20
		1	-		1007088	BUFFER RESISTOR ASSY	19
		2	2		MA21045 C 04	NUT SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET, HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET, HEAD	16
		30	30		MS171433	PIN, SPRING	15
		30	30		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		60	60		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		30	30		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		20	20		1010620-4	PIN, GUIDE	7
		1	—		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT BLADE EDGE CONNECTOR	4
		149	149		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		149	149		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	1		1008101	FRAME	1

LIST OF MATERIALS

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND 1002019 BLACK, .100/.140 HIGH & SERIALIZE PER ND 1002023.
3. BOND FIND NO 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686.
4. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND 1002136
5. BOND FIND NO'S 20, 21, 22, 23 AND 24 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19, OR FIND NO. 28.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NO.S 16 AND 17 TO FIND NO 1 TO BE 5.0–5.5 IN. LB.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005 ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071 ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS

12. PROCURE PER PS 1007141.
13. BOND FIND NOS. 25 AND 26 TO FIND NO. 5 PER ND 1002237.

MASTER

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS.
Contract NAS 9-497
DRAWN R. L. Fox DATE 28 SEP 64
CHECKED 6 OCT 64
APPROVAL 9 OCT 64
M.I.T. APPROVAL
NASA APPROVAL W J Rhine 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 1

SIZE E
NASA DRAWING NO. 1007531
SCALE 1/1
WT
SHEET 1 OF 2

1007531 D

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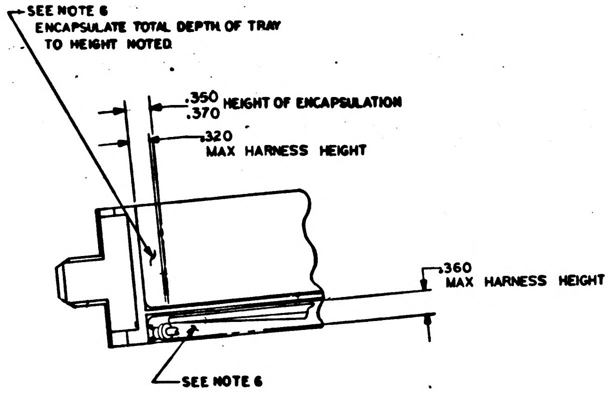
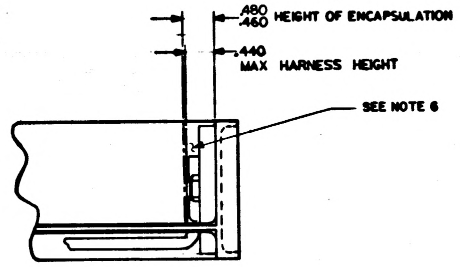
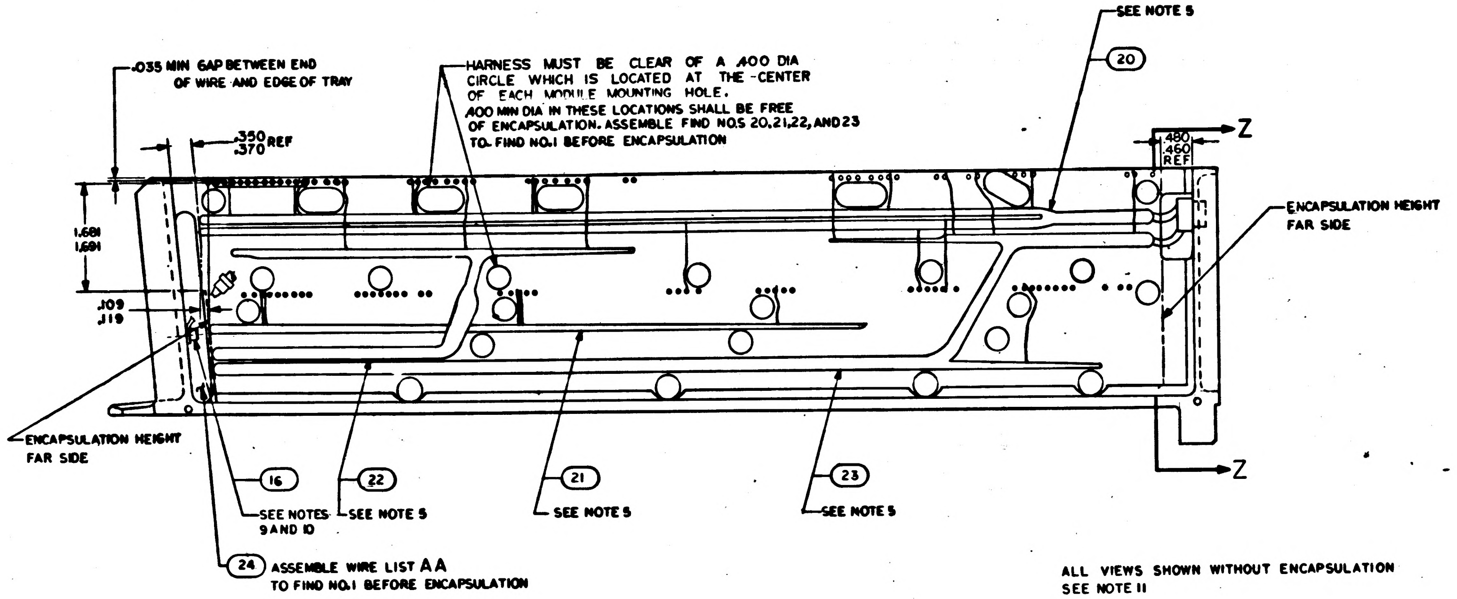
REVISIONS

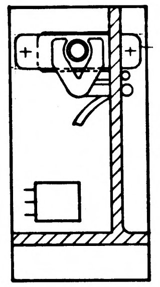
SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR 13939	1/14/69	WR


SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.350 .370 HEIGHT OF ENCAPSULATION
.320 MAX HARNESS HEIGHT
.360 MAX HARNESS HEIGHT
SEE NOTE 6


.480 .460 HEIGHT OF ENCAPSULATION
.440 MAX HARNESS HEIGHT
SEE NOTE 6


.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO.S 20,21,22, AND 23 TO FIND NO.1 BEFORE ENCAPSULATION
SEE NOTE 5
20
.350 .370 REF
.480 .460 REF
Z
Z
1.681 1.691
.109 .119
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
16
SEE NOTES 9 AND 10
22
SEE NOTE 5
21
SEE NOTE 5
23
SEE NOTE 5
24
ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —— DECIMALS —— ANGLES ± ——
DO NOT SCALE THIS DRAWING
MATERIAL ——
HEAT TREATMENT ——
FINAL FINISH ——

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
DRAWN R. J. Fox DATE [illegible] 64
CHECKED [illegible] 6 OCT 64
APPROVAL [illegible] 8 OCT 64
N.M.S. APPROVAL [illegible] A. [illegible] 10-26-64
NASA APPROVAL W. J. R[illegible] 11-[illegible]-64
MIT APPROVAL W. K[illegible] 4/[illegible]/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 1

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007531
SCALE 1/1
WT
SHEET 2 OF 2

MASTER

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REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
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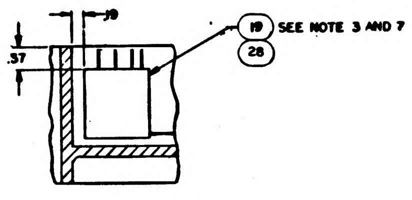
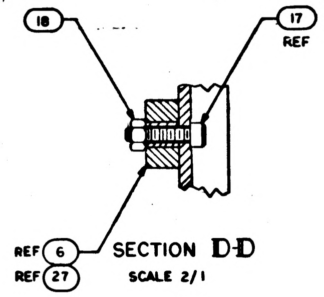
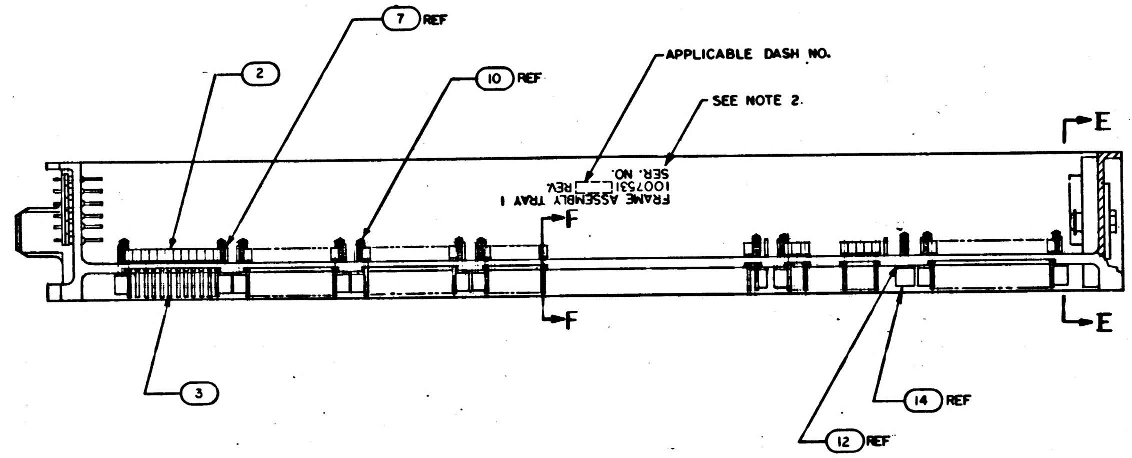
E		REVISED PER TDRR 15150		29 Dec 64	J.F.W.

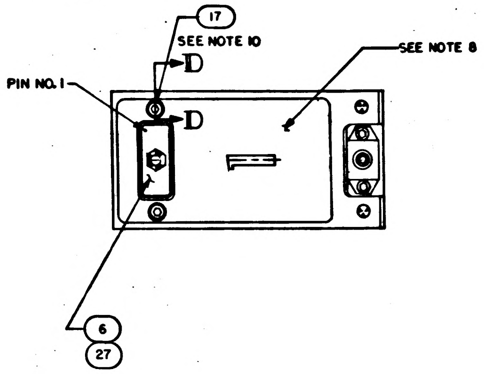


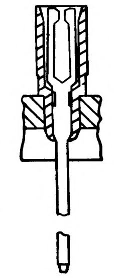
PARTIAL SECTION E-E



SECTION D-D
SCALE 2/1

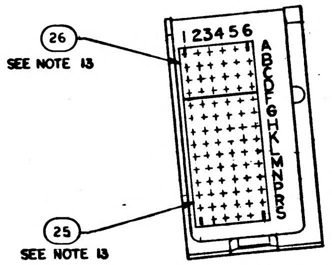


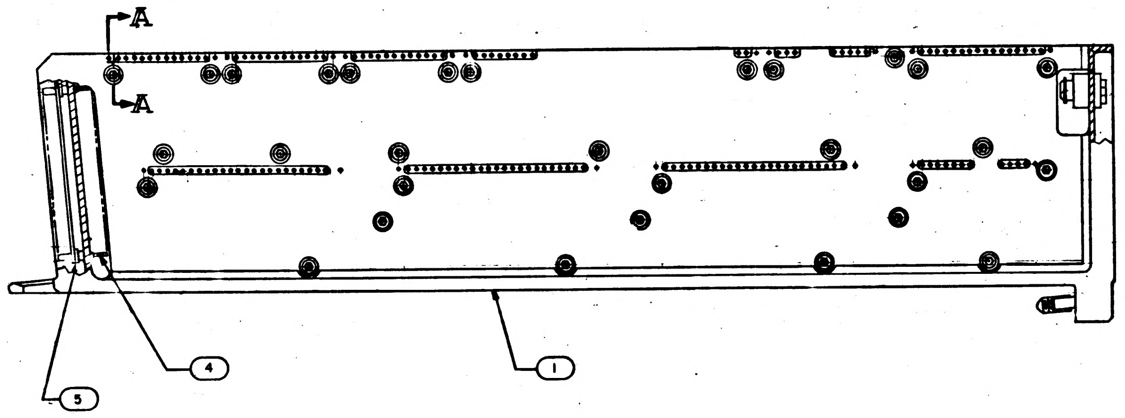


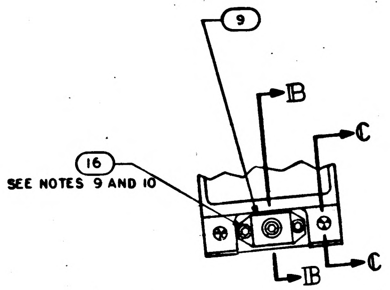


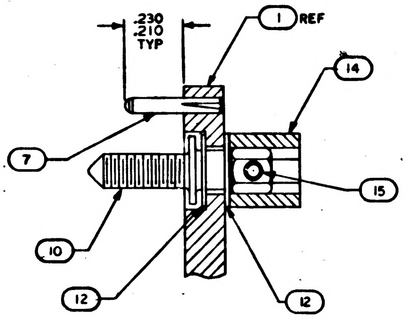
PARTIAL SECTION F-F
149 PLACES

Ⓓ REPLACES WORD DWG REV C

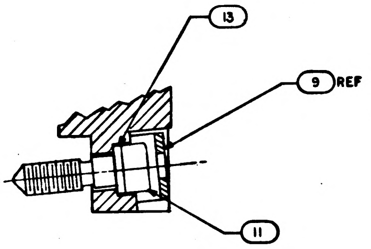




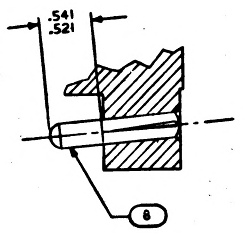




SECTION A-A
SCALE 4/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A1E7	45A1J1-12
E8	-3
E9	-33
E10	-17
45A1E11	45A1J1-18

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND 1002019 BLACK, .100/.140 HIGH & SERIALIZE PER ND 1002023.
3. BOND FIND NO 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686.
4. ASSEMBLE FIND NUMBERS 2,3,4 AND 5 PER ND 1002136
5. BOND FIND NO'S 20,21,22,23 AND 24 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19, OR FIND NO. 28.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NO.S 16 AND 17 TO FIND NO 1 TO BE 5.0—5.5 IN. LB.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005 ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071 ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS
12. PROCURE PER PS 1007141.
13. BOND FIND NOS. 25 AND 26 TO FIND NO. 5 PER ND 1002237.

QUANTITY REQUIRED							
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		–	1		1008620	WIRING LIST A A	33
		–	1		1008619	WIRING HARNESS D	32
		–	1		1008618	WIRING HARNESS C	31
		–	1		1008617	WIRING HARNESS B	30
		–	1		1008616	WIRING HARNESS A	29
		–	1		1007586-011	BUFFER RESISTOR ASSY	28
		–	X		1009561	WIRING DIAGRAM	REF
		X	–		1009551	WIRING DIAGRAM	REF
		–	1		1010821-1	CONNECTOR, RECEPTACLE	27
		1	1		1008551	GASKET, CONNECTOR TRAY	26
		1	1		1008552	GASKET, CONNECTOR TRAY	25
		1	–		1015741	WIRE LIST AA	24
		1	–		1015740	WIRING HARNESS D	23
		1	–		1015739	WIRING HARNESS C	22
		1	–		1015738	WIRING HARNESS B	21
		1	–		1015737	WIRING HARNESS A	20
		1	–		1007088	BUFFER RESISTOR ASSY	19
		2	2		MA21045 C 04	NUT SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET, HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET, HEAD	16
		30	30		MS171433	PIN, SPRING	15
		30	30		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		60	60		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		30	30		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		20	20		1010620-4	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT BLADE EDGE CONNECTOR	4
		149	149		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		149	149		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	1		1008101	FRAME	1

LIST OF MATERIALS

1007571		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL ——
HEAT TREATMENT ——
FINAL FINISH ——

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
Contract NAS 9-497
DRAWN R. J. Fox DATE 30 SEP 64
CHECKED [illegible] 6 OCT 64
APPROVAL [illegible] 9 OCT 64
M.I.T. APPROVAL [illegible]
NASA APPROVAL W J R[illegible] 12-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 1

CODE IDENT NO. | SIZE E | NASA DRAWING NO. 1007531
SCALE 1/1 | WT | SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
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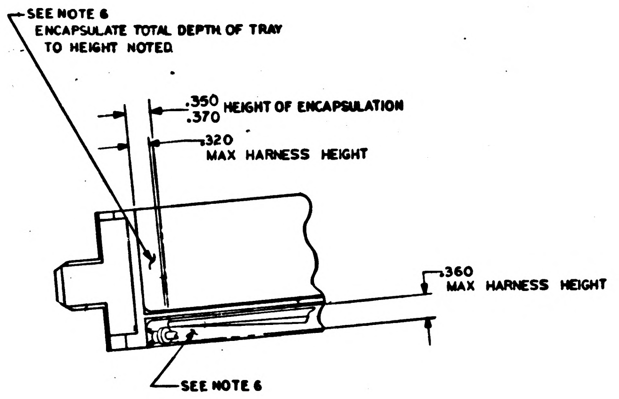
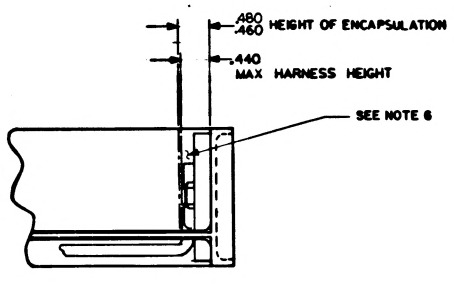
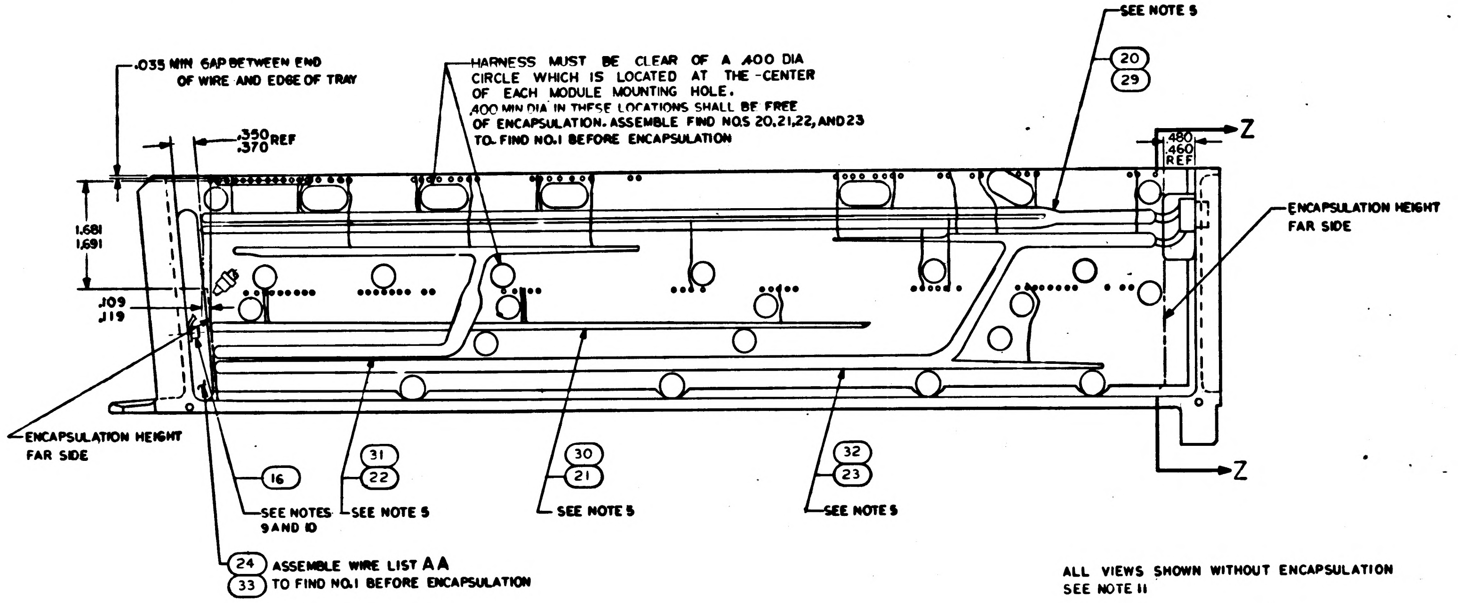
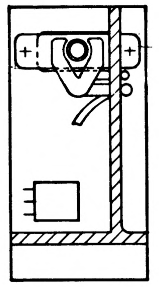
E	REVISED PER TDRR 15150	29 Dec 64	


SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.350 .370 HEIGHT OF ENCAPSULATION
.320 MAX HARNESS HEIGHT
.360 MAX HARNESS HEIGHT
SEE NOTE 6


.480 .460 HEIGHT OF ENCAPSULATION
.440 MAX HARNESS HEIGHT
SEE NOTE 6


.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE. .400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO.S 20,21,22, AND 23 TO FIND NO.1 BEFORE ENCAPSULATION
SEE NOTE 5
20
29
.350 .370 REF
.480 .460 REF
Z
1.681 1.691
.109 .119
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
Z
16
SEE NOTES 9 AND 10
31
22
SEE NOTE 5
30
21
SEE NOTE 5
32
23
SEE NOTE 5
24
33
ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —— DECIMALS —— ANGLES ± ——
DO NOT SCALE THIS DRAWING
MATERIAL ——
HEAT TREATMENT ——
FINAL FINISH ——

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG NO
DRAWN R. J. Fox DATE 23 SEP 64
CHECKED 6 OCT 64
APPROVAL 9 OCT 64
MIT APPROVAL 10-20-64
NASA APPROVAL W J Rhine 11-24-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY I

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007531
SCALE 1/1
WT
SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
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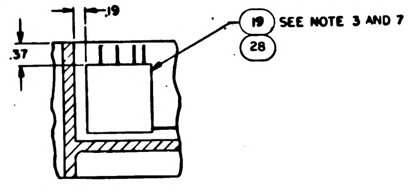
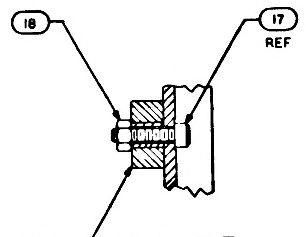
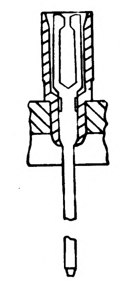
E		REVISED PER TDRR 15150		[illegible]	[illegible]
F		REVISED PER TDRR 15948		11 FEB 65	JJ



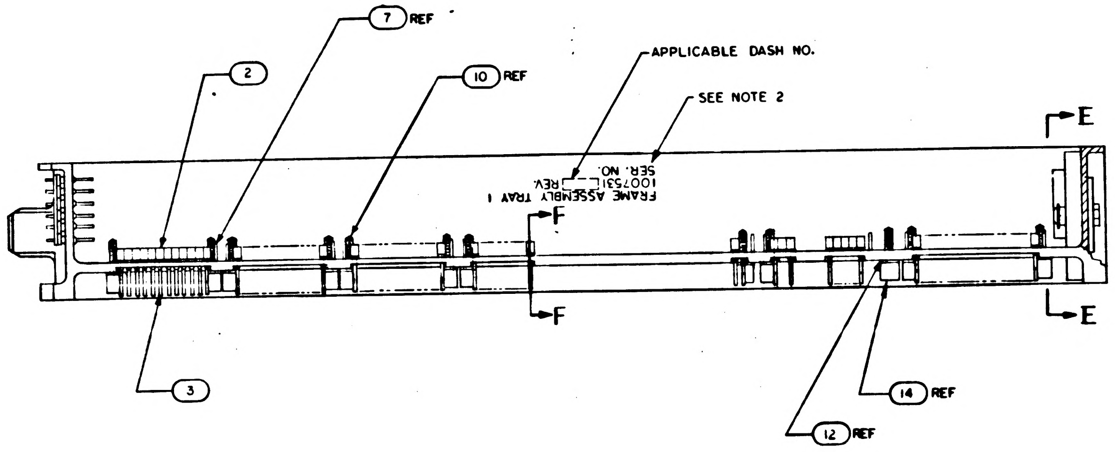
PARTIAL SECTION E-E

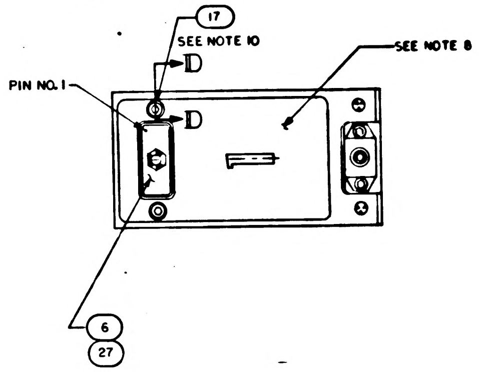


SECTION D-D
SCALE 2/1



PARTIAL SECTION F-F
149 PLACES





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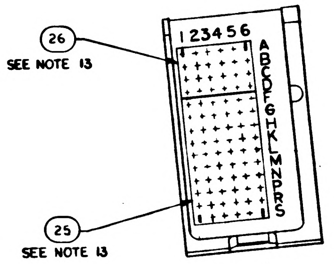
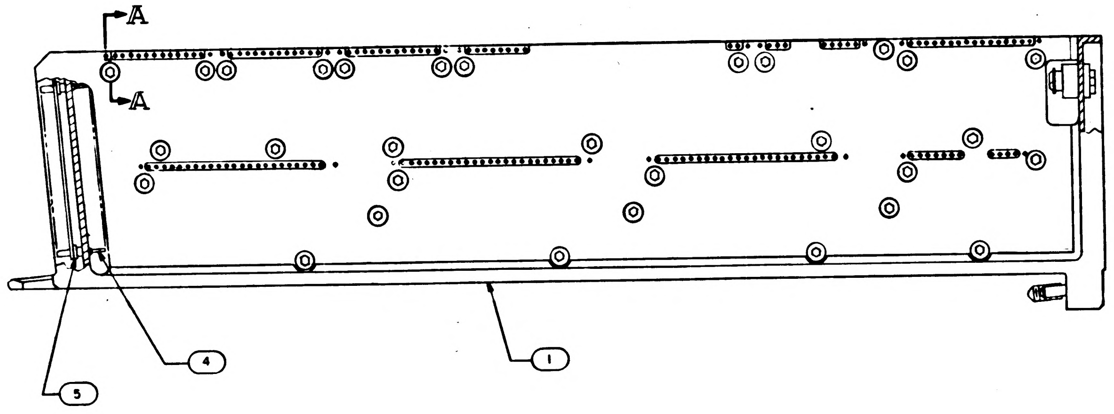
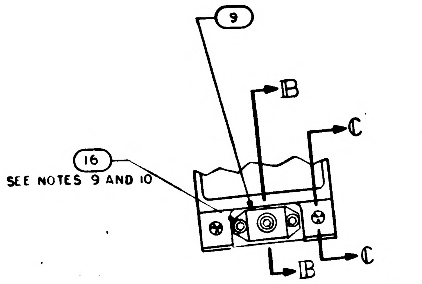
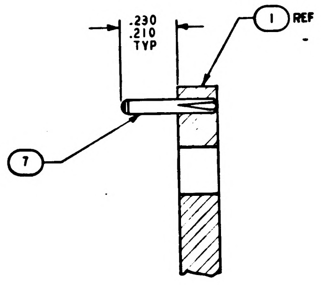
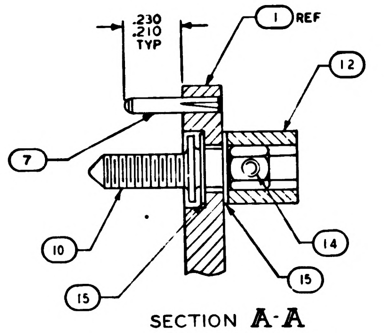




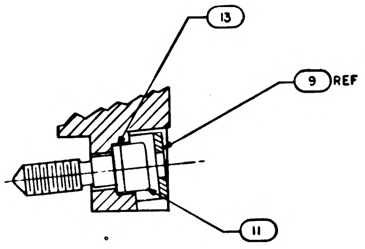




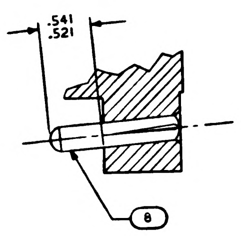
SECTION A-A
SCALE 4/1
-011 CONFIGURATION



SECTION A-A
SCALE 4/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND 1002019 BLACK, .100/.140 HIGH & SERIALIZE PER ND 1002023.
3. BOND FIND NO 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686.
4. ASSEMBLE FIND NUMBERS 2,3,4 AND 5 PER ND 1002136
5. BOND FIND NO'S 20,21,22,23 AND 24 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19, OR FIND NO. 28.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NO.S 16 AND 17 TO FIND NO 1 TO BE 5.0–5.5 IN.LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005 ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071 ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.

12. PROCURE PER PS 1007141.
13. BOND FIND NO'S. 25 AND 26 TO FIND NO. 5 PER ND 1002237.

TERMINATION CHART	
FROM	TO
45A1E7	45A1J1-12
E8	-3
E9	-33
E10	-17
45A1E11	45A1J1-18

QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		021	011				
		–	1		1008620	WIRING LIST AA	33
		–	1		1008619	WIRING HARNESS D	32
		–	1		1008618	WIRING HARNESS C	31
		–	1		1008617	WIRING HARNESS B	30
		–	1		1008616	WIRING HARNESS A	29
		–	1		1007586 011	BUFFER RESISTOR ASSY	28
		–	X		1009561	WIRING DIAGRAM	REF
		X	–		1009551	WIRING DIAGRAM	REF
		–	1		1010821-1	CONNECTOR, RECEPTACLE	27
		1	1		1008551	GASKET, CONNECTOR TRAY	26
		1	1		1008552	GASKET, CONNECTOR TRAY	25
		1	–		1015741	WIRE LIST AA	24
		1	–		1015740	WIRING HARNESS D	23
		1	–		1015739	WIRING HARNESS C	22
		1	–		1015738	WIRING HARNESS B	21
		1	–		1015737	WIRING HARNESS A	20
		1	–		1007088	BUFFER RESISTOR ASSY	19
		2	2		MA21045 C 04	NUT SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET, HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET, HEAD	16
		30	–		MS171433	PIN, SPRING	15
		30	–		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		60	–		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		30	–		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		20	20		1010620-4	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT BLADE EDGE CONNECTOR	4
		149	149		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		149	149		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	1		1008101	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-49
DRAWN R J Fox DATE 29 SEP 64
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 1

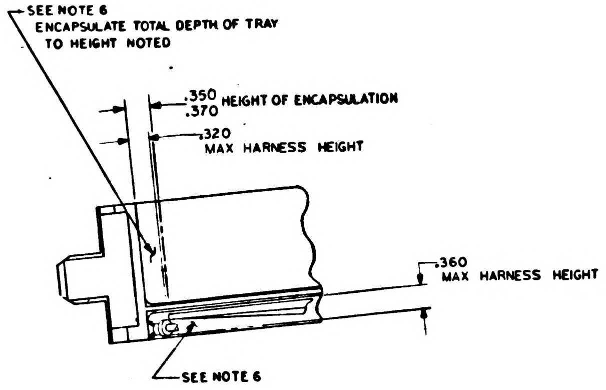
CODE IDENT NO. SIZE E NASA DRAWING NO. 1007531
SCALE 1/1 WT SHEET 1 OF 2

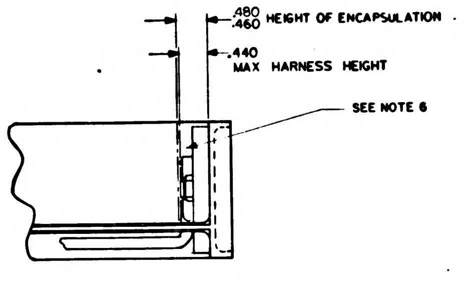
1007531 F

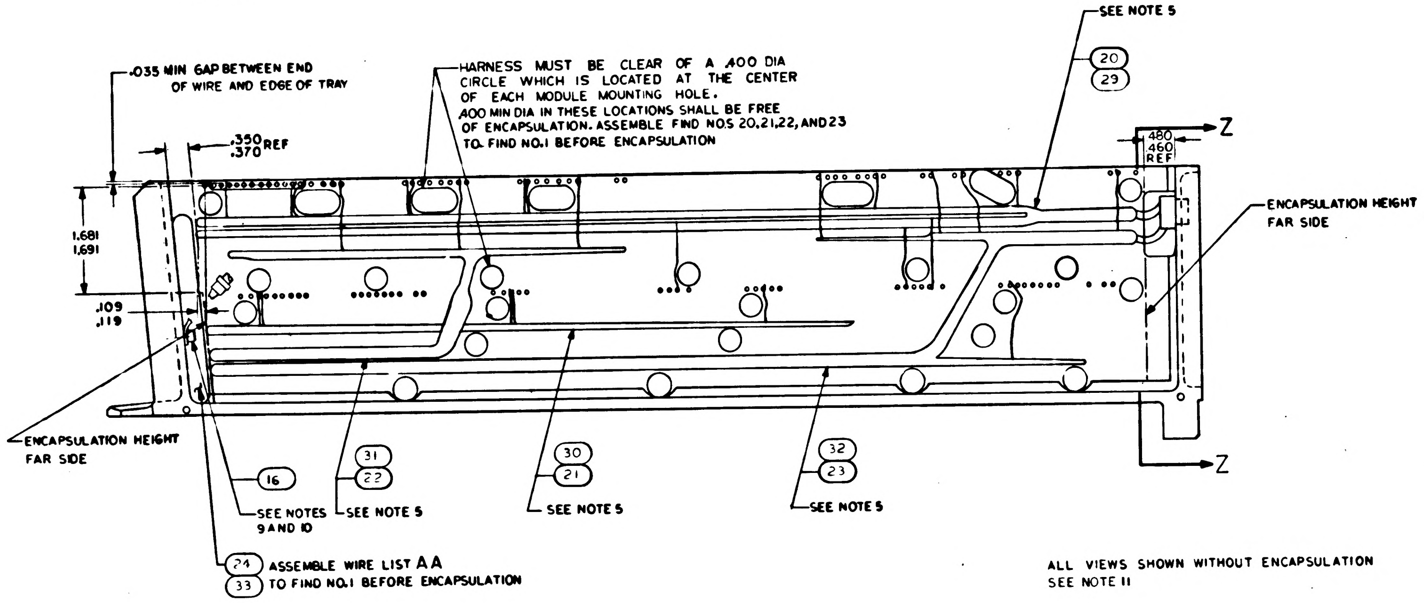
NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

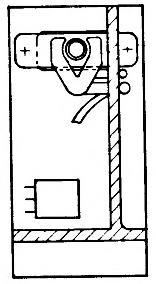
SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR 13939	11/6/64	WK
E	REVISED PER TDRR 15150	23 Dec 64	WK
F	REVISED PER TDRR 15948	11 FEB 65	JJJ CW


SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.350
.370 HEIGHT OF ENCAPSULATION
.320
MAX HARNESS HEIGHT
.360
MAX HARNESS HEIGHT
SEE NOTE 6


.480
.460 HEIGHT OF ENCAPSULATION
.440
MAX HARNESS HEIGHT
SEE NOTE 6


.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO.S 20,21,22, AND 23 TO FIND NO.1 BEFORE ENCAPSULATION
SEE NOTE 5
20
29
.350
.370 REF
.480
.460
REF
Z
Z
1.681
1.691
.109
.119
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
16
SEE NOTES 9 AND 10
31
22
SEE NOTE 5
30
21
SEE NOTE 5
32
23
SEE NOTE 5
24
33
ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± — DECIMALS — ANGLES ± — DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB CAMBRIDGE MASS DWG NO	MANNED SPACECRAFT CENTER HOUSTON TEXAS
MATERIAL —	DRAWN R J Fox DATE 29 SEP 64 CHECKED 6 Oct 64 APPROVAL 8 Oct 64 APPROVAL 11-23-64	FRAME ASSEMBLY TRAY 1
HEAT TREATMENT —	NASA APPROVAL W J Rhine 11-24-64	CODE IDENT NO — SIZE E — NASA DRAWING NO 1007531
FINAL FINISH —	MIT APPROVAL	SCALE 1/1 — WT — SHEET 2 OF 2

1007531 F

NOTICE — WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
REVISIONS					
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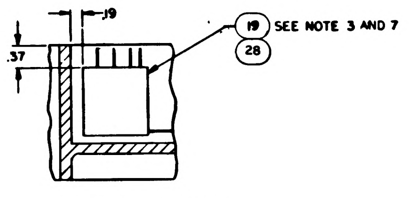
F		REVISED PER TDRR 15948			
G		REVISED PER TDRR 16267		5 FEB 65	



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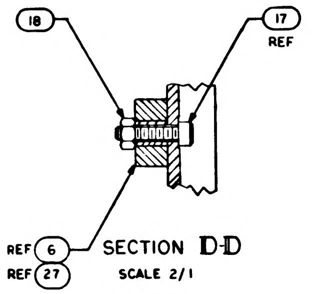
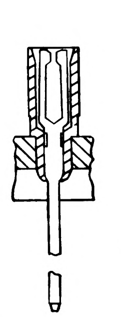
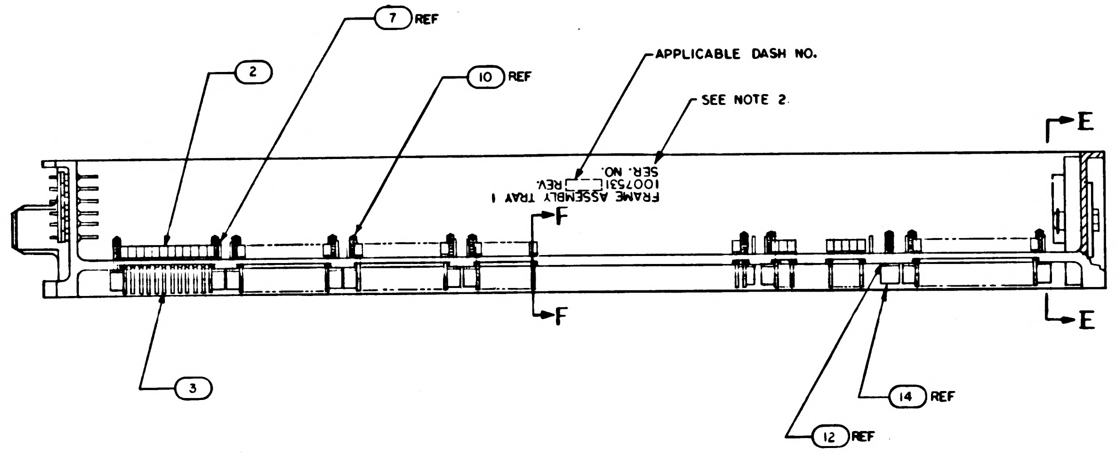
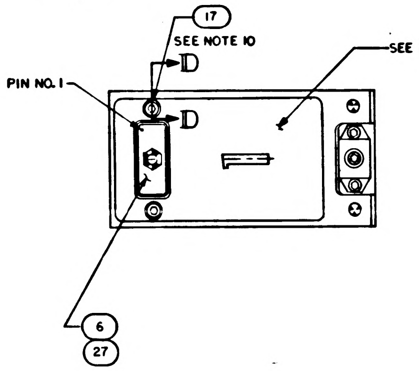


SECTION D-D
SCALE 2/1



PARTIAL SECTION F-F
149 PLACES





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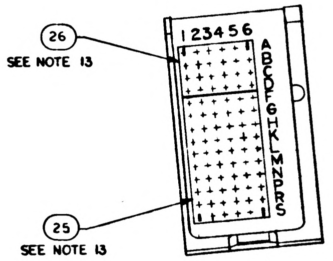
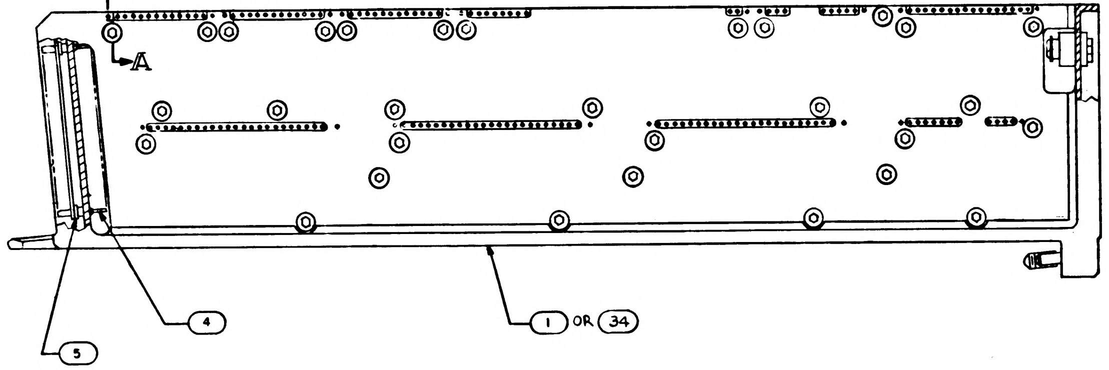
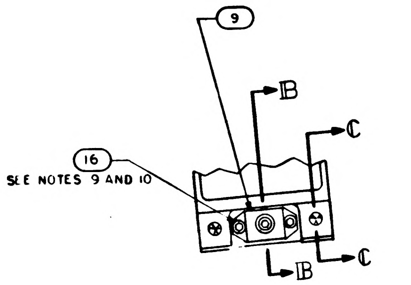
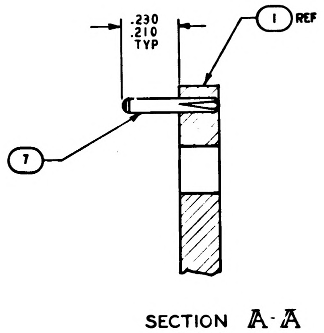
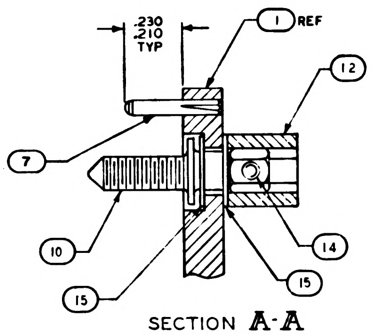




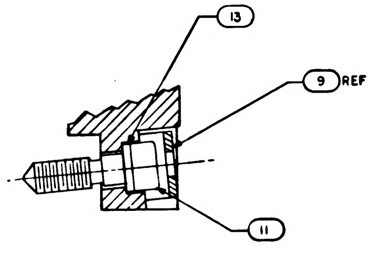




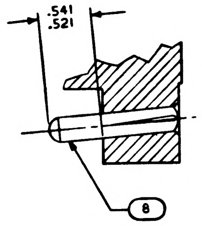
SECTION A-A
SCALE 4/1
-011 CONFIGURATION



SECTION A-A
SCALE 4/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A1E7	45A1J1-12
E8	-3
E9	-33
E10	-17
45A1E11	45A1J1-18

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND 1002019 BLACK, .100/.140 HIGH & SERIALIZE PER ND 1002023.
3. BOND FIND NO 19 TO FIND NO.1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686.
4. ASSEMBLE FIND NUMBERS 2,3,4 AND 5 PER ND 1002136
5. BOND FIND NO'S 20,21,22,23 AND 24 TO FIND NO.1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19, OR FIND NO. 28.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO.16 DURING ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NO.S 16 AND 17 TO FIND NO 1 TO BE 5.0—5.5 IN.LB.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005 ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PEP ND 1002071 ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS
12. PROCURE PER PS 1007141.
13. BOND FIND NO'S. 25 AND 26 TO FIND NO. 5 PER ND 1002237.

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		QUANTITY REQUIRED			LIST OF MATERIALS		
		–	1		1008521	FRAME	34
		–	1		1008620	WIRING LIST AA	33
		–	1		1008619	WIRING HARNESS D	32
		–	1		1008618	WIRING HARNESS C	31
		–	1		1008617	WIRING HARNESS B	30
		–	1		1008616	WIRING HARNESS A	29
		–	1		1007586 011	BUFFER RESISTOR ASSY	28
		-	╳		1009561	WIRING DIAGRAM	REF
		╳	–		1009551	WIRING DIAGRAM	REF
		–	1		1010821-1	CONNECTOR, RECEPTACLE	27
		1	1		1008551	GASKET, CONNECTOR TRAY	26
		1	1		1008552	GASKET, CONNECTOR TRAY	25
		1	–		1015741	WIRE LIST AA	24
		1	–		1015740	WIRING HARNESS D	23
		1	–		1015739	WIRING HARNESS C	22
		1	–		1015738	WIRING HARNESS B	21
		1	–		1015737	WIRING HARNESS A	20
		1	–		1007088	BUFFER RESISTOR ASSY	19
		2	2		MA21045 C 04	NUT SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET, HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET, HEAD	16
		30	–		MS171433	PIN, SPRING	15
		30	–		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		60	–		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		30	–		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		20	20		1010620-4	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT BLADE EDGE CONNECTOR	4
		149	149		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		149	149		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	–		1008101	FRAME	1

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL ——
HEAT TREATMENT ——
FINAL FINISH ——

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN DATE 29 SEP 64
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

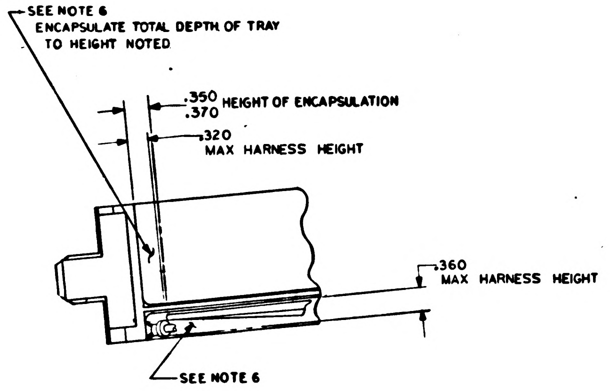
FRAME ASSEMBLY
TRAY 1

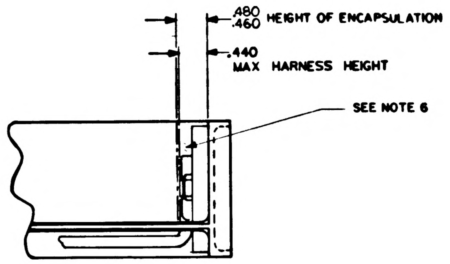
CODE IDENT NO. SIZE E NASA DRAWING NO 1007531
SCALE 1/1 WT SHEET 1 OF 2

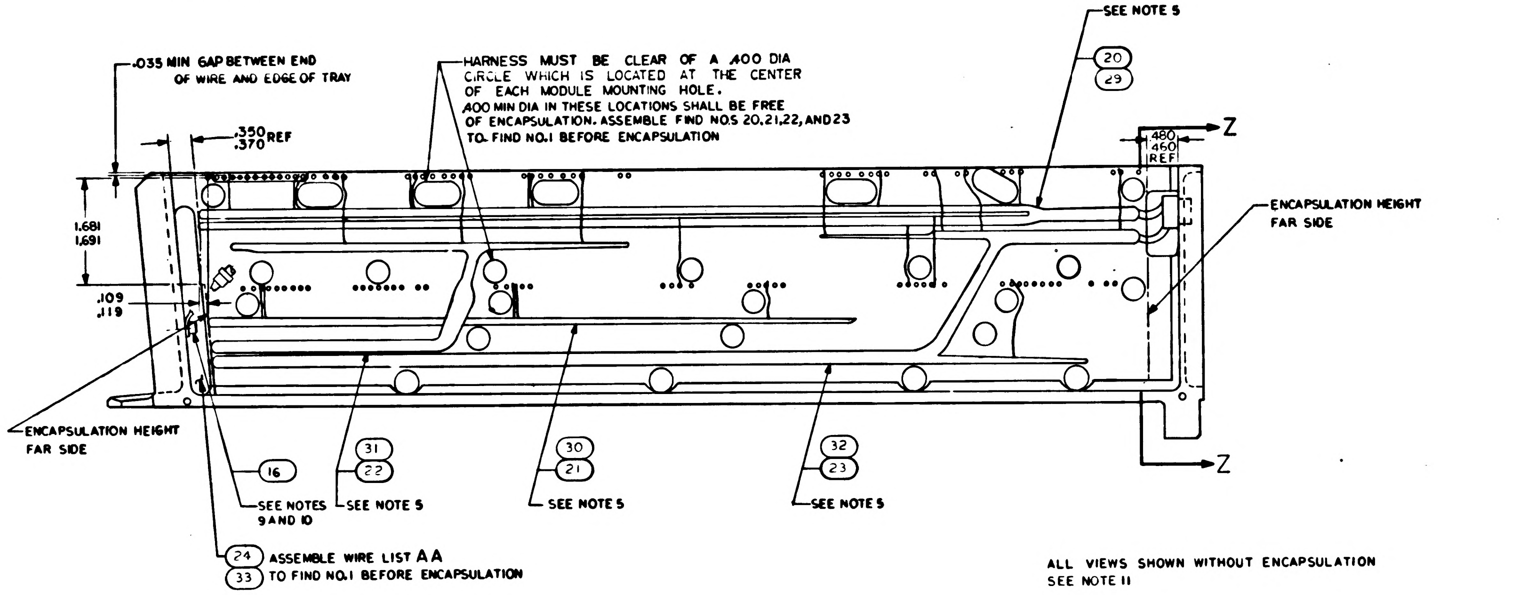
NOTICE — WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

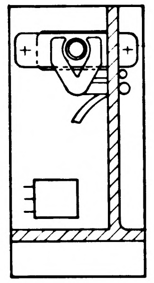
SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR 13939	11/4/64	WK
E	REVISED PER TDRR 15150	29 Dec 64	
F	REVISED PER TDRR 15948	11 FEB 65	
G	REVISED PER TDRR 16267	15 FEB 65	


SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY
TO HEIGHT NOTED
.350
.370 HEIGHT OF ENCAPSULATION
.320
MAX HARNESS HEIGHT
.360
MAX HARNESS HEIGHT
SEE NOTE 6


.480
.460 HEIGHT OF ENCAPSULATION
.440
MAX HARNESS HEIGHT
SEE NOTE 6


SEE NOTE 5
20
29
.035 MIN GAP BETWEEN END
OF WIRE AND EDGE OF TRAY
HARNESS MUST BE CLEAR OF A .400 DIA
CIRCLE WHICH IS LOCATED AT THE CENTER
OF EACH MODULE MOUNTING HOLE.
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE
OF ENCAPSULATION. ASSEMBLE FIND NO.S 20,21,22, AND 23
TO FIND NO.1 BEFORE ENCAPSULATION
.350
.370 REF
.480
.460
REF
Z
Z
1.681
1.691
.109
.119
ENCAPSULATION HEIGHT
FAR SIDE
ENCAPSULATION HEIGHT
FAR SIDE
16
31
22
30
21
32
23
SEE NOTES
9 AND 10
SEE NOTE 5
SEE NOTE 5
SEE NOTE 5
24
33
ASSEMBLE WIRE LIST AA
TO FIND NO.1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



SECTION Z-Z

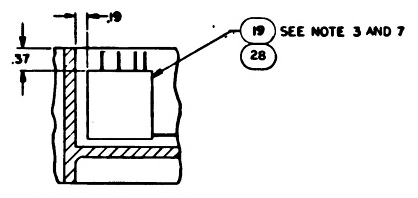
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

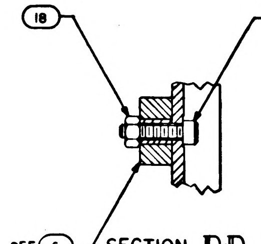
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± —— DECIMALS —— ANGLES ± —— DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB CAMBRIDGE MASS DWG NO DRAWN R. J. Fox DATE 29 SEP 64 CHECKED 6 OCT 64 APPROVAL 8 OCT 64 APPROVAL	MANNED SPACECRAFT CENTER HOUSTON, TEXAS FRAME ASSEMBLY TRAY 1
MATERIAL ——		
HEAT TREATMENT ——	NASA APPROVAL 1-14-64	CODE IDENT NO. · SIZE E · NASA DRAWING NO 1007531
FINAL FINISH ——	MIT APPROVAL	SCALE 1/1 · WT · SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
		REPLACES WORD DWG REV C PER TDRR 13737		[illegible]	WH
E		REVISED PER TDRR 15150		[illegible]	WH
F		REVISED PER TDRR 15948		FEB	
G		REVISED PER TDRR 16267		5 FEB 65	JWP
H		REVISED PER TDRR 17613		24 MAR 65	RJJ

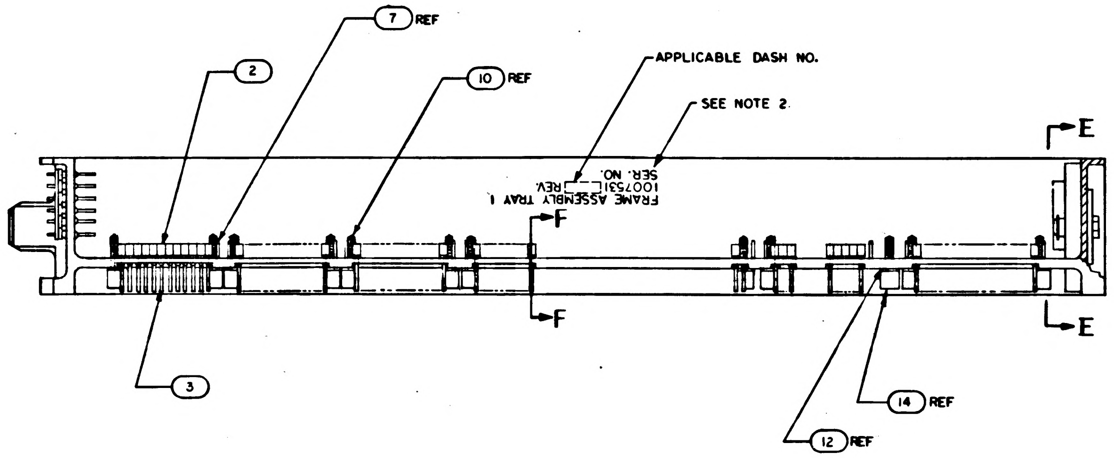


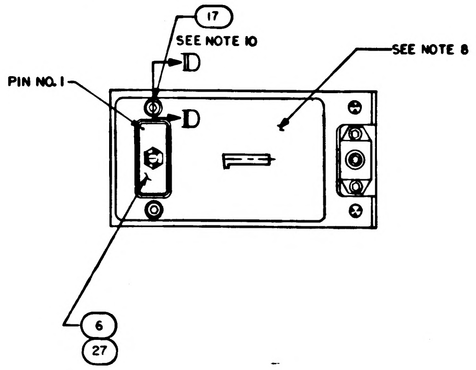
PARTIAL SECTION E-E

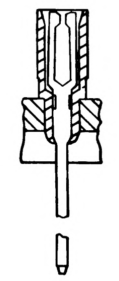


SECTION D-D

SCALE 2/1

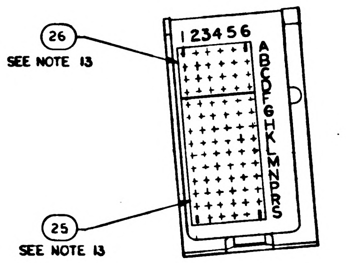


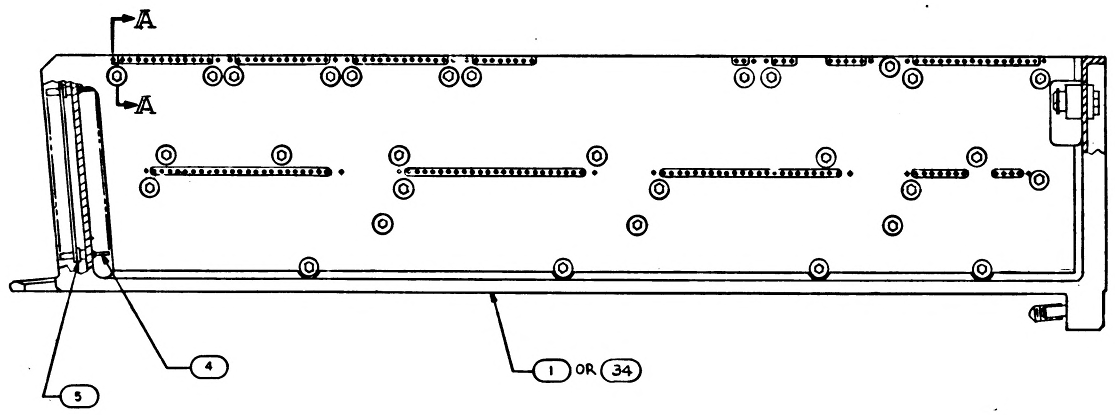


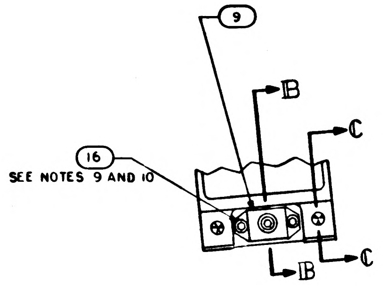


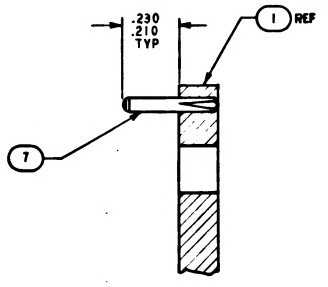
PARTIAL SECTION F-F
149 PLACES

Ⓓ REPLACES WORD DWG REV C





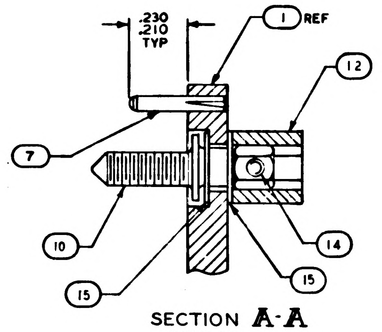




SECTION A-A

SCALE 4/1

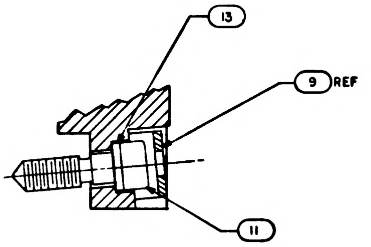
-011 CONFIGURATION



SECTION A-A

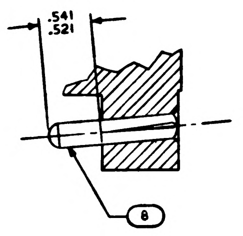
SCALE 4/1

-021 CONFIGURATION



SECTION B-B

SCALE 2/1



SECTION C-C

SCALE 2/1

TERMINATION CHART	
FROM	TO
45A1E7	45A1J1-12
↕ E8	↕ -3
E9	-33
E10	-17
45A1E11	45A1J1-18

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND 1002019 BLACK, .100/.140 HIGH & SERIALIZE PER ND 1002023.
3. BOND FIND NO 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686.
4. ASSEMBLE FIND NUMBERS 2,3,4 AND 5 PER ND 1002136
5. BOND FIND NO'S 20,21,22,23 AND 24 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) .010 ABOVE TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME UNLESS OTHERWISE SPECIFIED.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19, OR FIND NO. 28.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NO.S 16 AND 17 TO FIND NO 1 TO BE 5.0–5.5 IN. LB.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005 ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071 ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS

12. PROCURE PER PS 1007141.
13. BOND FIND NO'S. 25 AND 26 TO FIND NO. 5 PER ND 1002237.

		QUANTITY REQUIRED 021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		–	1		1008521	FRAME	34
		–	1		1008620	WIRING LIST AA	33
		–	1		1008619	WIRING HARNESS D	32
		–	1		1008618	WIRING HARNESS C	31
		–	1		1008617	WIRING HARNESS B	30
		–	1		1008616	WIRING HARNESS A	29
		–	1		1007586-011	BUFFER RESISTOR ASSY	28
		-	X		1009561	WIRING DIAGRAM	REF
		X	–		1009551	WIRING DIAGRAM	REF
		–	1		1010821-1	CONNECTOR, RECEPTACLE	27
		1	1		1008551	GASKET, CONNECTOR TRAY	26
		1	1		1008552	GASKET, CONNECTOR TRAY	25
		1	–		1015741	WIRE LIST AA	24
		1	–		1015740	WIRING HARNESS D	23
		1	–		1015739	WIRING HARNESS C	22
		1	–		1015738	WIRING HARNESS B	21
		1	–		1015737	WIRING HARNESS A	20
		1	–		1007088	BUFFER RESISTOR ASSY	19
		2	2		MA21045 C 04	NUT SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET, HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET, HEAD	16
		30	–		MS171433	PIN, SPRING	15
		30	–		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		60	–		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		30	–		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		20	20		1010620-4	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT BLADE EDGE CONNECTOR	4
		149	149		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		149	149		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	–		1008101	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN R J Fox DATE 23 SEP 64
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY I

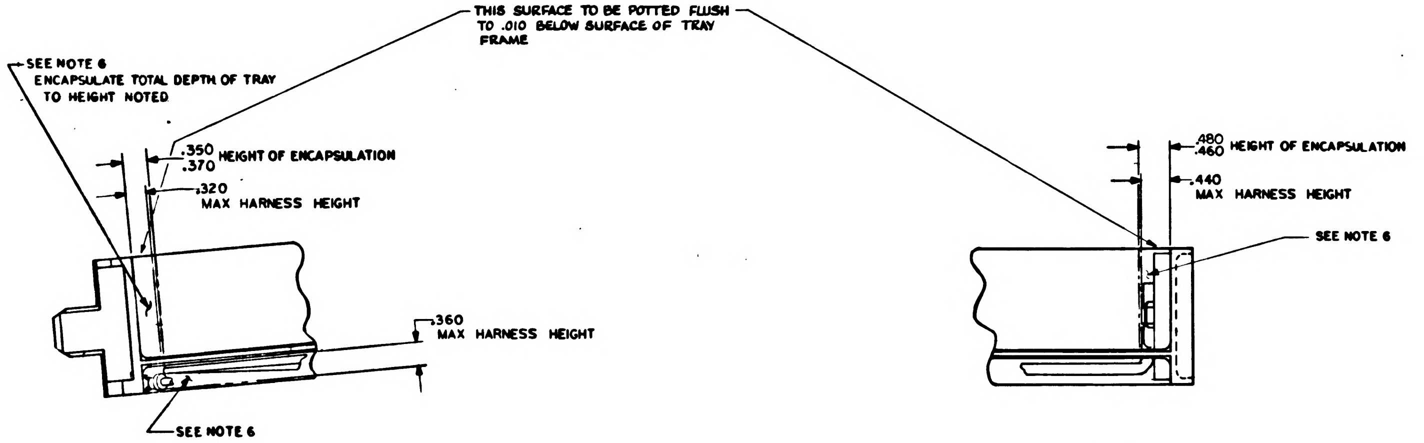
CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007531
SCALE 1/1
WT
SHEET 1 OF 2

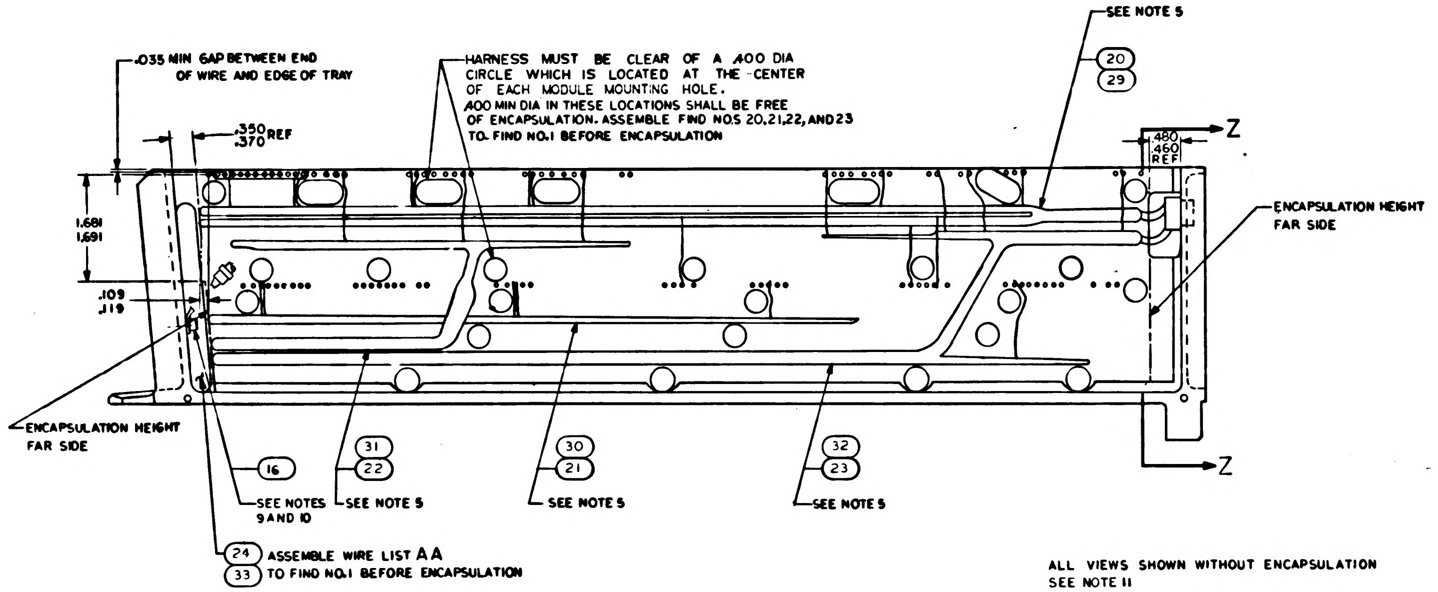
1007531 H

NOTICE -- WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

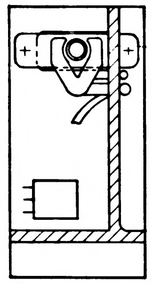
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR 13939	11/6/69	WK
E	REVISED PER TDRR 15150	29 Dec 64	[illegible]
F	REVISED PER TDRR 15948	11 FEB 65	JJJ
G	REVISED PER TDRR 16267	25 FEB 65	JL P
H	REVISED PER TDRR 17613	26 MAR 65	RJJ


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.350
.370 HEIGHT OF ENCAPSULATION
.320 MAX HARNESS HEIGHT
.360 MAX HARNESS HEIGHT
SEE NOTE 6
.480
.460 HEIGHT OF ENCAPSULATION
.440 MAX HARNESS HEIGHT
SEE NOTE 6


SEE NOTE 5
20
29
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO.S 20,21,22, AND 23 TO FIND NO.1 BEFORE ENCAPSULATION
.350
.370 REF
.480
.460
REF
Z
1.681
1.691
.109
.119
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
16
31
22
30
21
32
23
Z
SEE NOTES 9 AND 10
SEE NOTE 5
SEE NOTE 5
SEE NOTE 5
24
33
ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
DRAWN R. J. Fox DATE 29 SEP 64
CHECKED [illegible] 6 OCT 64
APPROVAL [illegible] 9 OCT 64
APPROVAL [illegible] 11-28-64
NASA APPROVAL W J R[illegible] 11-24-64
MIT APPROVAL [illegible]

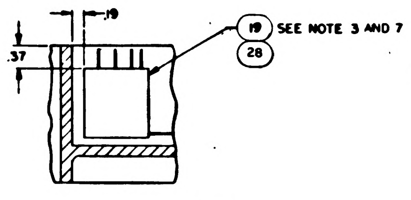
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 1

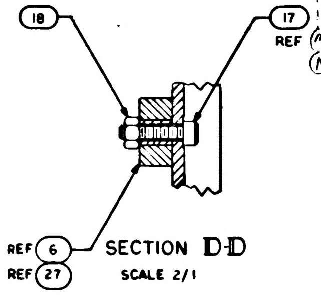
CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007531
SCALE 1/1
WT
SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

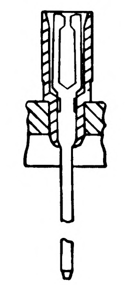
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
D		REPLACES WORD DWG REV C PER TDRR [illegible]		[illegible]	WH
E		REVISED PER TDRR 15150		[illegible]	WH
F		REVISED PER TDRR 15948		11 FEB	[illegible]
G		REVISED PER TDRR 16267		18 FEB 65	JWP
H		REVISED PER TDRR 17613		24 MAR 65	RJJ W.D.
J		REVISED PER TDRR 18690		4 May 65	WD E.F.



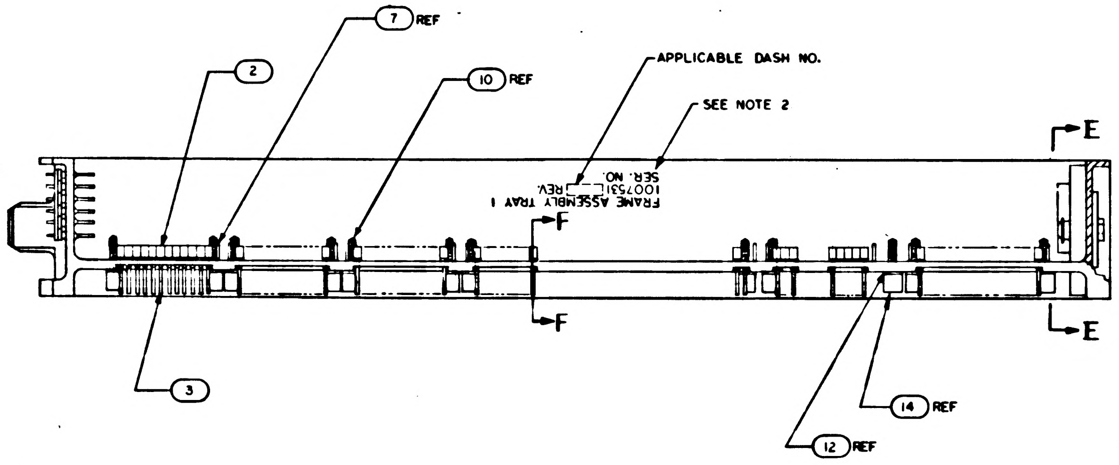
PARTIAL SECTION E-E

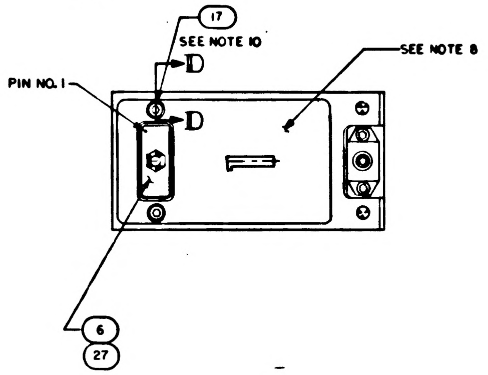


SECTION D-D
SCALE 2/1

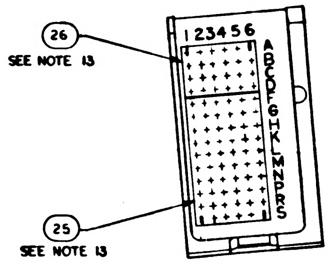


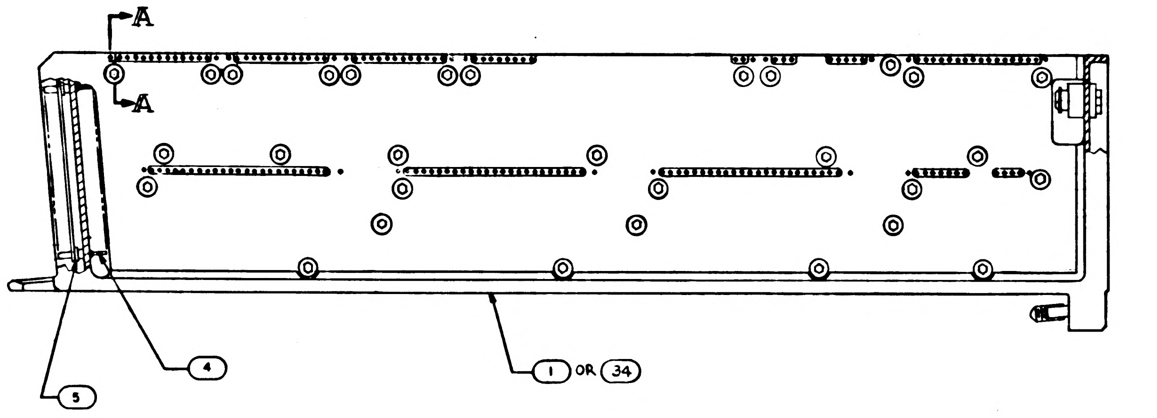
PARTIAL SECTION F-F
149 PLACES

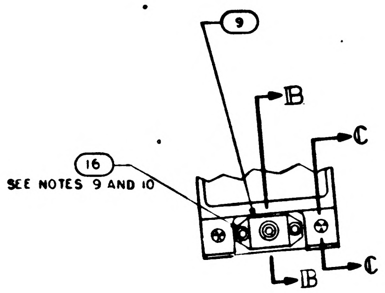


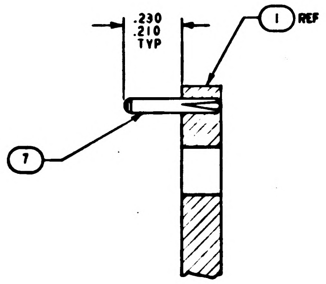


Ⓓ REPLACES WORD DWG REV C

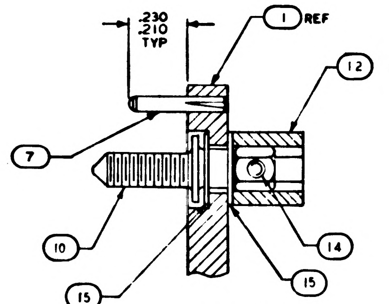




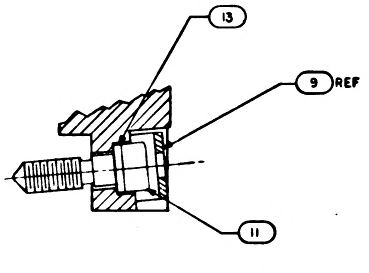




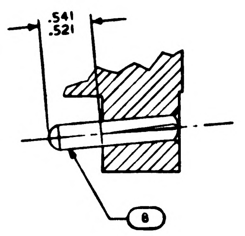
SECTION A-A
SCALE 4/1
-011 CONFIGURATION



SECTION A-A
SCALE 4/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A1E7	45A1J1-12
E8	-3
E9	-33
E10	-17
45A1E11	45A1J1-18

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND 1002019 BLACK, .100/.140 HIGH & SERIALIZE PER ND 1002023.
3. BOND FIND NO 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686.
4. ASSEMBLE FIND NUMBERS 2,3,4 AND 5 PER ND 1002136
5. BOND FIND NO'S 20,21,22,23 AND 24 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) .010 ABOVE TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME UNLESS OTHERWISE SPECIFIED.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19, OR FIND NO. 28.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NO.S 16 AND 17 TO FIND NO 1 TO BE 5.0–5.5 IN. LB.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005 ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071 ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS
12. PROCURE PER PS 1007141.
13. BOND FIND NO'S. 25 AND 26 TO FIND NO. 5 PER ND 1002257.

QUANTITY REQUIRED							
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		–	1		1008521	FRAME	34
		–	1		1008620	WIRING LIST A A	33
		–	1		1008619	WIRING HARNESS D	32
		–	1		1008618	WIRING HARNESS C	31
		–	1		1008617	WIRING HARNESS B	30
		–	1		1008616	WIRING HARNESS A	29
		–	1		1007586-011	BUFFER RESISTOR ASSY	28
		–	X		1009561	WIRING DIAGRAM	REF
		X	–		1009551	WIRING DIAGRAM	REF
		–	1		1010821-1	CONNECTOR, RECEPTACLE	27
		1	1		1008551	GASKET, CONNECTOR TRAY	26
		1	1		1008552	GASKET, CONNECTOR TRAY	25
		1	–		1015741	WIRE LIST AA	24
		1	–		1015740	WIRING HARNESS D	23
		1	–		1015739	WIRING HARNESS C	22
		1	–		1015738	WIRING HARNESS B	21
		1	–		1015737	WIRING HARNESS A	20
		1	–		1007088	BUFFER RESISTOR ASSY	19
		2	2		MA21045 C 04	NUT SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET, HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET, HEAD	16
		30	–		MS171433	PIN, SPRING	15
		30	–		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		60	–		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		30	–		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		20	20		MS [illegible] 556-604	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT BLADE EDGE CONNECTOR	4
		149	149		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		149	149		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	–		1008101	FRAME	1

LIST OF MATERIALS

100571		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL ———
HEAT TREATMENT ———
FINAL FINISH ———

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN R J Fox DATE 23 SEP 64
CHECKED [illegible] 6 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible]
NASA APPROVAL W J Rhine 10-9-64
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

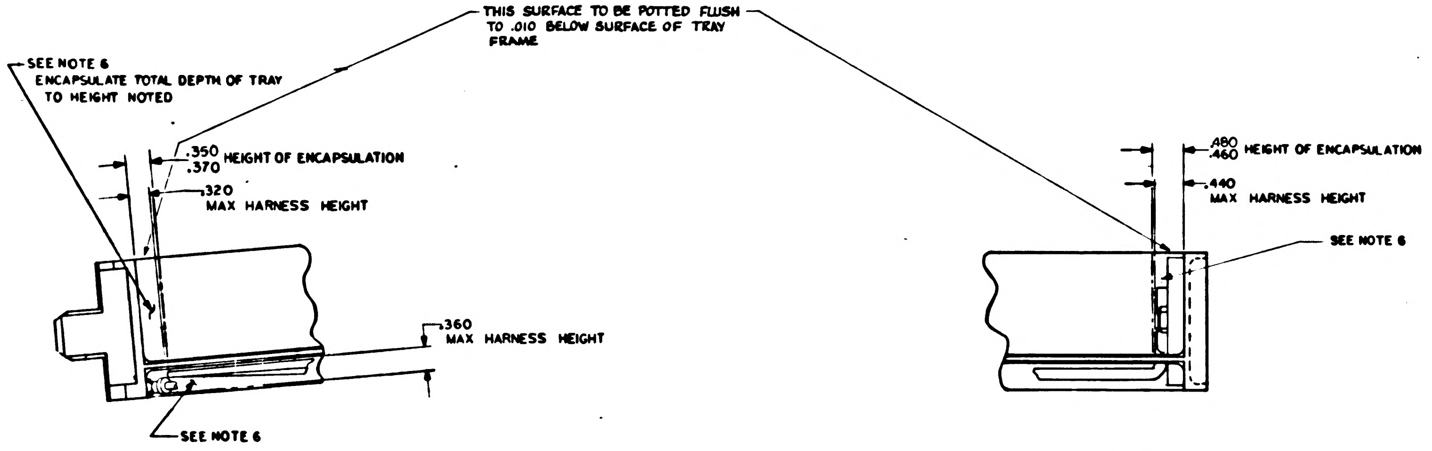
FRAME ASSEMBLY
TRAY I

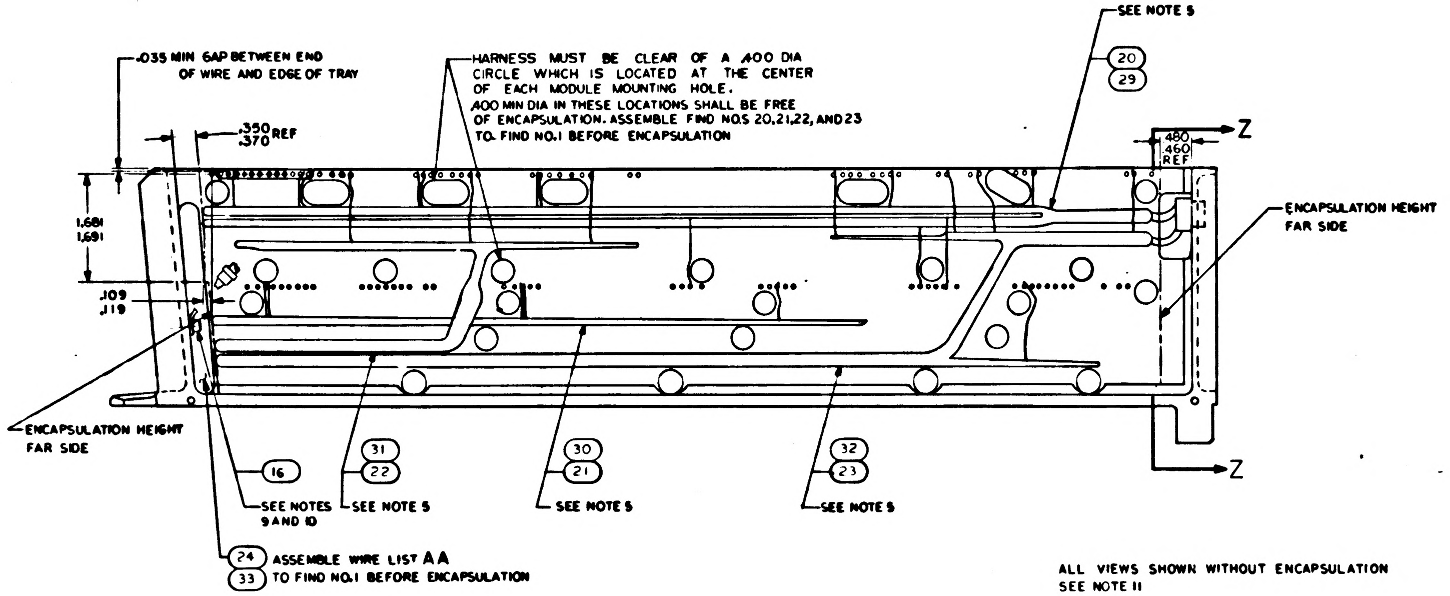
CODE IDENT NO. SIZE E NASA DRAWING NO. 1007531
SCALE 1/1 WT SHEET 1 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

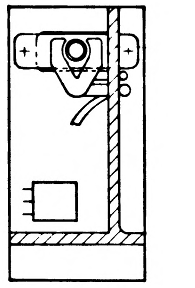
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR 13939	11/6/69	WK
E	REVISED PER TDRR 15150	29 Dec 64	WH
F	REVISED PER TDRR 15948	11 FEB 65	JJJ CW
G	REVISED PER TDRR 16267	25 FEB 65	JWP
H	REVISED PER TDRR 17613	26 MAR 65	RJJ WK
J	REVISED PER TDRR 18690.	4 MAY 65	


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.350
.370 HEIGHT OF ENCAPSULATION
.320 MAX HARNESS HEIGHT
.360 MAX HARNESS HEIGHT
SEE NOTE 6
.480
.460 HEIGHT OF ENCAPSULATION
.440 MAX HARNESS HEIGHT
SEE NOTE 6


.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS 20, 21, 22, AND 23 TO FIND NO.1 BEFORE ENCAPSULATION
SEE NOTE 5
20
29
.350
.370 REF
.480
.460 REF
Z
Z
1.681
1.691
.109
.119
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
16
31
22
30
21
32
23
SEE NOTES 9 AND 10
SEE NOTE 5
SEE NOTE 5
SEE NOTE 5
24
33
ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
DRAWN R. J. Fox DATE 29 SEP 64
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL W. A. [illegible] 11-24-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 1

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007531
SCALE 1/1
WT
SHEET 2 OF 2

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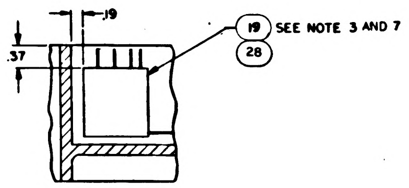
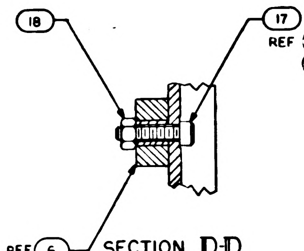
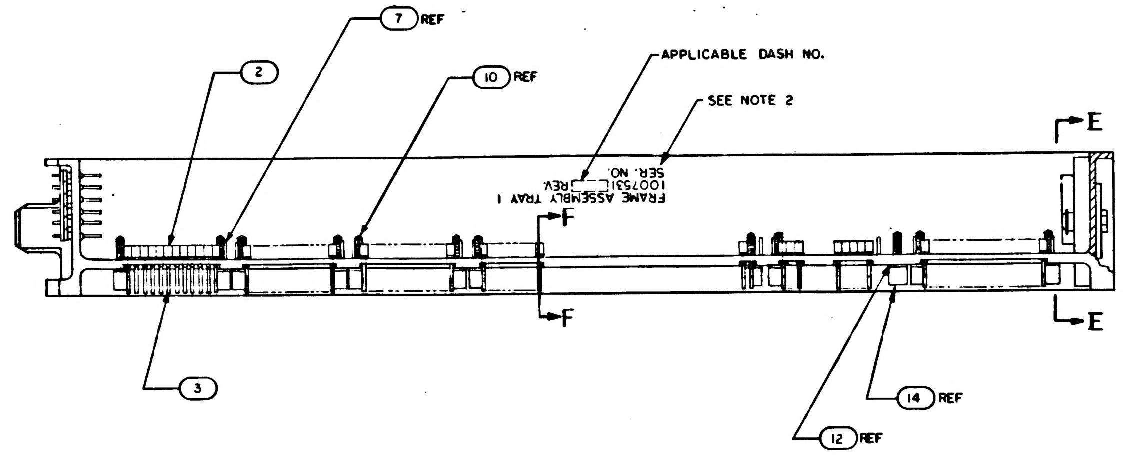
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
[illegible]		REPLACES WORD DWG REV C PER TDRR [illegible]		[illegible]	WR
E		REVISED PER TDRR 15150		29 [illegible] 64	WR
F		REVISED PER TDRR 15948		FEB [illegible]	[illegible]
G		REVISED PER TDRR 16267		15 FEB 65	CWP
H		REVISED PER TDRR 17613		24 MAR 65	RJJ W.D.
J		REVISED PER TDRR 18690		4 May 65	EF
K		REVISED PER TDRR 18691		6 MAY 65	JJJ EF

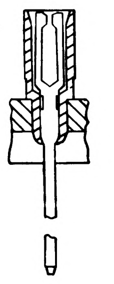


PARTIAL SECTION E-E

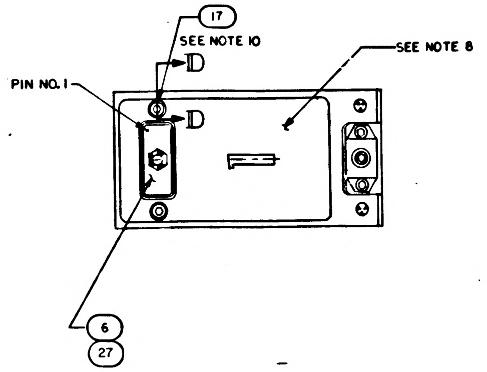


SECTION D-D
SCALE 2/1

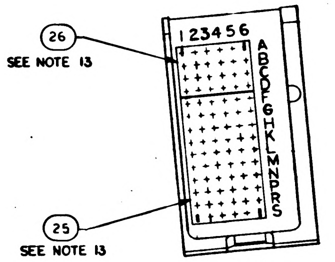


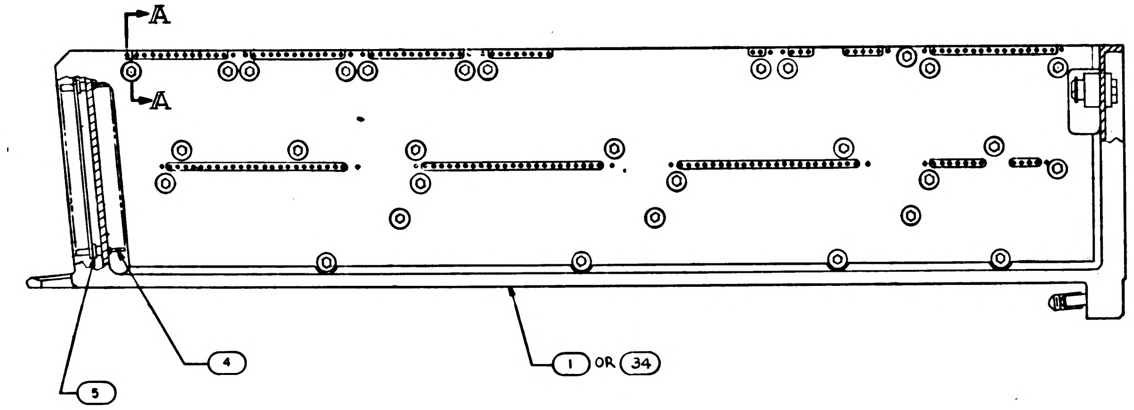


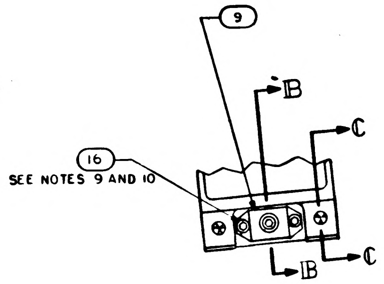
PARTIAL SECTION F-F
149 PLACES

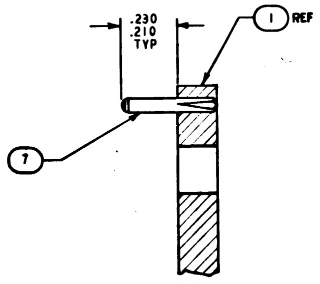


Ⓓ REPLACES WORD DWG REV C

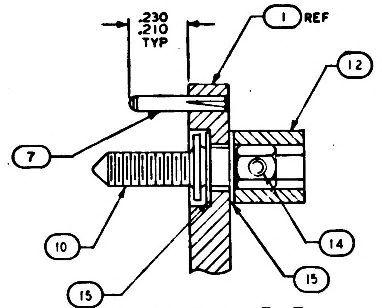




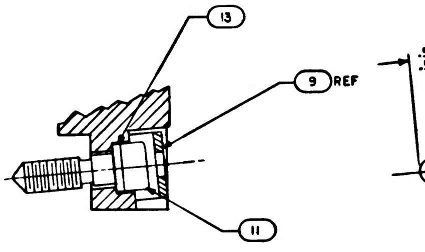




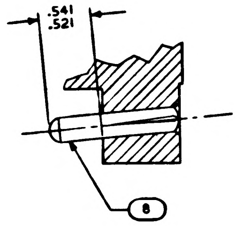
SECTION A-A
SCALE 4/1
-011 CONFIGURATION



SECTION A-A
SCALE 4/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A1E7	45A1J1-12
↑ E8	↑ -3
E9	-33
↓ E10	↓ -17
45A1E11	45A1J1-18

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND 1002019 BLACK, .100/.140 HIGH AND SERIALIZE PER ND 1002023.
3. BOND FIND NO. 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
4. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND 1002136
5. BOND FIND NOS. 20, 21, 22, 23 AND 24 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .180 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. SEE CONNECTOR TERMINATION CHART FOR FIND NO. 19, OR FIND NO. 28
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NOS. 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005 ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS 1007141.
13. BOND FIND NOS. 25 AND 26 TO FIND NO. 5 PER ND 1002237.
14. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.

		–	1		1008521	FRAME	34
		–	1		1008620	WIRING LIST AA	33
		–	1		1008619	WIRING HARNESS D	32
		–	1		1008618	WIRING HARNESS C	31
		–	1		1008617	WIRING HARNESS B	30
		–	1		1008616	WIRING HARNESS A	29
		–	1		1007586-011	BUFFER RESISTOR ASSY	28
		-	☒		1009561	WIRING DIAGRAM	REF
		☒	–		1009551	WIRING DIAGRAM	REF
		–	1		1010821-1	CONNECTOR, RECEPTACLE	27
		1	1		1008551	GASKET, CONNECTOR TRAY	26
		1	1		1008552	GASKET, CONNECTOR TRAY	25
		1	–		1015741	WIRE LIST AA	24
		1	–		1015740	WIRING HARNESS D	23
		1	–		1015739	WIRING HARNESS C	22
		1	–		1015738	WIRING HARNESS B	21
		1	–		1015737	WIRING HARNESS A	20
		1	–		1007088	BUFFER RESISTOR ASSY	19
		2	2		MA21045 C 04	NUT SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET, HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET, HEAD	16
		30	–		MS171433	PIN, SPRING	15
		30	–		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		60	–		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		30	–		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		20	20		MS16556-604	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT BLADE EDGE CONNECTOR	4
		149	149		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		149	149		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	–		1008101	FRAME	1
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
QUANTITY REQUIRED					LIST OF MATERIALS		

1007571		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL ———
HEAT TREATMENT ———
FINAL FINISH ———

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN R. J. Fox DATE 25 SEP 64
CHECKED [illegible] 6 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible] 10-28-64
NASA APPROVAL W. J. [illegible] 11-4-64
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 1

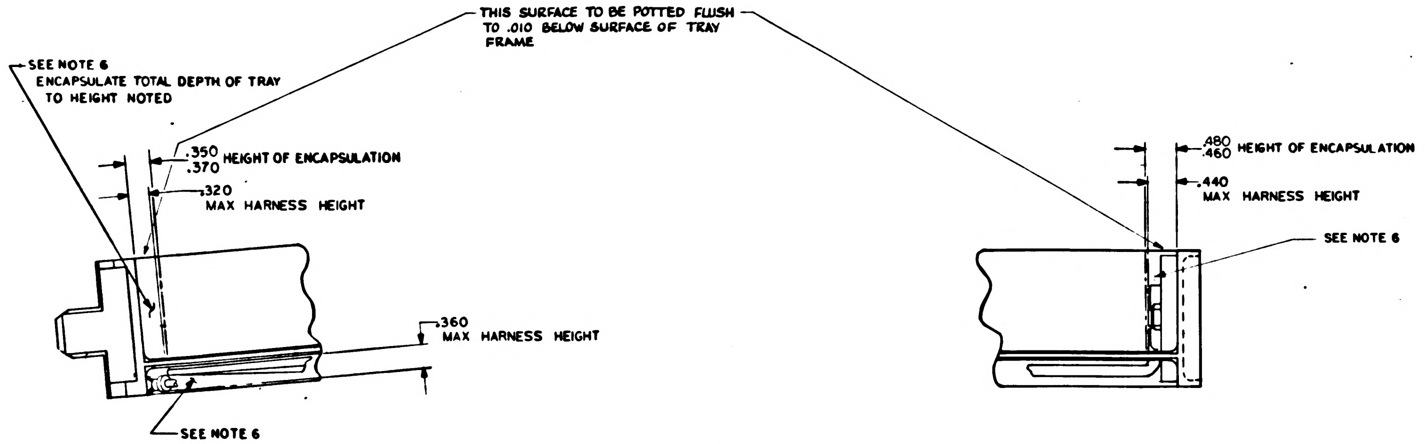
CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1007531
SCALE 1/1
WT
SHEET 1 OF 2

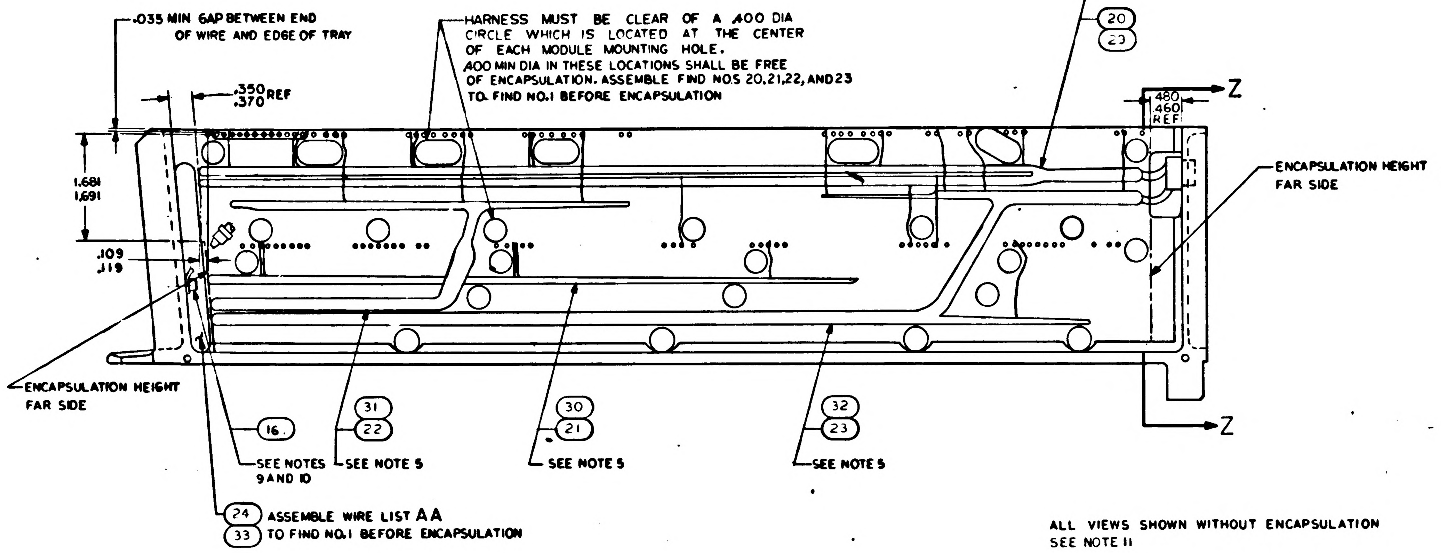
1007531 K

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

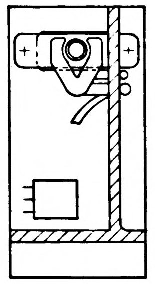
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR 13939	11/6/64	WK
E	REVISED PER TDRR 15150	29 Dec 64	WK
F	REVISED PER TDRR 15948	11 FEB 65	JJJ CW
G	REVISED PER TDRR 16267	15 FEB 65	JWP
H	REVISED PER TDRR 17613	24 MAR 65	RJJ WD
J	REVISED PER TDRR 18690.	4 MAY 65	WD. EF
K	REVISED PER TDRR 18691	6 MAY 65	JJJ EF


SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.350 .370 HEIGHT OF ENCAPSULATION
.320 MAX HARNESS HEIGHT
.360 MAX HARNESS HEIGHT
SEE NOTE 6
.480 .460 HEIGHT OF ENCAPSULATION
.440 MAX HARNESS HEIGHT
SEE NOTE 6


.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS 20,21,22, AND 23 TO FIND NO.1 BEFORE ENCAPSULATION
SEE NOTE 5
20
23
.350 .370 REF
.480 .460 REF
Z
1.681 1.691
.109 .119
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
Z
16.
31
22
30
21
32
23
SEE NOTES 9 AND 10
SEE NOTE 5
SEE NOTE 5
SEE NOTE 5
24
33
ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
DRAWN R J Fox DATE 29 SEP 64
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-22-64
NASA APPROVAL W J Rhine 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 1

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1007531
SCALE 1/1
WT
SHEET 2 OF 2

1007531 K

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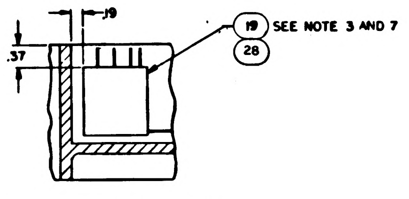
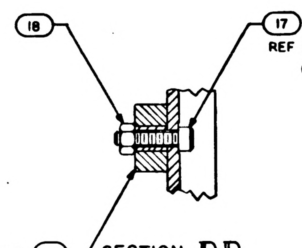
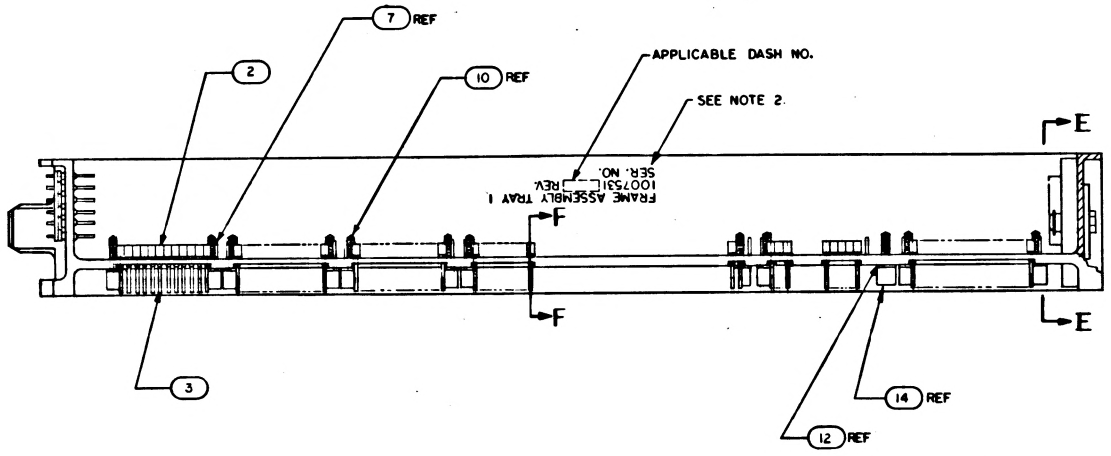
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
D		REPLACES WOPD DWG REV C PER TDRR 137[illegible]		[illegible]	WK
E		REVISED PER TDRR 15150		29 Dec 64	WK
F		REVISED PER TDRR 15948		1 FEB 65	JJ
G		REVISED PER TDRR 16267		8 FEB 65	WP
H		REVISED PER TDRR 17613		24 MAR 65	RJJ
J		REVISED PER TDRR 18690		[illegible] 65	[illegible]
K		REVISED PER TDRR 18691		6 MAY 65	JJ
L		REVISED PER TDRR 18695		[illegible] MAY 65	[illegible]

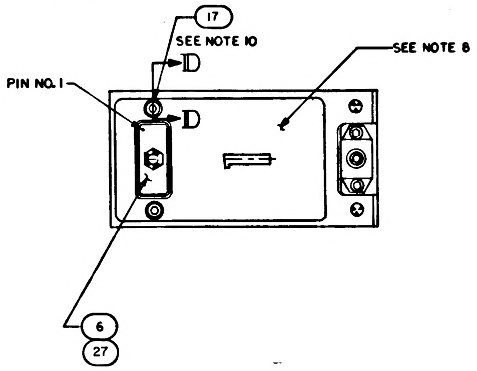


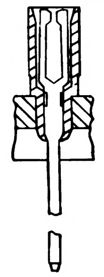
PARTIAL SECTION E-E



SECTION D-D
SCALE 2/1

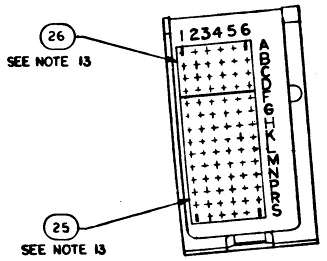


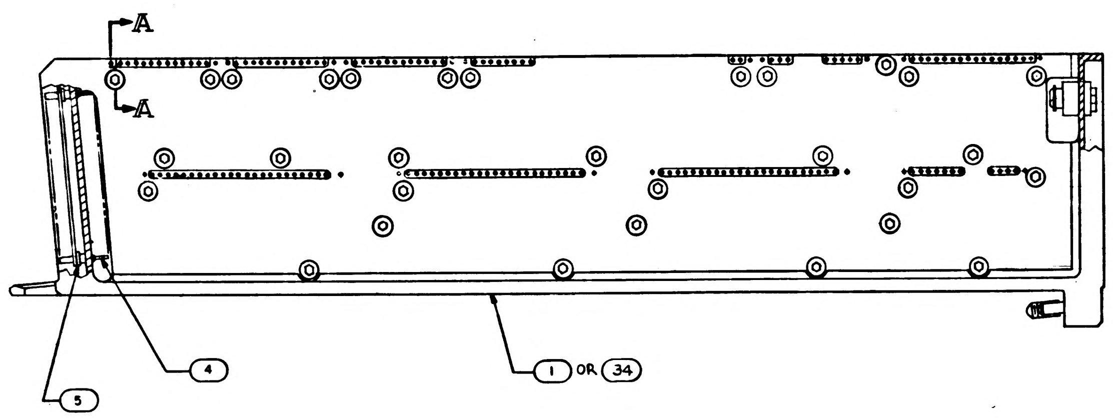


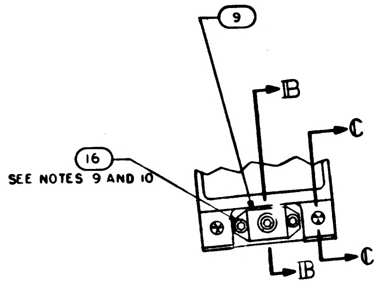


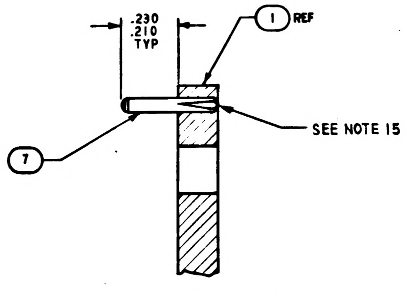
PARTIAL SECTION F-F
149 PLACES

Ⓓ REPLACES WOPD DWG REV C

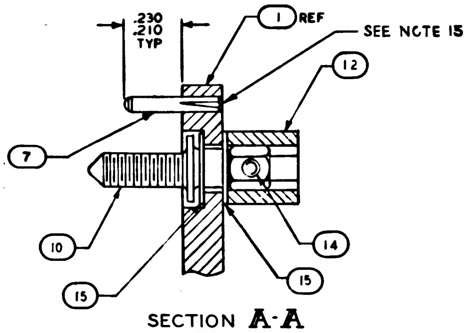




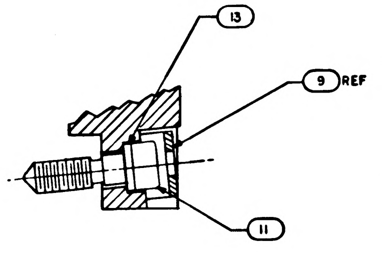




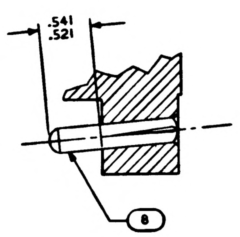
SECTION A-A
SCALE 4/1
-011 CONFIGURATION



SECTION A-A
SCALE 4/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A1E7	45A1J1-12
E8	-3
E9	-33
E10	-17
45A1E11	45A1J1-18

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND 1002019 BLACK, .100/.140 HIGH AND SERIALIZE PER ND 1002023.
3. BOND FIND NO. 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
4. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND 1002136
5. BOND FIND NOS. 20, 21, 22, 23 AND 24 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. SEE CONNECTOR TERMINATION CHART FOR FIND NO. 19, OR FIND NO. 28
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NOS. 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005 ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS 1007141.
13. BOND FIND NOS. 25 AND 26 TO FIND NO. 5 PER ND 1002237.
14. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.
15. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.

QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		021	011				
		–	1		1008521	FRAME	34
		–	1		1008620	WIRING LIST A A	33
		–	1		1008619	WIRING HARNESS D	32
		–	1		1008618	WIRING HARNESS C	31
		–	1		1008617	WIRING HARNESS B	30
		–	1		1008616	WIRING HARNESS A	29
		–	1		1007586-011	BUFFER RESISTOR ASSY	28
		–	╳		1009561	WIRING DIAGRAM	REF
		╳	–		1009551	WIRING DIAGRAM	REF
		–	1		1010821-1	CONNECTOR, RECEPTACLE	27
		1	1		1008551	GASKET, CONNECTOR TRAY	26
		1	1		1008552	GASKET, CONNECTOR TRAY	25
		1	–		1015741	WIRE LIST AA	24
		1	–		1015740	WIRING HARNESS D	23
		1	–		1015739	WIRING HARNESS C	22
		1	–		1015738	WIRING HARNESS B	21
		1	–		1015737	WIRING HARNESS A	20
		1	–		1007088	BUFFER RESISTOR ASSY	19
		2	2		MA21045 C 04	NUT SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET, HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET, HEAD	16
		30	–		MS171433	PIN, SPRING	15
		30	–		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		60	–		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		30	–		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		20	20		MS 16556-604	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT BLADE EDGE CONNECTOR	4
		149	149		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		149	149		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	–		1008101	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL ——
HEAT TREATMENT ——
FINAL FINISH ——

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN R J Fox DATE 23 SEP 64
CHECKED [illegible] 6 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible]
NASA APPROVAL W J Rhine 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY I

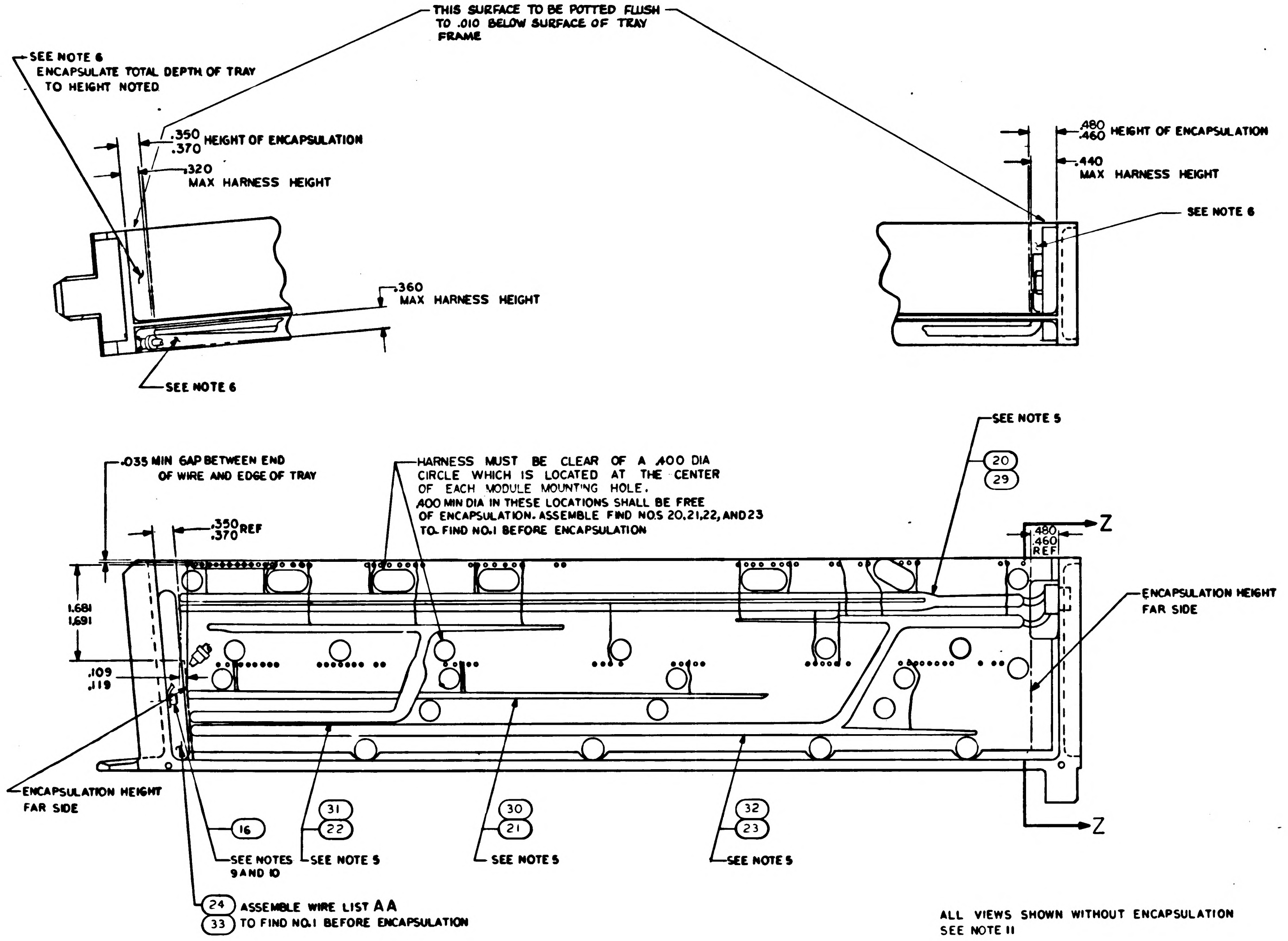
CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1007531
SCALE 1/1
WT
SHEET 1 OF 2

1007531L

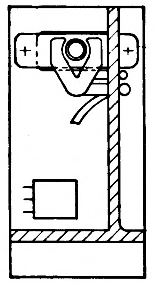
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR 13979	[illegible]	WK
E	REVISED PER TDRR 15150	29 Dec 64	[illegible]
F	REVISED PER TDRR 15948	11 FEB 65	JJ
G	REVISED PER TDRR 16267	25 FEB 65	JJP
H	REVISED PER TDRR 17613	26 MAR 65	RJJ
J	REVISED PER TDRR 18690.	4 MAY 65	[illegible]
K	REVISED PER TDRR 18691	6 MAY 65	[illegible]
L	REVISED PER TDRR 18695	11 MAY 65	[illegible]


SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.350
.370 HEIGHT OF ENCAPSULATION
.320
MAX HARNESS HEIGHT
.360
MAX HARNESS HEIGHT
SEE NOTE 6
.480
.460 HEIGHT OF ENCAPSULATION
.440
MAX HARNESS HEIGHT
SEE NOTE 6
SEE NOTE 5
20
29
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS 20,21,22, AND 23 TO FIND NO.1 BEFORE ENCAPSULATION
.350
.370 REF
.480
.460
REF
Z
Z
1.681
1.691
.109
.119
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
16
SEE NOTES 9 AND 10
31
22
SEE NOTE 5
30
21
SEE NOTE 5
32
23
SEE NOTE 5
24
33
ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± ___ DECIMALS ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
HEAT TREATMENT ___
FINAL FINISH ___

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN R. J. Fox DATE 29 SEP 64
CHECKED [illegible] 6 OCT 64
APPROVAL [illegible] 8 OCT 64
MIT APPROVAL [illegible]
NASA APPROVAL W J Rhine 11-24-64
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 1

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO 1007531
SCALE 1/1
WT
SHEET 2 OF 2

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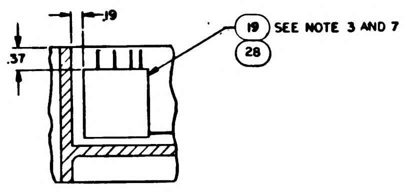
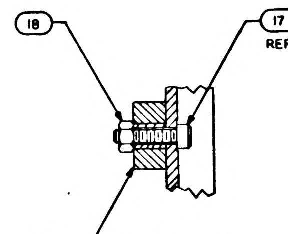


PARTIAL SECTION E-E



SECTION D-D
SCALE 2/1

REVISIONS					
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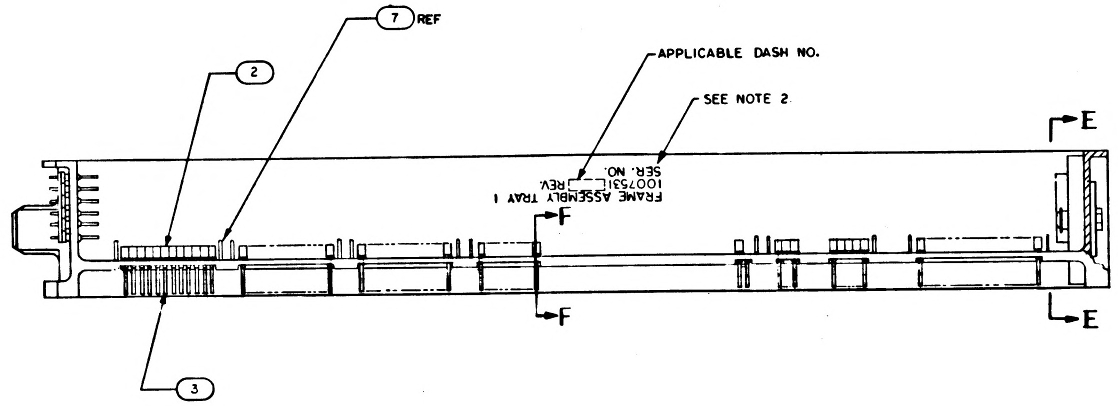
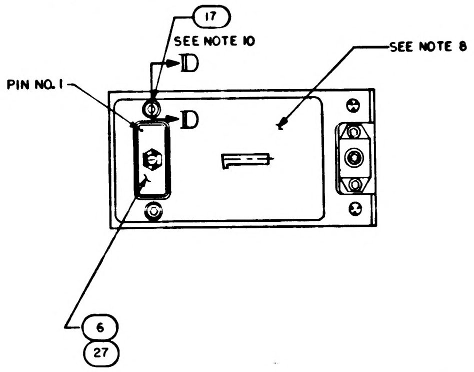
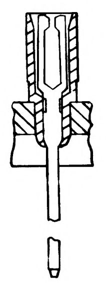
		REVISED PER TDRR 15948			
G		REVISED PER TDRR 16267		5 FEB 65	
H		REVISED PER TDRR 17613		24 MAR 65	RJJ
J		REVISED PER TDRR 18690			
K		REVISED PER TDRR 18691		6 MAY 65	
L		REVISED PER TDRR 18695			
M		REVISED PER TDRR 20119			

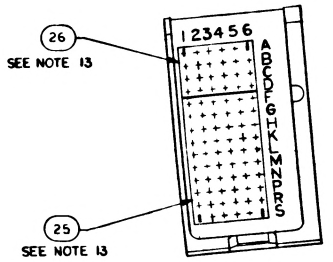


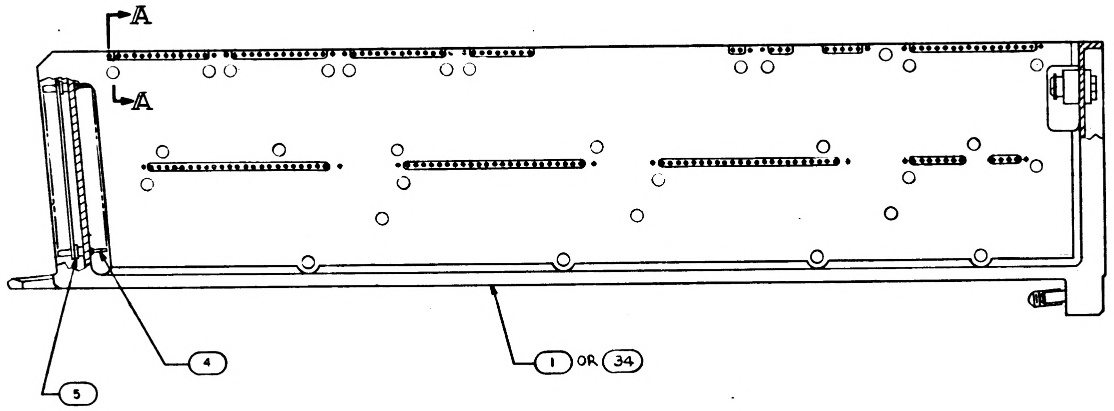


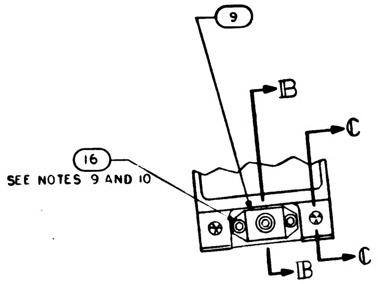


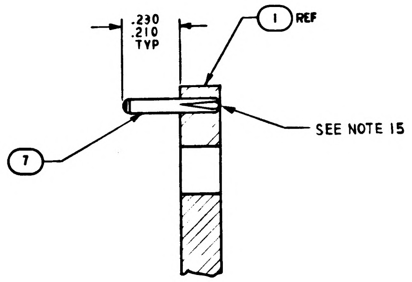
PARTIAL SECTION F-F
149 PLACES

Ⓓ REPLACES WORD DWG REV C

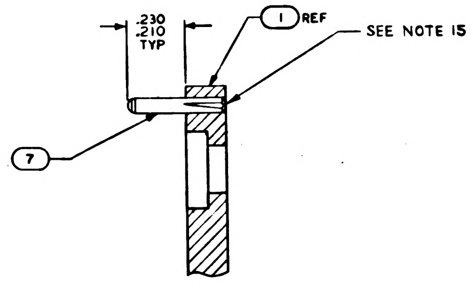




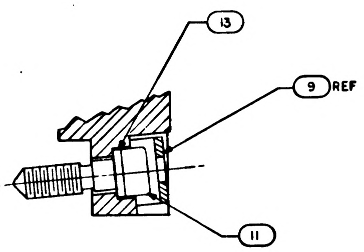




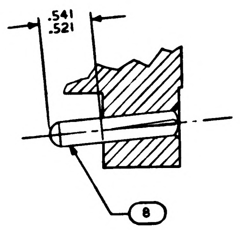
SECTION A-A
SCALE 4/1
-011 CONFIGURATION



SECTION A-A
SCALE 4/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

10
12
14
15

TERMINATION CHART	
FROM	TO
45A1E7	45A1J1-12
E8	-3
E9	-33
E10	-17
45A1E11	45A1J1-18

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND 1002019 BLACK, .100/.140 HIGH AND SERIALIZE PER ND 1002023.
3. BOND FIND NO. 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
4. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND 1002136
5. BOND FIND NOS. 20, 21, 22, 23 AND 24 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19, OR FIND NO. 28
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NOS. 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005 ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS 1007141.
13. BOND FIND NOS. 25 AND 26 TO FIND NO. 5 PER ND 1002237.
14. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.
15. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.

QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		021	011			LIST OF MATERIALS	
		–	1		1008521	FRAME	34
		–	1		1008620	WIRING LIST AA	33
		–	1		1008619	WIRING HARNESS D	32
		–	1		1008618	WIRING HARNESS C	31
		–	1		1008617	WIRING HARNESS B	30
		–	1		1008616	WIRING HARNESS A	29
		–	1		1007586-011	BUFFER RESISTOR ASSY	28
		–	╳		1009561	WIRING DIAGRAM	REF
		╳	–		1009551	WIRING DIAGRAM	REF
		–	1		1010821-1	CONNECTOR, RECEPTACLE	27
		1	1		1008551	GASKET, CONNECTOR TRAY	26
		1	1		1008552	GASKET, CONNECTOR TRAY	25
		1	–		1015741	WIRE LIST AA	24
		1	–		1015740	WIRING HARNESS D	23
		1	–		1015739	WIRING HARNESS C	22
		1	–		1015738	WIRING HARNESS B	21
		1	–		1015737	WIRING HARNESS A	20
		1	–		1007088	BUFFER RESISTOR ASSY	19
		2	2		MA21045 C 04	NUT SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET, HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET, HEAD	16
		~~30~~	~~–~~		~~MS171433~~	~~PIN, SPRING~~	15
		~~30~~	~~–~~		~~1004207~~	~~DRIVE CYLINDER~~	14
		1	1		1008099-2	WASHER	13
		~~60~~	~~–~~		~~1004206~~	~~WASHER, THRUST~~	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		~~30~~	~~–~~		~~1008172~~	~~SCREW, JACK~~	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		20	20		MS 16556-604	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT BLADE EDGE CONNECTOR	4
		149	149		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		149	149		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	–		1008101	FRAME	1

100·571		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL ——
HEAT TREATMENT ——
FINAL FINISH ——

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN R. J. Fox DATE 25 SEP 64
CHECKED [illegible] King 6 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible]
NASA APPROVAL W. J. [illegible] 11-4-64
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY I

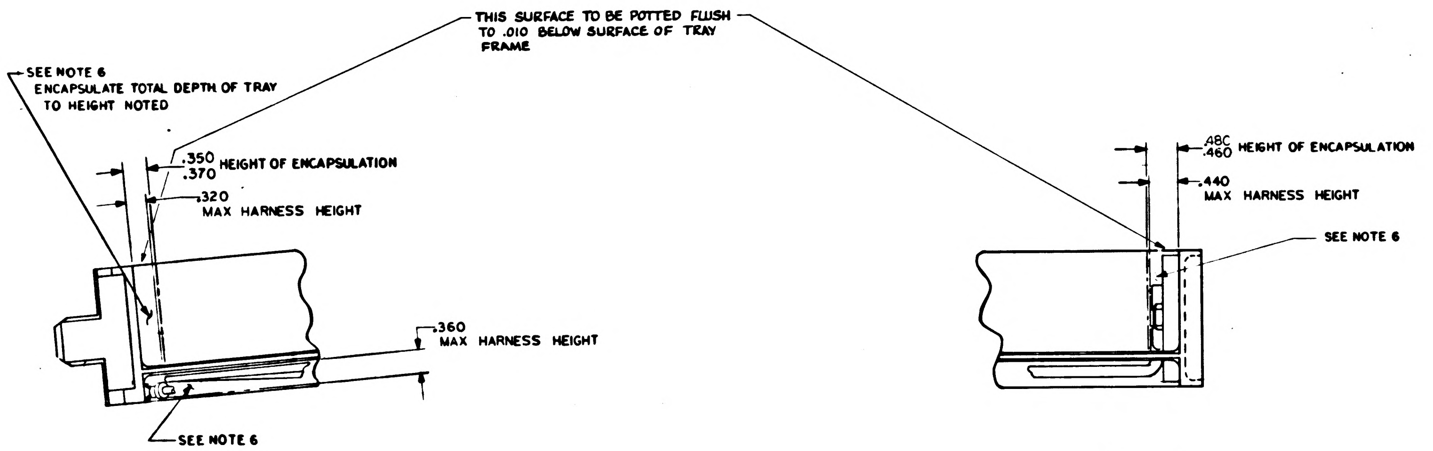
CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1007531
SCALE 1/1 WT
SHEET 1 OF 2

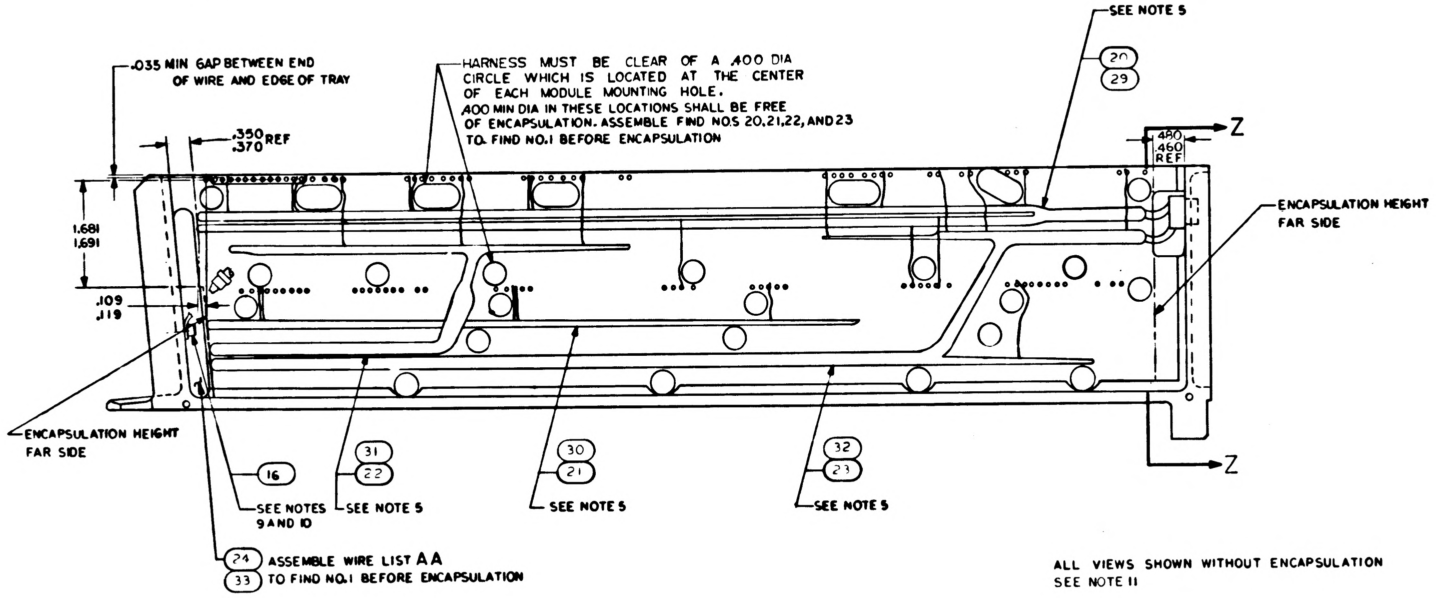
1007531M

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

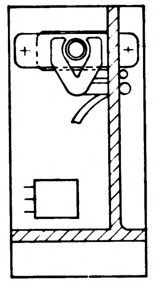
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR 13999	[illegible]	WK
E	REVISED PER TDRR 15150	29 Dec 64	[illegible]
F	REVISED PER TDRR 15948	FEB 65	[illegible]
G	REVISED PER TDRR 16267	5 FEB 65	[illegible]
H	REVISED PER TDRR 17613	26 MAR 65	R.U
J	REVISED PER TDRR 18690	[illegible] 65	[illegible]
K	REVISED PER TDRR 18691	[illegible] 65	[illegible]
L	REVISED PER TDRR 18695	[illegible] 65	[illegible]
M	REVISION STATUS CHANGED PER TDRR 20119	[illegible]	G


SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.350 .370 HEIGHT OF ENCAPSULATION
.320 MAX HARNESS HEIGHT
.360 MAX HARNESS HEIGHT
SEE NOTE 6
.480 .460 HEIGHT OF ENCAPSULATION
.440 MAX HARNESS HEIGHT
SEE NOTE 6


SEE NOTE 5
20
29
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS 20,21,22, AND 23 TO FIND NO.1 BEFORE ENCAPSULATION
.350 .370 REF
.480 .460 REF
Z
1.681 1.691
.109 .119
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
Z
16
31
22
30
21
32
23
SEE NOTES 9 AND 10
SEE NOTE 5
SEE NOTE 5
SEE NOTE 5
24
33
ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

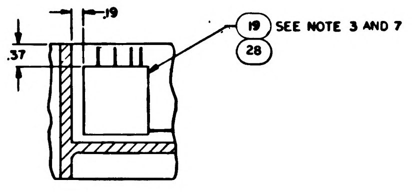
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
DRAWN R. J. Fox DATE 29 SEP 64
CHECKED [illegible] 6 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible]
NASA APPROVAL W. F. R[illegible] 10-4-64
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

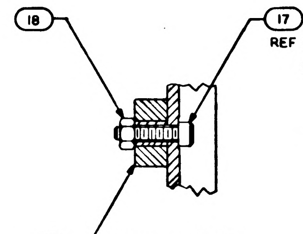
FRAME ASSEMBLY
TRAY 1

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007531
SCALE 1/1
WT
SHEET 2 OF 2

1007531 M



PARTIAL SECTION E-E



SECTION D-D
SCALE 2/1

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
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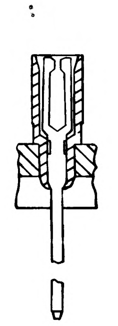
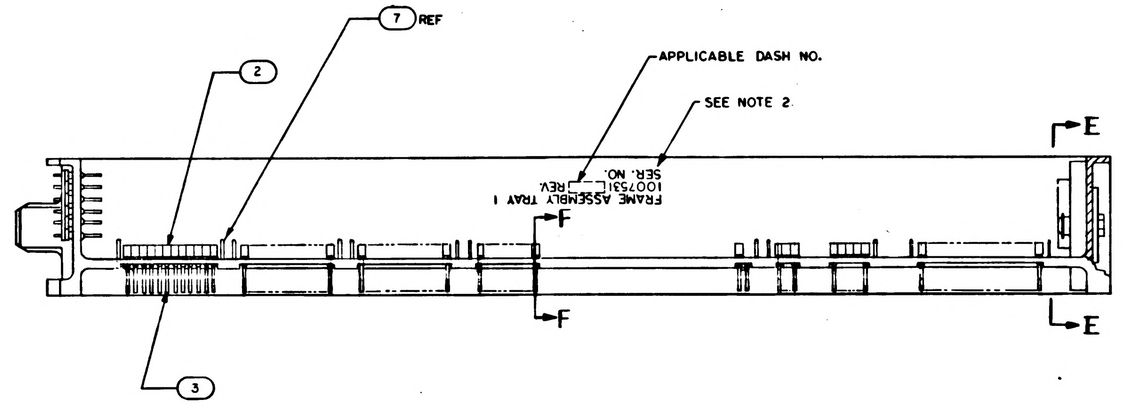
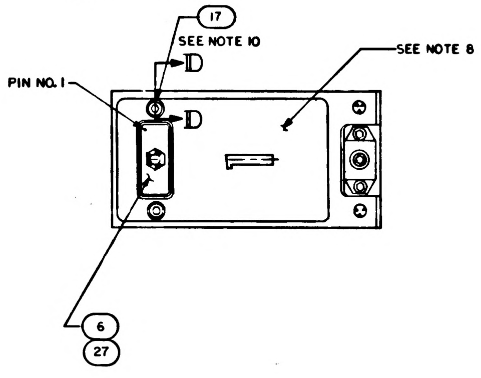
		REVISED PER TDRR 15948			
G		REVISED PER TDRR 16267		5 FEB 65	WF
H		REVISED PER TDRR 17613		24 MAR 65	RJJ
J		REVISED PER TDRR 18690			
K		REVISED PER TDRR 18691		6 MAY 65	
L		REVISED PER TDRR 8695			
M		REVISED PER TDRR 20119			
N		REVISED PER TDRR 20785			

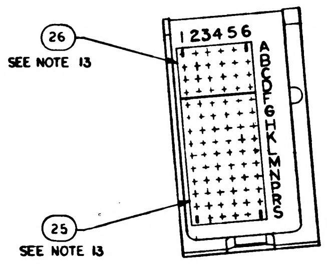


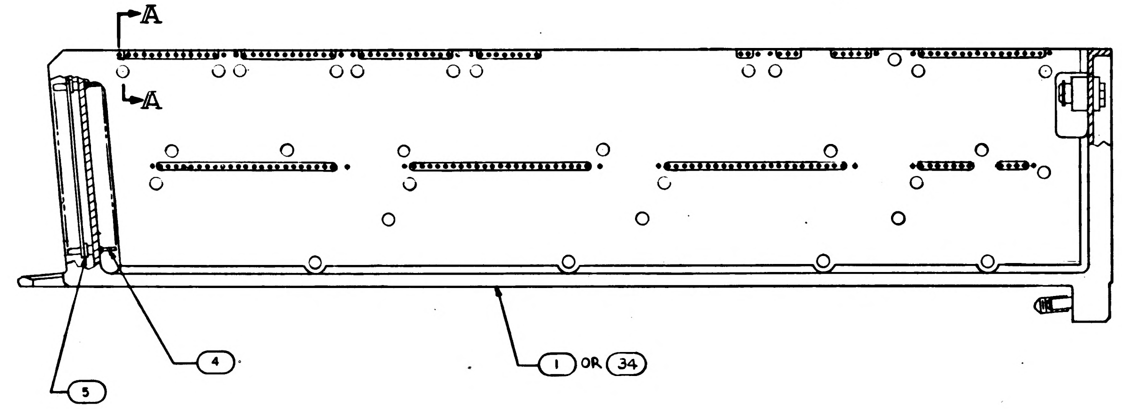
PARTIAL SECTION F-F
149 PLACES

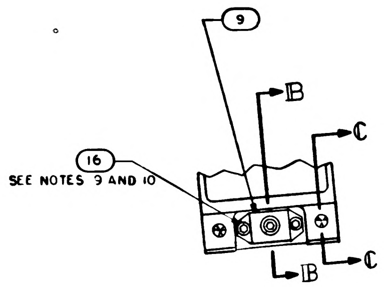


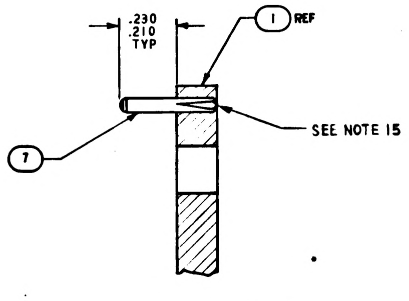


Ⓓ REPLACES WORD DWG REV C

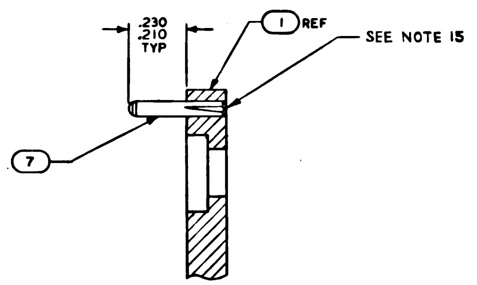






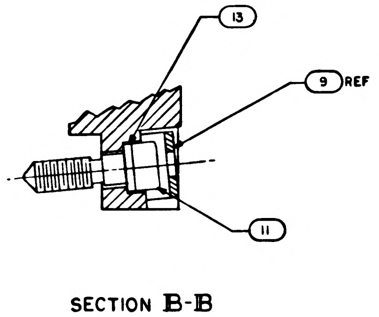


SECTION A-A
SCALE 4/1
-011 CONFIGURATION

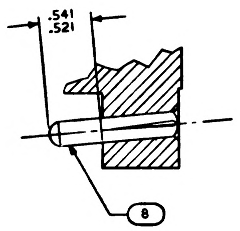


SECTION A-A
SCALE 4/1
-021 CONFIGURATION

TERMINATION CHART	
FROM	TO
45A1E7	45A1J1-12
↕ E8	↕ -3
E9	-33
E10	-17
45A1E11	45A1J1-18



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

10
12
16
15

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND 1002019 BLACK, .100/.140 HIGH AND SERIALIZE PER ND 1002023.
3. BOND FIND NO. 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
4. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND 1002136
5. BOND FIND NOS. 20, 21, 22, 23 AND 24 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19, OR FIND NO. 28
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NOS. 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005 ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS 1007141.
13. BOND FIND NOS. 25 AND 26 TO FIND NO. 5 PER ND 1002237.
~~14. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.~~
14. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A FORMULATION CONSISTING OF 40 PARTS BY WT. 1010959-1, 100 PARTS BY WT. 1010959-2, AND 7 PARTS BY WT. 1006277 AND CURE AT ROOM TEMPERATURE FOR THREE HOURS OR ONE HOUR AT 140°F. LIMITED AMOUNT ALLOWED TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004, TYPE I.
15. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND 1002004, POTTING SIDE ONLY.

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		-	1		1008521	FRAME	34
		-	1		1008620	WIRING LIST A A	33
		-	1		1008619	WIRING HARNESS D	32
		-	1		1008618	WIRINC HARNESS C	31
		-	1		1008617	WIRING HARNESS B	30
		-	1		1008616	WIRING HARNESS A	29
		-	1		1007586-011	BUFFER RESISTOR ASSY	28
		-			1009561	WIRING DIAGRAM	REF
			-		1009551	WIRING DIAGRAM	REF
		-	1		1010821-1	CONNECTOR, RECEPTACLE	27
		1	1		1008551	GASKET, CONNECTOR TRAY	26
		1	1		1008552	GASKET, CONNECTOR TRAY	25
		1	-		1015741	WIRE LIST AA	24
		1	-		1015740	WIRING HARNESS D	23
		1	-		1015739	WIRING HARNESS C	22
		1	-		1015738	WIRING HARNESS B	21
		1	-		1015737	WIRING HARNESS A	20
		1	-		1007088	BUFFER RESISTOR ASSY	19
		2	2		MA21045 C 04	NUT SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET, HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET, HEAD	16
		~~30~~	~~-~~		~~MS171433~~	~~PIN, SPRING~~	15
		~~30~~	~~-~~		~~1004207~~	~~DRIVE CYLINDER~~	14
		1	1		1008099-2	WASHER	13
		~~60~~	~~-~~		~~1004206~~	~~WASHER, THRUST~~	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		~~30~~	~~-~~		~~1008172~~	~~SCREW, JACK~~	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		20	20		MS [illegible]556-604	PIN, GUIDE	7
		1	-		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT BLADE EDGE CONNECTOR	4
		149	149		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		149	149		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	-		1008101	FRAME	1
QUANTITY REQUIRED					LIST OF MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
100,571		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL ———
HEAT TREATMENT ———
FINAL FINISH ———

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN R J Fox DATE 25 SEP 64
CHECKED [illegible] King 6 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible]
NASA APPROVAL W J Rhine 11-4-64
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

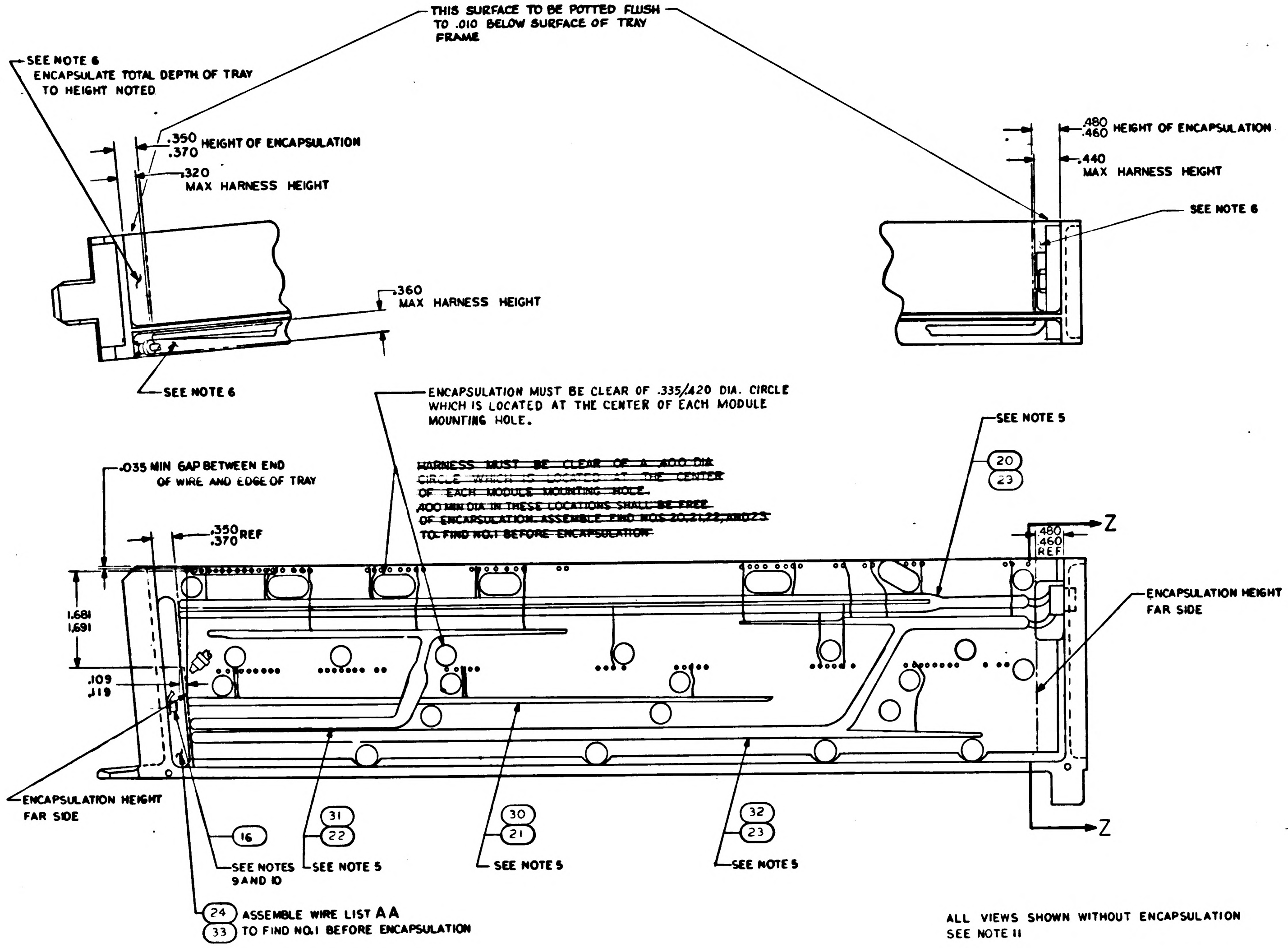
FRAME ASSEMBLY TRAY I

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1007531
SCALE 1/1
WT
SHEET 1 OF 2

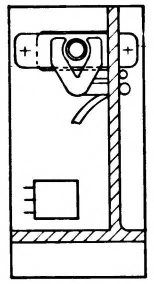
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR 13939	11/4/64	WK
E	REVISED PER TDRR 15150	29 Dec 64	[illegible]
F	REVISED PER TDRR 15948	11 FEB 65	JJ
G	REVISED PER TDRR 16267	15 FEB 65	JP
H	REVISED PER TDRR 17613	24 MAR 65	RJJ
J	REVISED PER TDRR 18690	[illegible] 65	[illegible]
K	REVISED PER TDRR 18691	6 MAY 65	[illegible]
L	REVISED PER TDRR 18695	11 MAY 65	V.
M	REVISION STATUS CHANGED PER TDRR 20119	19-JLY 65	G.
N	REVISED PER TDRR 20785	20 [illegible] 65	R


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.350
.370 HEIGHT OF ENCAPSULATION
.320
MAX HARNESS HEIGHT
.360
MAX HARNESS HEIGHT
SEE NOTE 6
.480
.460 HEIGHT OF ENCAPSULATION
.440
MAX HARNESS HEIGHT
SEE NOTE 6
ENCAPSULATION MUST BE CLEAR OF .335/.420 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
~~HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.~~
~~.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION ASSEMBLE FIND NOS 20,21,22,AND23 TO FIND NO.1 BEFORE ENCAPSULATION~~
SEE NOTE 5
20
23
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350
.370 REF
.480
.460
REF
Z
1.681
1.691
.109
.119
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
Z
16
31
22
30
21
32
23
SEE NOTES 9 AND 10
SEE NOTE 5
SEE NOTE 5
SEE NOTE 5
24
33
ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
DRAWN R. J. Fox DATE 29 SEP 64
CHECKED [illegible] 6 OCT 64
APPROVAL [illegible] 8 OCT 64
MSC APPROVAL [illegible] 11-2[illegible]-64
NASA APPROVAL W. J. R[illegible] 11-4-64
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY I

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO 1007531
SCALE 1/1
WT
SHEET 2 OF 2

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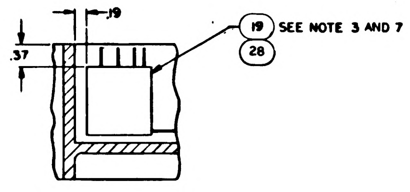
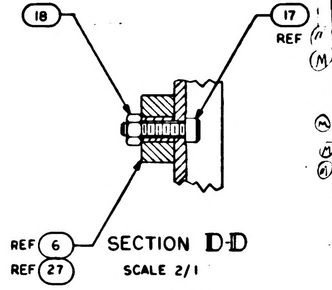


PARTIAL SECTION E-E



SECTION D-D
SCALE 2/1

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
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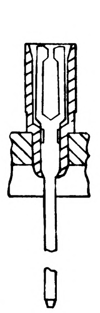
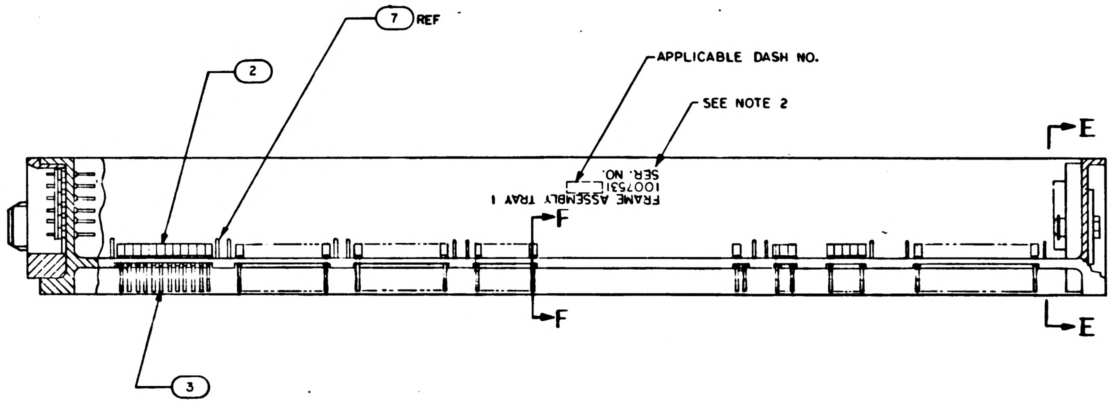
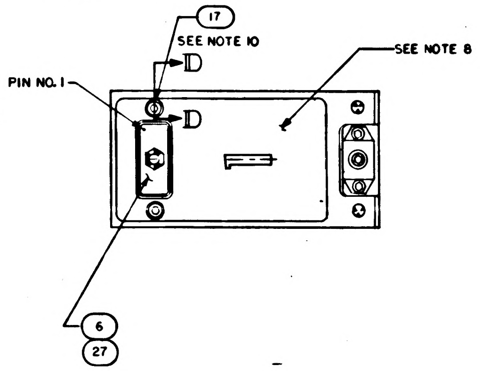
E		REVISED PER TDRR 15150		[illegible]	WK
F		REVISED PER TDRR 15948		FEB	
G		REVISED PER TDRR 16267		FEB 65	WP
H		REVISED PER TDRR 17613		24 MAR 65	RJJ W.D.
J		REVISED PER TDRR 18690		4 MAY 65	E.F.
K		REVISED PER TDRR 18691		6 MAY 65	JJJ E.F.
L		REVISED PER TDRR 18695		11 MAY 65	A.N.
M		REVISED PER TDRR 20119		21 JUN 65	JW MEM
N		REVISED PER TDRR 20785		20 JULY 65	WJR RWH
P		REVISED PER TDRR 26389		23 FEB 66	JB W.D.



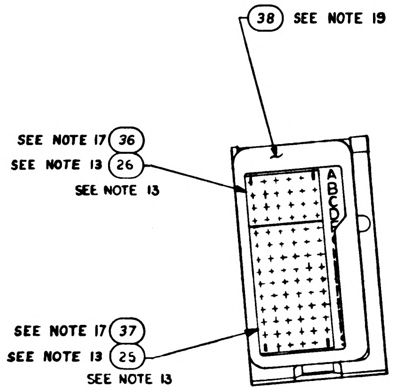
PARTIAL SECTION F-F
149 PLACES

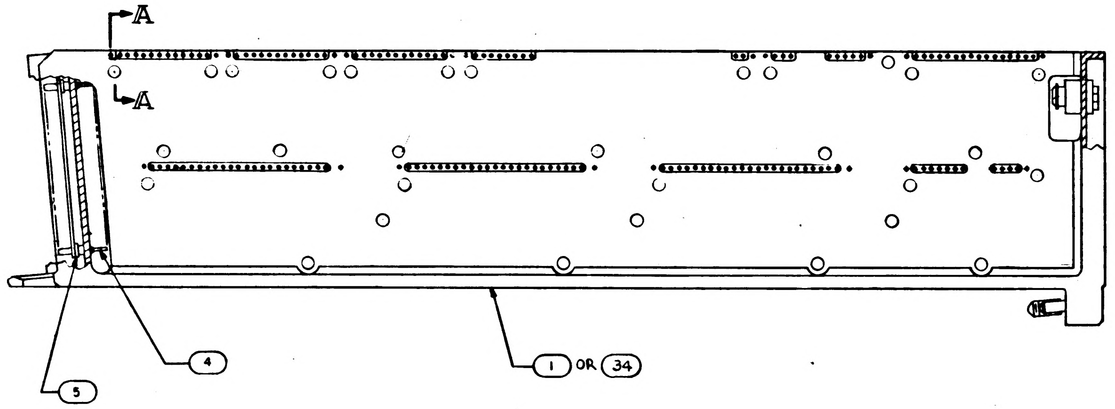


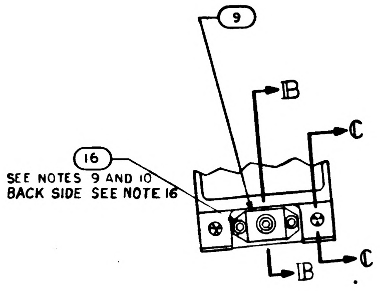


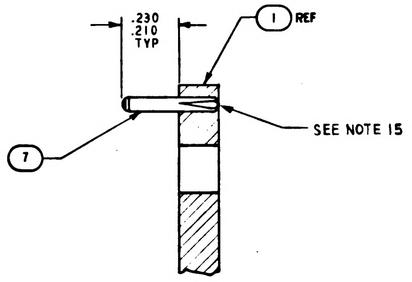
	AR	–	–		SEE NOTE 18	MOISTURE - PROOFING	39
	1	–	–		1008335	GASKET, WASP	38
	1	–	–		1008338	GASKET, CONNECTOR TRAY	37
	1	–	–		1008337	GASKET, CONNECTOR TRAY	36

Ⓓ REPLACES WORD DWG REV C

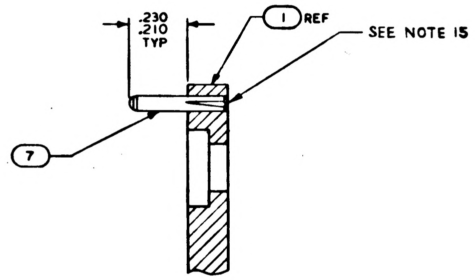






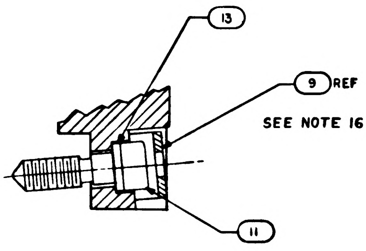


SECTION A-A
SCALE 4/1
-011 CONFIGURATION

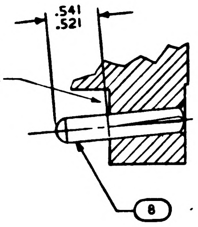


SECTION A-A
SCALE 4/1
-021 CONFIGURATION

TERMINATION CHART	
FROM	TO
45A1E7	45A1J1-12
E8	-3
E9	-33
E10	-17
45A1E11	45A1J1-18



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND 1002019 BLACK, .100/.140 HIGH AND SERIALIZE PER ND 1002023.
3. BOND FIND NO. 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
4. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND 1002136
5. BOND FIND NOS. 20, 21, 22, 23 AND 24 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19, OR FIND NO. 28
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NOS. 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005 ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS 1007141.
13. BOND FIND NOS. 25 AND 26 TO FIND NO. 5 PER ND 1002237.
14. ~~COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.~~
14. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A FORMULATION CONSISTING OF 40 PARTS BY WT. 1010959-1, 100 PARTS BY WT. 1010959-2, AND 7 PARTS BY WT. 1006277 AND CURE AT ROOM TEMPERATURE FOR THREE HOURS OR ONE HOUR AT 140°F. LIMITED AMOUNT ALLOWED TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004, TYPE I.
15. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND 1002004, POTTING SIDE ONLY.

CONTINUED ON SHEET 2

	1	–	–		1008333	RETAINER, JACK SCREW	35
	1	–	1		1008521	FRAME	34
	1	–	1		1008620	WIRING LIST A A	33
	1	–	1		1008619	WIRING HARNESS D	32
	1	–	1		1008618	WIRING HARNESS C	31
	1	–	1		1008617	WIRING HARNESS B	30
	1	–	1		1008616	WIRING HARNESS A	29
	1	–	1		1007586-011	BUFFER RESISTOR ASSY	28
	╳	–	╳		1009561	WIRING DIAGRAM	REF
	–	╳	–		1009551	WIRING DIAGRAM	REF
	1	–	1		1010821-1	CONNECTOR, RECEPTACLE	27
	–	1	1		1008551	GASKET, CONNECTOR TRAY	26
	–	1	1		1008552	GASKET, CONNECTOR TRAY	25
	–	1	–		1015741	WIRE LIST AA	24
	–	1	–		1015740	WIRING HARNESS D	23
	–	1	–		1015739	WIRING HARNESS C	22
	–	1	–		1015738	WIRING HARNESS B	21
	–	1	–		1015737	WIRING HARNESS A	20
	–	1	–		1007088	BUFFER RESISTOR ASSY	19
	2	2	2		MA21045 C 04	NUT SELF-LOCKING HEX	18
	2	2	2		MS16995-11	SCREW, CAP, SOCKET, HEAD	17
	3	3	3		MS16995-10	SCREW, CAP, SOCKET, HEAD	16
	–	~~30~~	~~–~~		~~MS171433~~	~~PIN, SPRING~~	15
	–	~~30~~	~~–~~		~~1004207~~	~~DRIVE CYLINDER~~	14
	1	1	1		1008099-2	WASHER	13
	–	~~60~~	~~–~~		~~1004206~~	~~WASHER, THRUST~~	12
	1	1	1		1008098	SCREW, SOCKET HEAD	11
	–	~~30~~	~~–~~		~~1008172~~	~~SCREW, JACK~~	10
	–	1	1		1001317	RETAINER, JACK SCREW	9
	2	2	2		1010620-5	PIN, GUIDE	8
	20	20	20		MS 16556-604	PIN, GUIDE	7
	–	1	–		1010622-1	CONNECTOR, RECEPTACLE	6
	84	84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
	84	84	84		1010382-1	CONTACT BLADE EDGE CONNECTOR	4
	149	149	149		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
	149	149	149		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
	–	1	–		1008101	FRAME	1
	031	021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
QUANTITY REQUIRED					LIST OF MATERIALS		

1007571		
NEXT ASSY	USED ON	APPLICABLE DASH NO
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN R J Fox DATE 25 SEP 64
CHECKED 6 OCT 64
APPROVAL 7 OCT 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY I

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO. 1007531
SCALE 1/1
WT
SHEET 1 of 2

1007531 P

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REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
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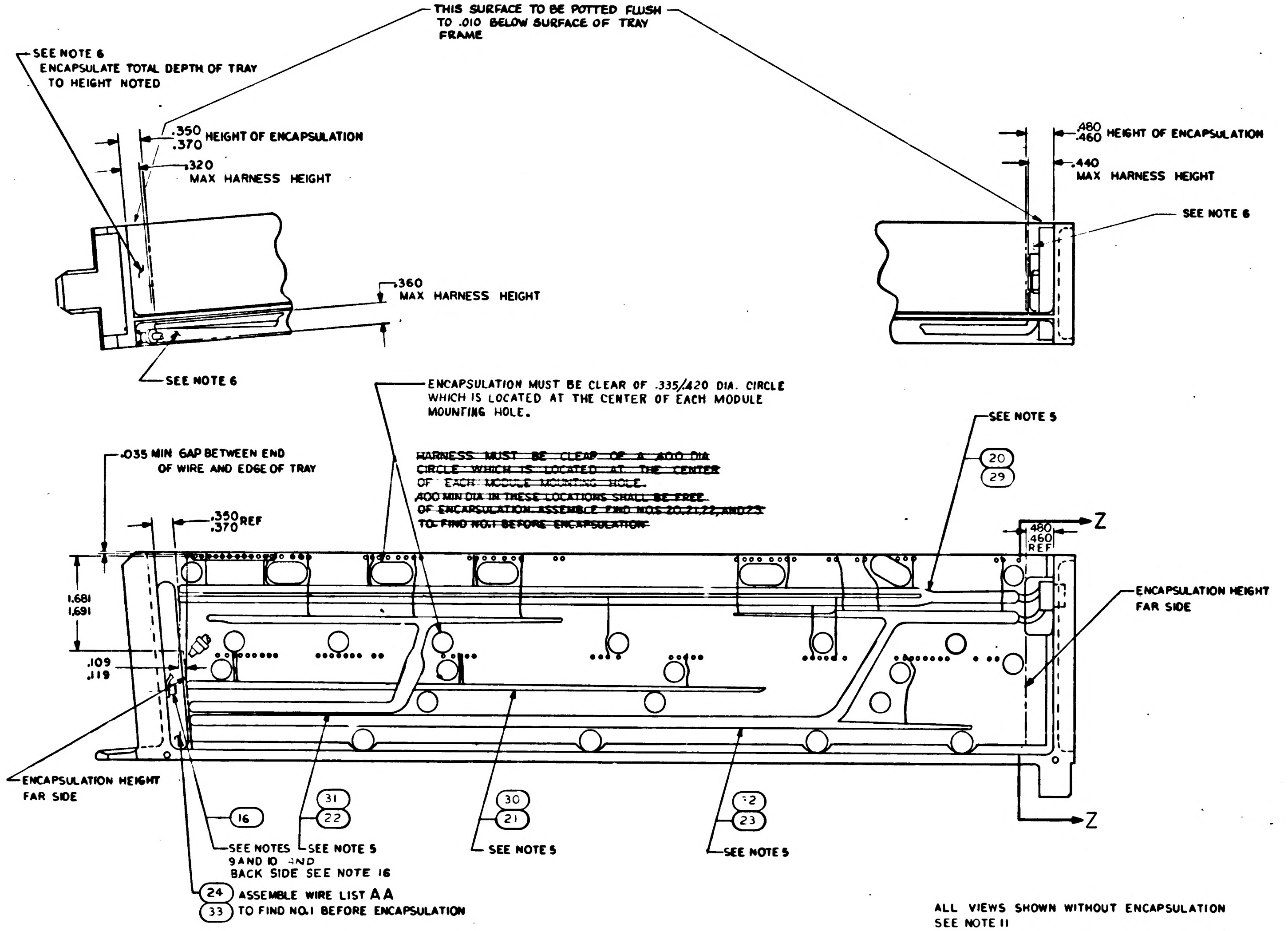
E	REVISED PER TDRR 15150	29 Dec 64	WR
F	REVISED PER TDRR 15948	11 FEB 65	JJJ CW
G	REVISED PER TDRR 16267	15 FEB 65	JWP
H	REVISED PER TDRR 17613	24 MAR 65	RW WL
J	REVISED PER TDRR 18690.	4 MAY 65	EF
K	REVISED PER TDRR 18691	6 MAY 65	JJJ EF
L	REVISED PER TDRR 18695	11 MAY 65	A.N.
M	REVISION STATUS CHANGED PER TDRR 20119	19-JUN 65	M G. MEM
N	REVISED PER TDRR 20785	20 JULY 65	WJR RWH
P	REVISED PER TDRR-26389	23-FEB-66	JB. W.D.


SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.350
.370
HEIGHT OF ENCAPSULATION
.320
MAX HARNESS HEIGHT
.360
MAX HARNESS HEIGHT
SEE NOTE 6
.480
.460
HEIGHT OF ENCAPSULATION
.440
MAX HARNESS HEIGHT
SEE NOTE 6
ENCAPSULATION MUST BE CLEAR OF .335/.420 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
~~HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.~~
~~.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION ASSEMBLE FIND NOS 20,21,22, AND 23 TO FIND NO.1 BEFORE ENCAPSULATION~~
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
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REF
SEE NOTE 5
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29
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ENCAPSULATION HEIGHT FAR SIDE
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.109
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ENCAPSULATION HEIGHT FAR SIDE
16
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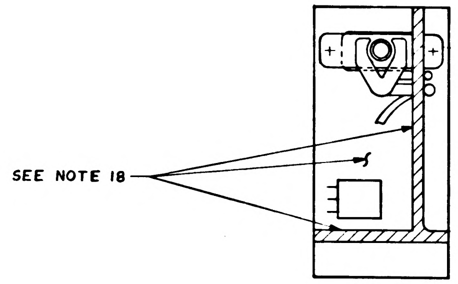
22
30
21
32
23
Z
SEE NOTES 9 AND 10 AND BACK SIDE SEE NOTE 16
SEE NOTE 5
SEE NOTE 5
SEE NOTE 5
24
33
ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



SECTION Z-Z

NOTES: (CONTINUED)

16. FILL CAVITY PER ND1002009, METHOD J.
17. APPLY A BEAD OF SILICONE GREASE MIL-S-8660 BETWEEN THE ROWS OF MALE MALCO PINS IN BOTH DIRECTIONS, BETWEEN THE GASKETS AND THE TRAY FRAME AND AROUND THE PERIMETER OF THE GASKETS ON THE MALCO CONNECTOR. NOMINAL BEAD DIAMETER SHALL BE 1/8 INCH.
18. PAINT THE MODULE MOUNTING SURFACE AND THE SURFACE PERPENDICULAR TO THE MODULE MOUNTING SURFACE PER ND1002292, USING MIL-C-15328 WASH PRIMER FOLLOWED BY MIL-P-8585 ZINC CHROMATE PRIMER, FOLLOWED BY 1012543-003 PAINT. MODULE GUIDE PINS, CONNECTOR FEMALE PINS AND INSULATORS TO BE *FREE OF PAINT.* SEE FIND NO. 39.
19. BOND FIND NO. 38 TO FIND NO. 34 PER ND1002151, USING ADHESIVE PER MIL-A-25457.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
DRAWN R. J. Fox DATE 29 SEP 64
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL W. J. Rh... 11-2-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY I

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007531
SCALE 1/1
WT
SHEET 2 OF 2

1007531 P

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1007531

REVISIONS 12031

SYM	DESCRIPTION	DATE	APPROVAL

DASH NO. 011

PART NO.	DESCRIPTION	REQD.
1008521-001	Frame, Tray 1	1
1006774	Insulator, Wrapost, Female Miniature	149
1006781-2	Contact, Wrapost, Female Miniature	149
1010382-1	Contact, Blade Edge Connector	84
1010383-1	Insulator, Wrapost, Male	84
1010622-1	Connector Receptacle	1
1010620-4	Pin, Guide	20
1010620-5	Pin, Guide	2
1001317	Retainer, Jack Screw	1
1008172	Screw, Jack	30
1008098	Screw, Socket Head	1
1004206	Washer Thrust	60
1008099-2	Washer	1
MS 16995-10	Screw, Cap, Socket Head	3
MS 16995-11	Screw, Cap, Socket Head	2
MS 21045 C 04	Nut, Self-Locking Hex	2
MS 171433	Pin, Spring	30
1004207	Drive Cylinder	30
1007088	Assembly, Buffer Resistor Module	1
1008552-001	Gasket, Connector	1
1008551-001	Gasket, Connector	1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007571	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN Kasen DATE 7/15/64
CHECKED
APPROVAL
APPROVAL A. R. Test 8/24/64
NASA APPROVAL 8/25/64
MIT APPROVAL W Kupfer 2 Sep 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 1
(100 SERIES)

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007531
SCALE
WT
SHEET 1 OF 1

MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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1007532 ⑦

REVISIONS 12031			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 12628	11 Sept 64	WK

DASH NO. 011

PART NO.	DESCRIPTION	REQD.
1008102-000	Frame, Tray 2	1
1006774	Insulator, Wrapost, Female Miniature	129
1006781-2	Contact, Wrapost, Female Miniature	129
1010382-1	Contact, Blade Edge Connector	84
1010383-1	Insulator, Wrapost, Male	84
1010622-1	Connector Receptacle	1
1010620-4	Pin, Guide	16
1010620-5	Pin, Guide	2
1001317	Retainer, Jack Screw	1
1008172	Screw, Jack	26
1008098	Screw, Socket Head	1
1004206	Washer, Thrust	52
1008099-2	Washer	1
MS 16995-10	Screw, Cap, Socket Head	3
MS 16995-11	Screw, Cap, Socket Head	2
MS 21045 C 04	Nut, Self-Locking Hex	2
MS 171433	Pin, Spring	26
1004207	Drive Cylinder	26
1007091	Assembly, Buffer Resistor Module	1
1008552 -001	Gasket, Connector	1
1008551 -001	Gasket, Connector	1

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007572	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
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MATERIAL
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FINAL FINISH

MIT
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CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN Karen DATE 7/15/64
CHECKED
APPROVAL
APPROVAL 8/24/64
NASA APPROVAL 9/4/64
MIT APPROVAL W Kupfer 25 Aug 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 2
(100 SERIES)

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007532
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
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4 3 2 1

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B 1007532

REVISIONS 12031

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 12628	21 Sept 64	EDK WK
B	REVISED PER TDRR 13195	10-6-64	EDK WK

PART NO.	DESCRIPTION	DASH NO. 011 REQD.	DASH NO. 021
1008102	Frame, Tray 2	1	1
1006774	Insulator, Wrapost, Female Miniature	129	129
1006781-2	Contact, Wrapost, Female Miniature	129	129
1010382-1	Contact, Blade Edge Connector	84	84
1010383-1	Insulator, Wrapost, Male	84	84
1010622-1	Connector Receptacle	1	1
1010620-4	Pin, Guide	16	16
1010620-5	Pin, Guide	2	2
1001317	Retainer, Jack Screw	1	1
1008172	Screw, Jack	26	26
1008098	Screw, Socket Head	1	1
1004206	Washer, Thrust	52	52
1008099-2	Washer	1	1
MS 16995-10	Screw, Cap, Socket Head	3	3
MS 16995-11	Screw, Cap, Socket Head	2	2
MS 21045 C 04	Nut, Self-Locking Hex	2	2
MS 171433	Pin, Spring	26	26
1004207	Drive Cylinder	26	26
1007091	Assembly, Buffer Resistor Module	1	1
1008552	Gasket, Connector	1	1
1008551	Gasket, Connector	1	1
	Harness (50 Series)	-	1
	Harness (100 Series)	1	-

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007572	
NEXT ASSY	USED ON

APPLICATION

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APPROVAL
APPROVAL 8/24/64
NASA APPROVAL 8/4/64
MIT APPROVAL W Kupfer 25 Aug 64

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FRAME ASSEMBLY
TRAY 2

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007532
SCALE
WT
SHEET 1 OF 1

MASTER

4 3 2 1

INCHES
0 1 2
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1007532 C

REVISIONS 12031

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 12628	11 Sept 64	WK
B	REVISED PER TDRR 13195	10-6-64	PPK WK
C	REPLACED BY CONFIGURATION DWG REV D PER TDRR 23939	11/4/64	WK

PART NO.	DESCRIPTION	DASH NO. 011 REQD.	DASH NO. 021
1008102	Frame, Tray 2	1	1
1006774	Insulator, Wrapost, Female Miniature	129	129
1006781-2	Contact, Wrapost, Female Miniature	129	129
1010382-1	Contact, Blade Edge Connector	84	84
1010383-1	Insulator, Wrapost, Male	84	84
1010622-1	Connector Receptacle	1	1
1010620-4	Pin, Guide	16	16
1010620-5	Pin, Guide	2	2
1001317	Retainer, Jack Screw	1	1
1008172	Screw, Jack	26	26
1008098	Screw, Socket Head	1	1
1004206	Washer, Thrust	52	52
1008099-2	Washer	1	1
MS 16995-10	Screw, Cap, Socket Head	3	3
MS 16995-11	Screw, Cap, Socket Head	2	2
MS 21045 C 04	Nut, Self-Locking Hex	2	2
MS 171433	Pin, Spring	26	26
1004207	Drive Cylinder	26	26
1007091	Assembly, Buffer Resistor Module	1	1
1008552	Gasket, Connector	1	1
1008551	Gasket, Connector	1	1
	Harness (50 Series)	-	1
	Harness (100 Series)	1	-

Ⓒ REPLACED BY CONFIGURATION DWG REV D

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007572	

APPLICATION

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
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DWG. NO. CONTRACT
DRAWN Karen DATE 7/13/64
CHECKED
APPROVAL
APPROVAL 8/24/64
NASA APPROVAL 9/4/64
MIT APPROVAL W Kupfer 25 Aug 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 2

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007532
SCALE WT SHEET 1 OF 1

MASTER

INCHES
0 1 2
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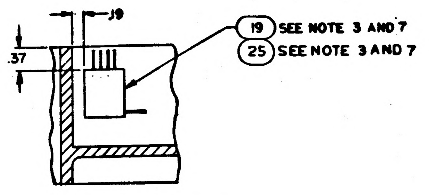
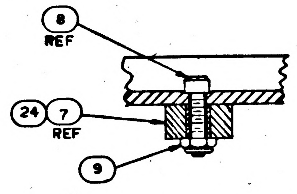
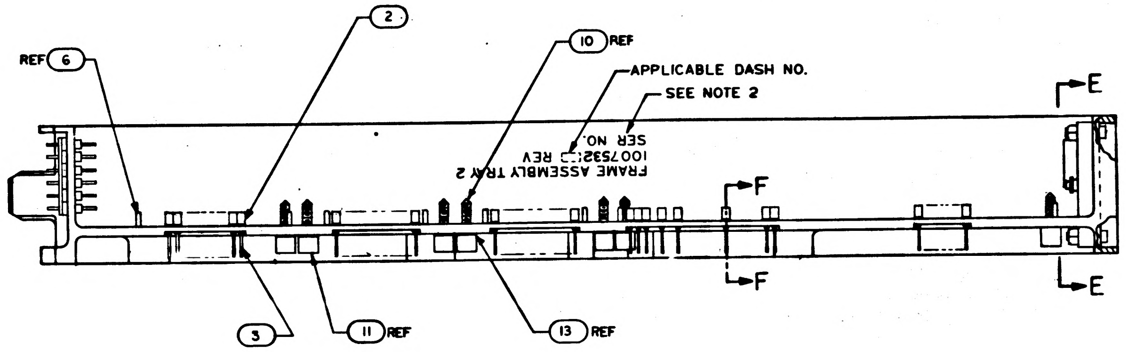
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPR
D		REPLACES WORD DWG REV C PER TDRR 13939		11/4/64	WK

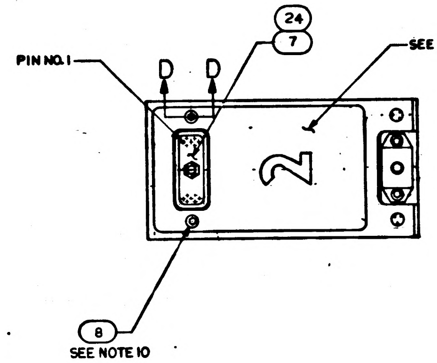


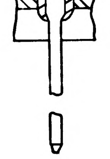
PARTIAL SECTION E-E



PARTIAL SECTION D-D
SCALE 2/1

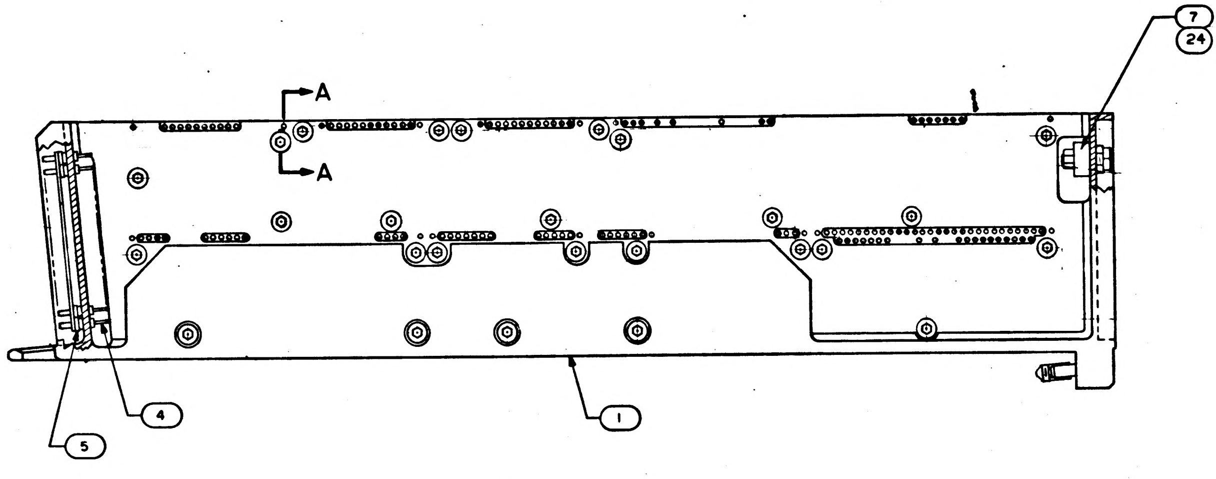


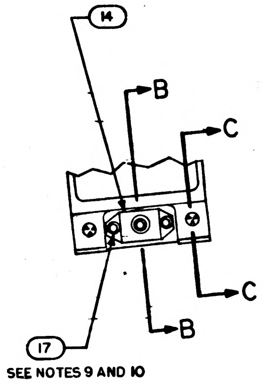


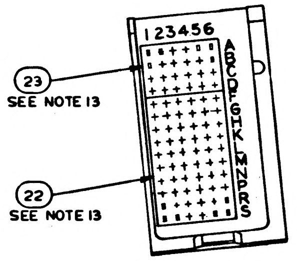


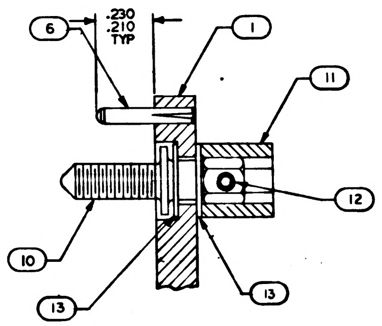
PARTIAL SECTION F-F
129 PLACES

Ⓓ REPLACES WORD DWG REV C

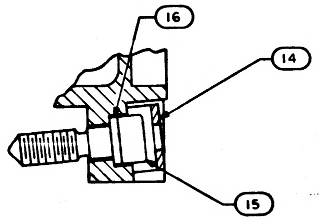




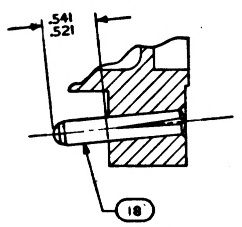




SECTION A-A
SCALE 4/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A2E9	45A2J1-20
45A2E10	45A2J1-13
45A2E11	45A2J1-12
45A2E12	45A2J1-3
45A2E13	45A2J1-18
45A2E14	45A2J1-2
45A2E15	45A2J1-11

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MARK PER ND1002019 (BLACK).100/.140 HIGH/SERIALIZE PER ND 1002023
3. BOND FIND NO. 19 AND 25 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686.
4. ASSEMBLE FIND NUMBERS 2,3,4 AND 5 PER ND 1002136
5. BOND FIND NO. 20 AND 21 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19 AND 25.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
9. COAT THREADS OF FIND NO. 17 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NUMBERS 8 AND 17 TO FIND NO. 1 TO BE 5.0—5.5 IN. LB.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005.
ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071
ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS 1007142.
13. BOND FIND NO. 22 AND 23 TO FIND NO. 5 PER ND1002237
14. BOND FIND NO. 27 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NO. 27 AND THE ADJOINING AREA.
15. BOND FIND NO. 26 ONTO FIND NO. 27 AS PREPARED IN NOTE 14 PER ND1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED).

QUANTITY REQUIRED					LIST OF MATERIALS		
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.8	27
		1	1		1006712-3	RESISTOR, TEMPERATURE SENSITIVE	26
		–	1		1007587-011	BUFFER RESISTOR ASSY	25
		–	X		1009562	WIRING DIAGRAM	REF
		–	1		1010821-1	CONNECTOR, RECEPTACLE	24
		1	1		1008551	GASKET, CONNECTOR, TRAY	23
		1	1		1008552	GASKET CONNECTOR TRAY	22
		X	–		1009552	WIRING DIAGRAM	REF
		1	–		1008269	WIRE LIST A A	21
		1	–		1015772	WIRING HARNESS A	20
		1	–		1007091	BUFFER RESISTOR ASSY	19
		2	2		1010620-5	PIN GUIDE	18
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	17
		1	1		1008099-2	WASHER	16
		1	1		1008098	SCREW, SOCKET HEAD	15
		1	1		1001317	RETAINER, JACK SCREW	14
		52	52		1004206	WASHER, THRUST	13
		26	26		MS171433	PIN, SPRING	12
		26	26		1004207	DRIVE CYLINDER	11
		26	26		1008172	SCREW, JACK	10
		2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	9
		2	2		MS 16995-11	SCREW, CAP, SOCKET HEAD	8
		1	–		1010622-1	CONNECTOR, RECEPTACLE,	7
		16	16		1010620-4	PIN, GUIDE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		129	129		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		129	129		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	1		1008102	FRAME	1

1007532 D

1007572		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

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TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
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FINAL FINISH —

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Contract NAS 9-497
DWG. NO.
DRAWN Descelles DATE 29 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-26-64
NASA APPROVAL 11-4-64
MIT APPROVAL 11/4/64

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FRAME ASSEMBLY TRAY 2

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007532
SCALE 1/1
WT
SHEET 1 OF 2

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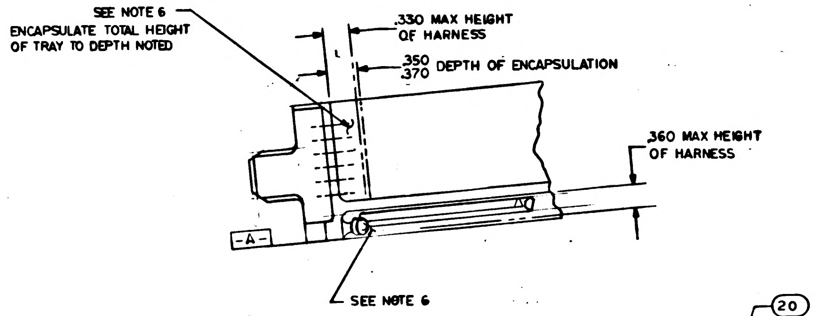
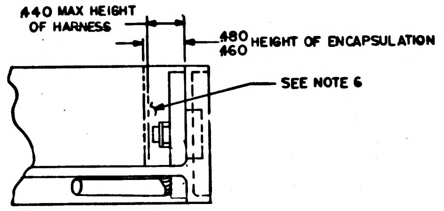
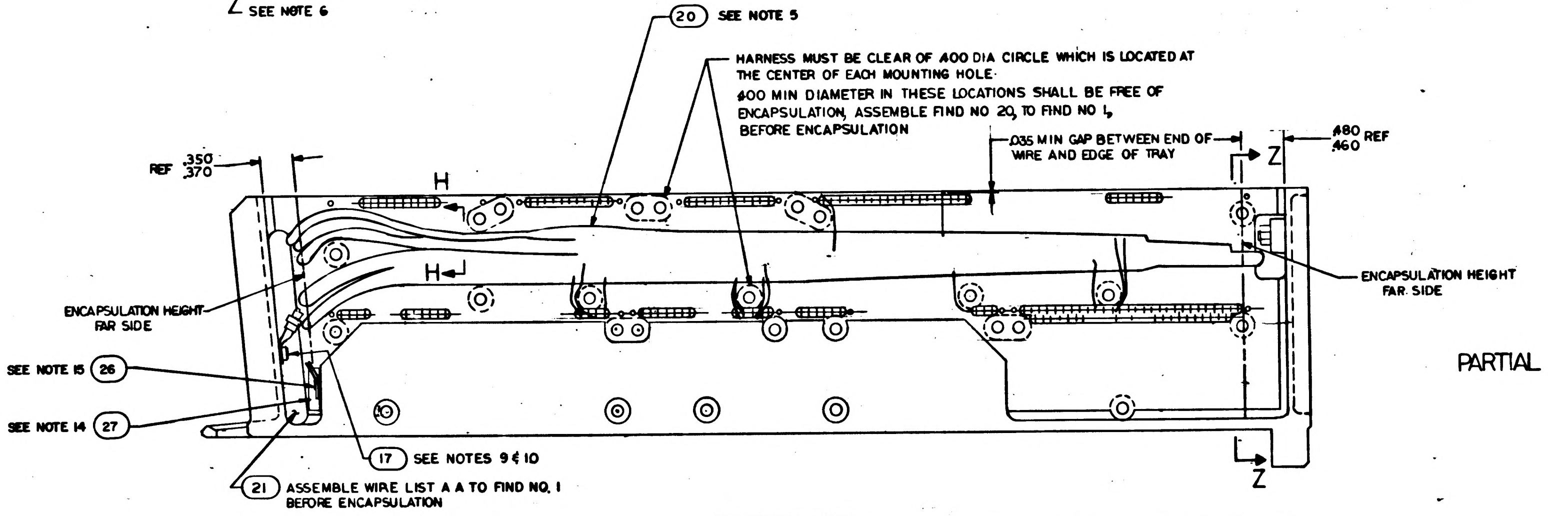
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR 13739	11/4/64	WK

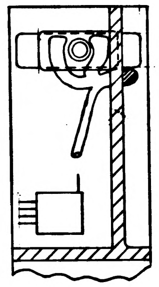

SEE NOTE 6
ENCAPSULATE TOTAL HEIGHT OF TRAY TO DEPTH NOTED
.330 MAX HEIGHT OF HARNESS
.350
.370 DEPTH OF ENCAPSULATION
.360 MAX HEIGHT OF HARNESS
-A-
SEE NOTE 6


.440 MAX HEIGHT OF HARNESS
.480
.460 HEIGHT OF ENCAPSULATION
SEE NOTE 6


20 SEE NOTE 5
HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MOUNTING HOLE.
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION, ASSEMBLE FIND NO 20, TO FIND NO 1, BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.480
.460 REF
Z
REF .350
.370
H
H
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
SEE NOTE 15 26
SEE NOTE 14 27
17 SEE NOTES 9 & 10
21 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
Z

PARTIAL SECTION H-H

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11


PARTIAL SECTION Z-Z

Ⓓ REPLACES WORD DRAWING REV C

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

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DIMENSIONS ARE IN INCHES
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Contract NAS 9-497
DRAWN Gloeckler DATE 29 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
MIT APPROVAL 10-29-64
NASA APPROVAL W J Rhine 11-4-64
MIT APPROVAL

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FRAME ASSEMBLY
TRAY 2

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007532
SCALE FULL
WT
SHEET 2 OF 2

1007532 D

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REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APP'D
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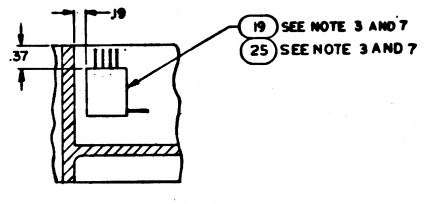
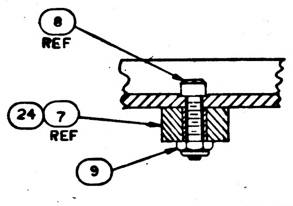
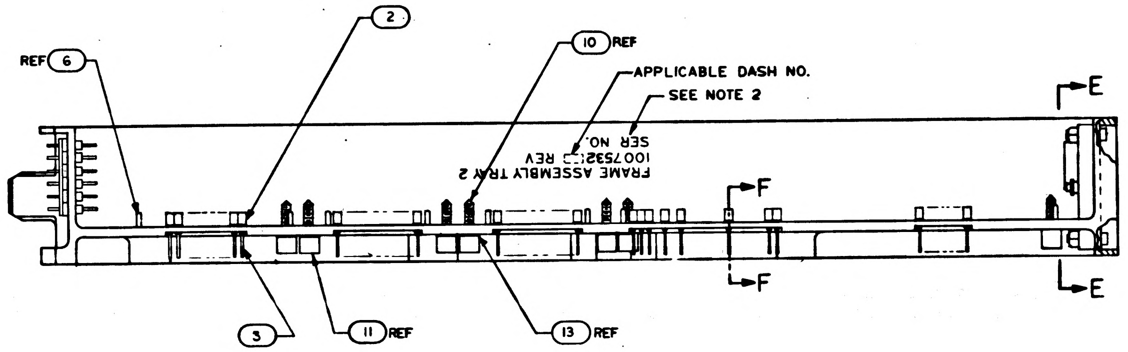
E		REVISED PER TDRR 15154		Dec '64	

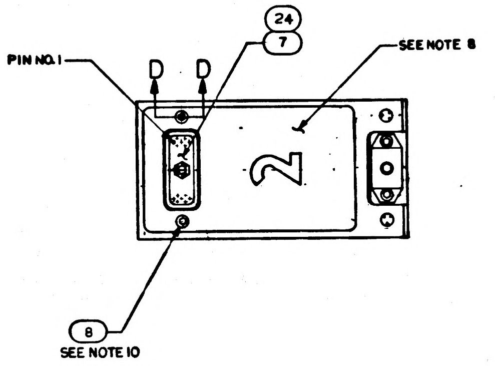


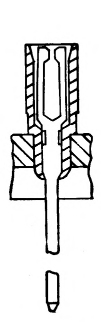
PARTIAL SECTION E-E



PARTIAL SECTION D-D
SCALE 2/1

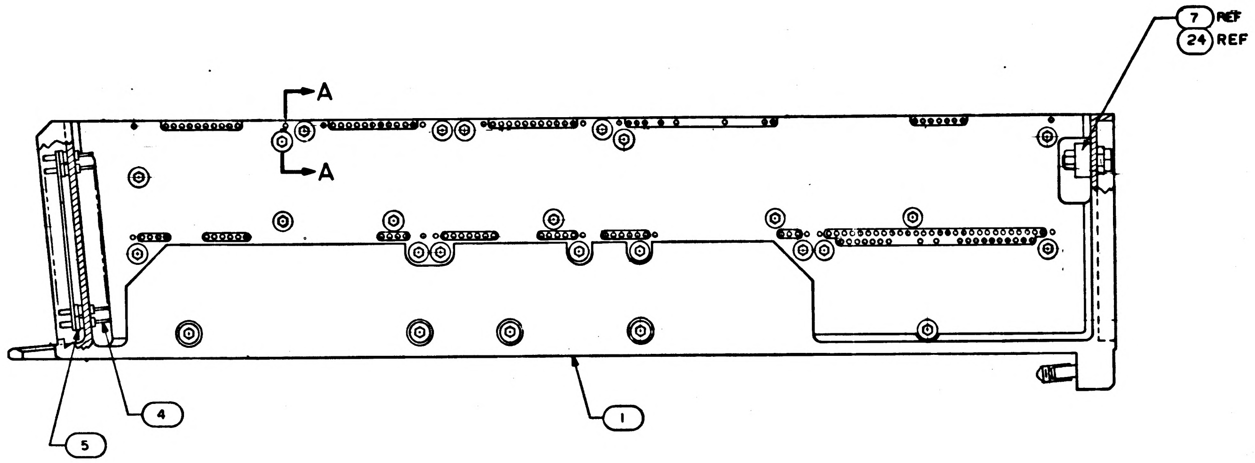


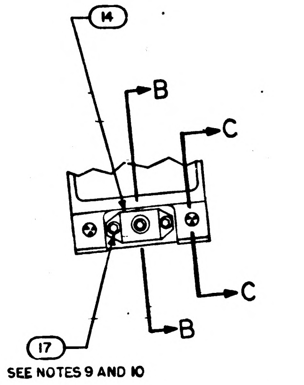


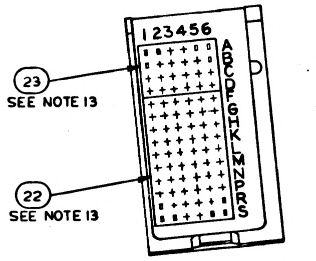


PARTIAL SECTION F-F
129 PLACES

Ⓓ REPLACES WORD DWG REV C

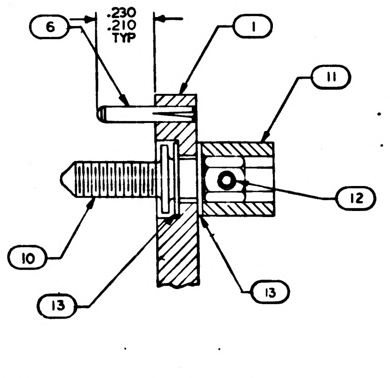




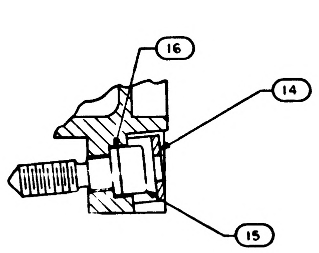


		—	1		1008628	WIRE LIST AA	29
		—	1		1008627	WIRING HARNESS A	28
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	27
		1	1		1006712-3	RESISTOR, TEMPERATURE SENSITIVE	26
		—	1		1007587-011	BUFFER RESISTOR ASSY	25
		—	X		1009562	WIRING DIAGRAM	REF
		—	1		1010821-1	CONNECTOR, RECEPTACLE	24
		1	1		1008551	GASKET, CONNECTOR, TRAY	23
		1	1		1008552	GASKET CONNECTOR TRAY	22
		X	—		1009552	WIRING DIAGRAM	REF
		1	—		1008269	WIRE LIST A A	21
		1	—		1015772	WIRING HARNESS A	20
		1	—		1007091	BUFFER RESISTOR ASSY	19
		2	2		1010620-5	PIN GUIDE	18
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	17
		1	1		1008099-2	WASHER	16
		1	1		1008098	SCREW, SOCKET HEAD	15
		1	1		1001317	RETAINER, JACK SCREW	14
		52	52		1004206	WASHER, THRUST	13
		26	26		MS171433	PIN, SPRING	12
		26	26		1004207	DRIVE CYLINDER	11
		26	26		1008172	SCREW, JACK	10
		2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	9
		2	2		MS 16995-11	SCREW, CAP, SOCKET HEAD	8
		1	—		1010622-1	CONNECTOR, RECEPTACLE,	7
		16	16		1010620-4	PIN, GUIDE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		129	129		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		129	129		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	1		1008102	FRAME,	1
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
QUANTITY REQUIRED					LIST OF MATERIALS		

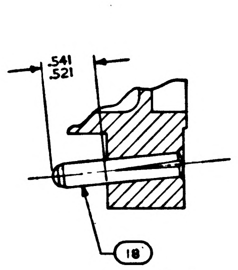
TERMINATION CHART	
FROM	TO
45A2E9	45A2J1-20
45A2E10	45A2J1-13
45A2E11	45A2J1-12
45A2E12	45A2J1-3
45A2E13	45A2J1-18
45A2E14	45A2J1-2
45A2E15	45A2J1-11



SECTION A-A
SCALE 4/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MARK PER ND1002019 (BLACK) .100/.140 HIGH/SERIALIZE PER ND 1002023
3. BOND FIND NO. 19 AND 25 TO FIND NO. 1 PER ND1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686.
4. ASSEMBLE FIND NUMBERS 2,3,4 AND 5 PER ND 1002136
5. BOND FIND NO. 20 AND 21 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19 AND 25.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
9. COAT THREADS OF FIND NO. 17 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NUMBERS 8 AND 17 TO FIND NO. 1 TO BE 5.0–5.5 IN. LB.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005.
ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071
ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS 1007142.
13. BOND FIND NO. 22 AND 23 TO FIND NO. 5 PER ND1002237
14. BOND FIND NO. 27 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NO. 27 AND THE ADJOINING AREA.
15. BOND FIND NO. 26 ONTO FIND NO. 27 AS PREPARED IN NOTE 14 PER ND1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED).

1007572		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO.
Contract NAS 9-497
DRAWN Deschke DATE 29 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL W. J. Rhine 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 2

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007532
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS				
	SYM	DESCRIPTION	DATE	APPROVAL
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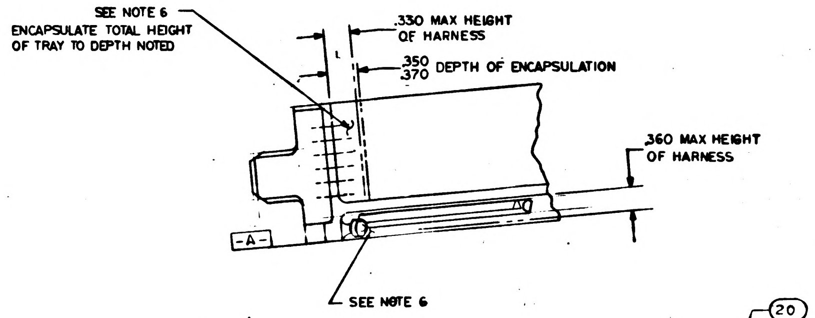
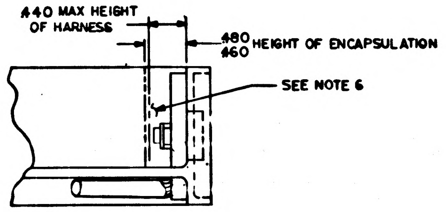
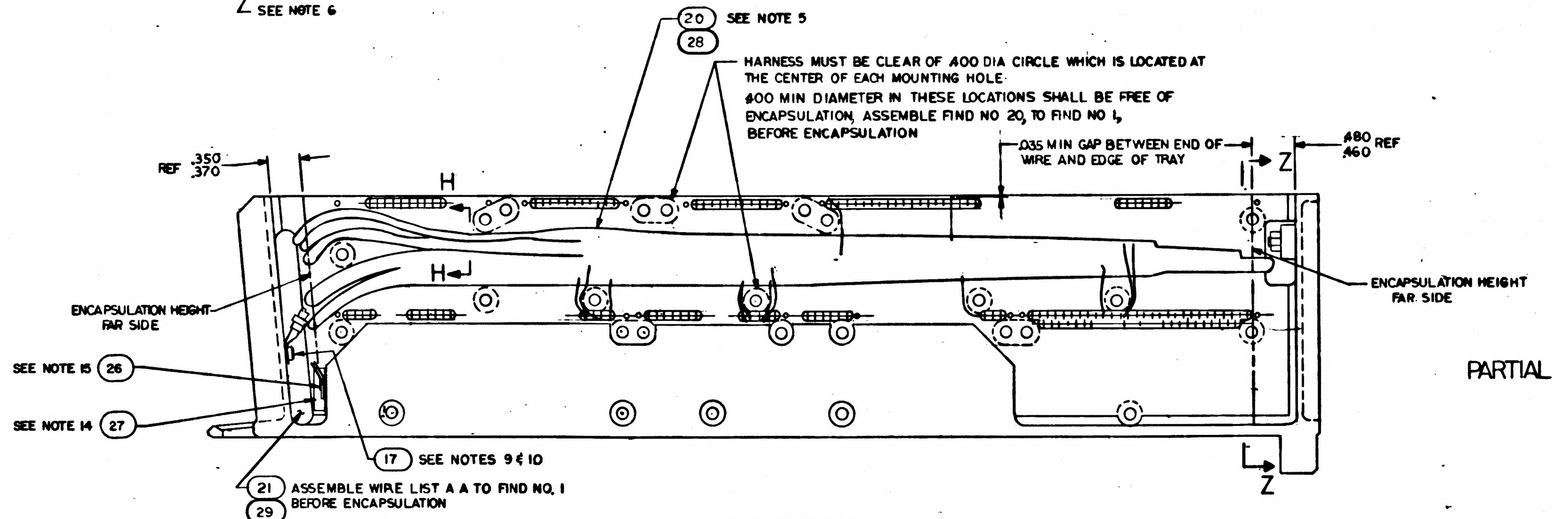
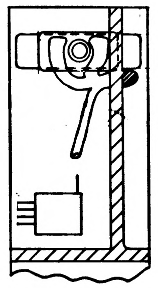
	E	REVISED PER TDRR 15154		


SEE NOTE 6
ENCAPSULATE TOTAL HEIGHT OF TRAY TO DEPTH NOTED
.330 MAX HEIGHT OF HARNESS
.350 .370 DEPTH OF ENCAPSULATION
.360 MAX HEIGHT OF HARNESS
-A-
SEE NOTE 6


.440 MAX HEIGHT OF HARNESS
.480 .460 HEIGHT OF ENCAPSULATION
SEE NOTE 6


20
28
SEE NOTE 5
HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MOUNTING HOLE.
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION, ASSEMBLE FIND NO 20, TO FIND NO 1, BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.480 .460 REF
Z
REF .350 .370
H
H
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
SEE NOTE 15 26
SEE NOTE 14 27
17 SEE NOTES 9 & 10
21 29 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
Z

PARTIAL SECTION H-H



PARTIAL SECTION Z-Z

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11

Ⓓ REPLACES WORD DRAWING REV C

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
Contract NAS 9-497
DRAWN Geschke DATE 29 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-24-64
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

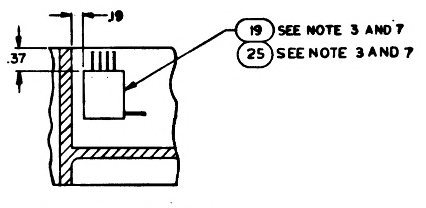
FRAME ASSEMBLY
TRAY 2

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007532
SCALE FULL WT
SHEET 2 OF 2

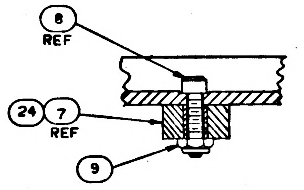
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

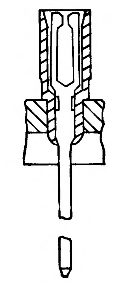
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
D		REPLACES WORD DWG REV C PER TDRR 13837			WK
E		REVISED PER TDRR 15154		29 Jun 64	
F		REVISED PER TDRR 15238			



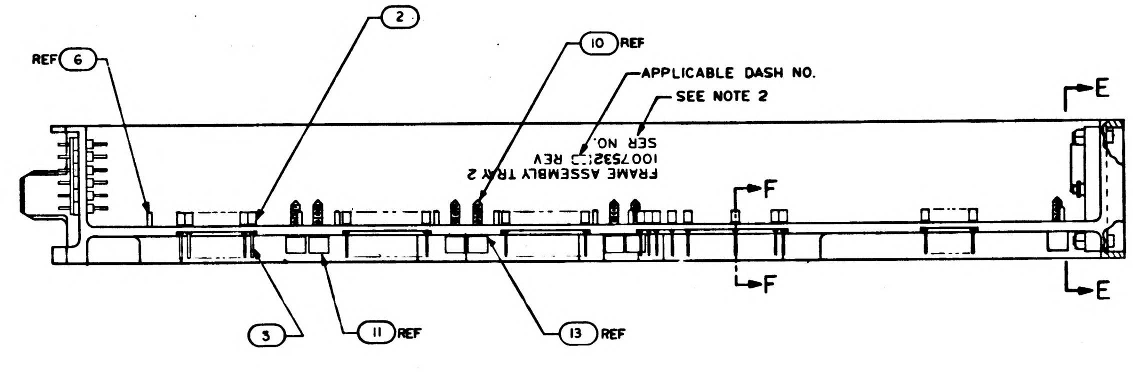
PARTIAL SECTION E-E

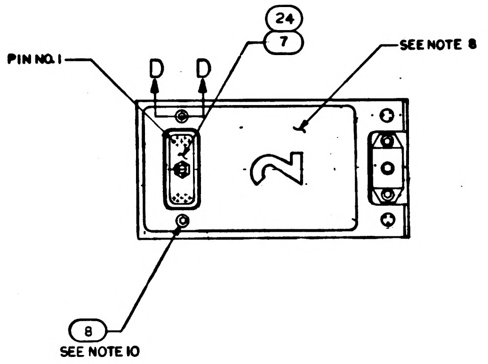


PARTIAL SECTION D-D
SCALE 2/1

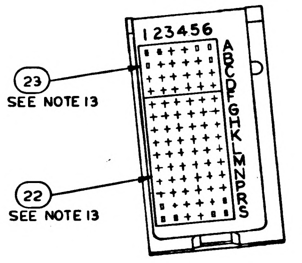


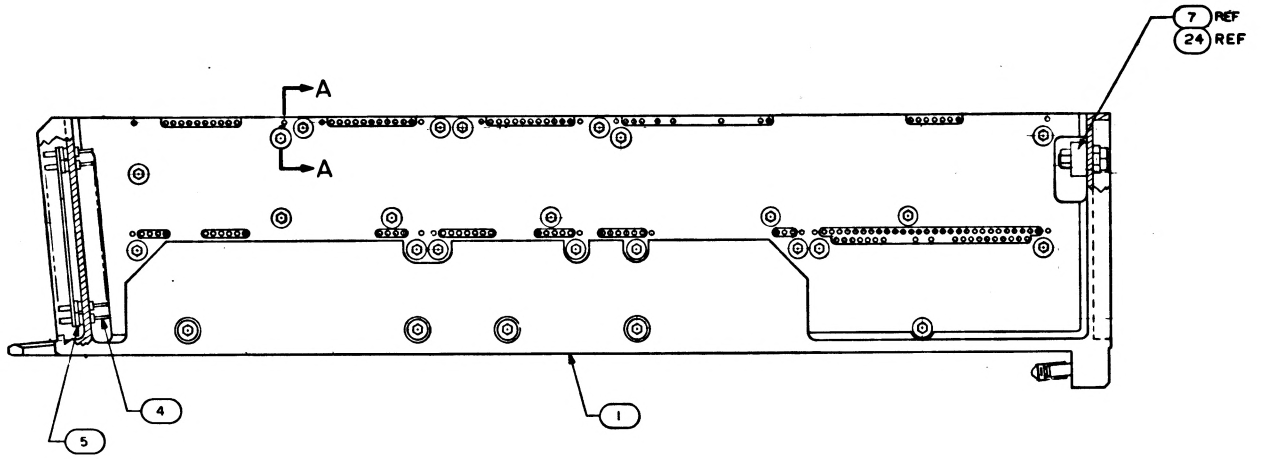
PARTIAL SECTION F-F
129 PLACES

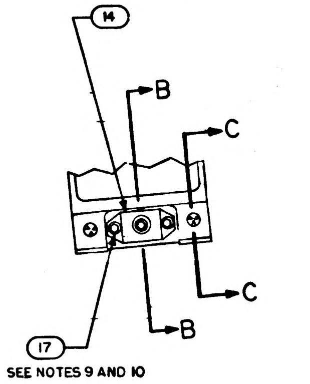


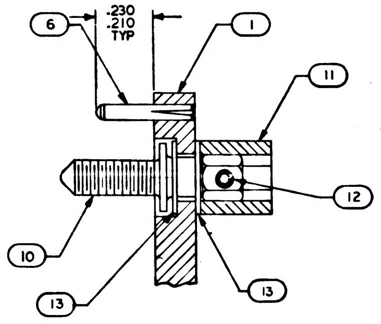


Ⓓ REPLACES WORD DWG REV C

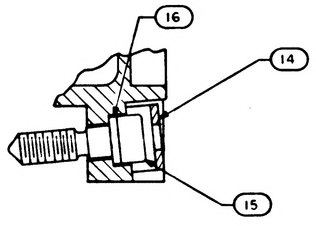




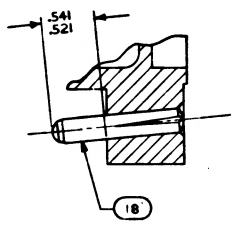




SECTION A-A
SCALE 4/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MARK PER ND1002019 (BLACK) .100/.140 HIGH/SERIALIZE PER ND 1002023
3. BOND FIND NO. 19 AND 25 TO FIND NO. 1 PER ND1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686.
4. ASSEMBLE FIND NUMBERS 2,3,4 AND 5 PER ND 1002136
5. BOND FIND NO. 20 AND 21 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19 AND 25.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
9. COAT THREADS OF FIND NO. 17 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NUMBERS 8 AND 17 TO FIND NO. 1 TO BE 5.0–5.5 IN. LB.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005.
    ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071
    ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS 1007142.
13. BOND FIND NO. 22 AND 23 TO FIND NO. 5 PER ND1002237
14. BOND FIND NO. 27 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NO. 27 AND THE ADJOINING AREA.
15. BOND FIND NO. 26 ONTO FIND NO. 27 AS PREPARED IN NOTE 14 PER ND1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED).

TERMINATION CHART

FROM	TO
45A2E10	45A2J1-13
45A2E11	45A2J1-12
45A2E12	45A2J1-3
45A2E13	45A2J1-18
45A2E14	45A2J1-2
45A2E15	45A2J1-11

QUANTITY REQUIRED					LIST OF MATERIALS		
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		—	1		1008628	WIRE LIST AA	29
		—	1		1008627	WIRING HARNESS A	28
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	27
		1	1		1006712-3	RESISTOR, TEMPERATURE SENSITIVE	26
		—	1		1007587-011	BUFFER RESISTOR ASSY	25
		—	X		1009562	WIRING DIAGRAM	REF
		—	1		1010821-1	CONNECTOR, RECEPTACLE	24
		1	1		1008551	GASKET, CONNECTOR, TRAY	23
		1	1		1008552	GASKET CONNECTOR TRAY	22
		X	—		1009552	WIRING DIAGRAM	REF
		1	—		1008269	WIRE LIST A A	21
		1	—		1015772	WIRING HARNESS A	20
		1	—		1007091	BUFFER RESISTOR ASSY	19
		2	2		1010620-5	PIN GUIDE	18
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	17
		1	1		1008099-2	WASHER	16
		1	1		1008098	SCREW, SOCKET HEAD	15
		1	1		1001317	RETAINER, JACK SCREW	14
		52	52		1004206	WASHER, THRUST	13
		26	26		MS171433	PIN, SPRING	12
		26	26		1004207	DRIVE CYLINDER	11
		26	26		1008172	SCREW, JACK	10
		2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	9
		2	2		MS 16995-11	SCREW, CAP, SOCKET HEAD	8
		1	—		1010622-1	CONNECTOR, RECEPTACLE,	7
		16	16		1010620-4	PIN, GUIDE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		129	129		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		129	129		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	1		1008102	FRAME	1

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007572		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN Deschler DATE 29 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 2

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007532
SCALE 1/1
WT
SHEET 1 OF 2

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REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
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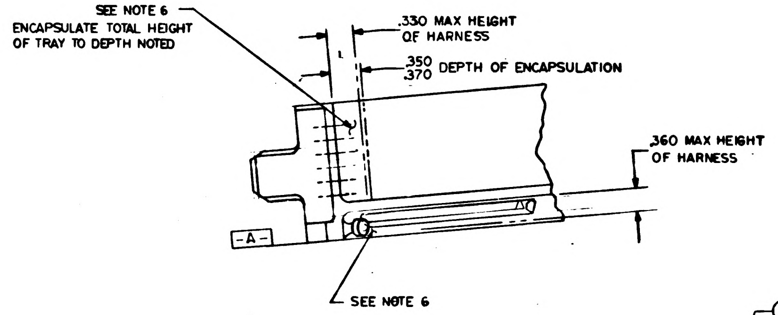
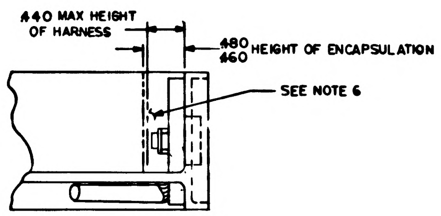
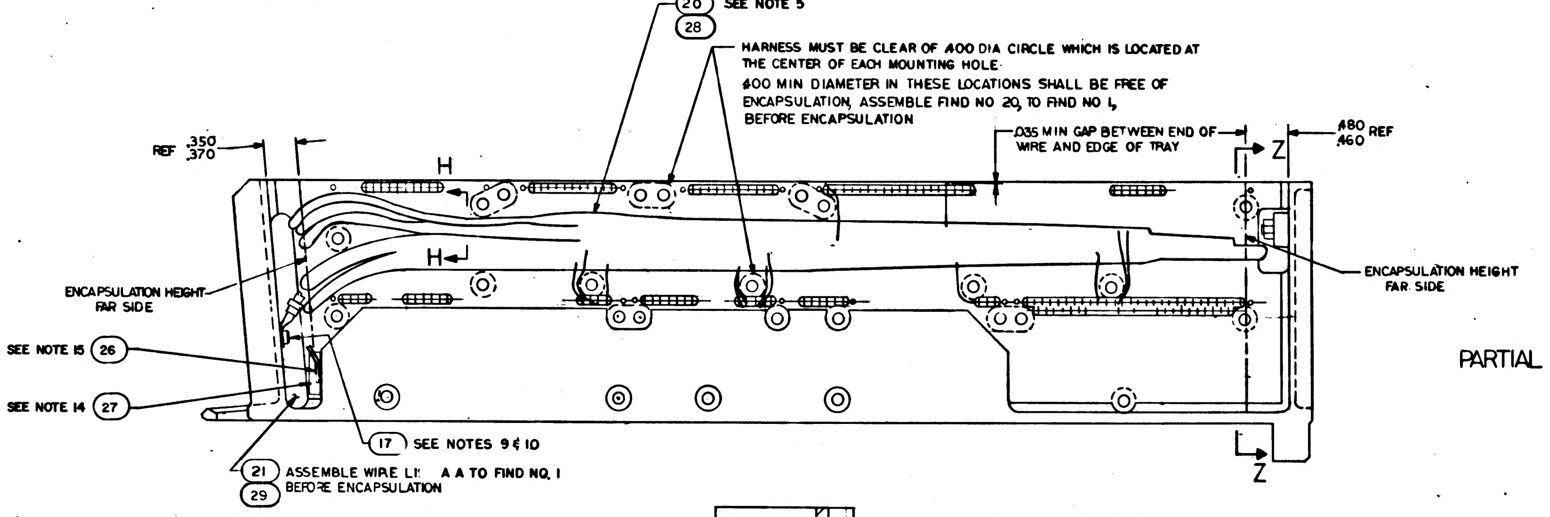
E	REVISED PER TDRR 15154	29 Dec 64	
F	REVISED PER TDRR 15238		

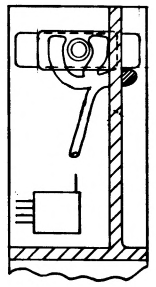

SEE NOTE 6
ENCAPSULATE TOTAL HEIGHT OF TRAY TO DEPTH NOTED
.330 MAX HEIGHT OF HARNESS
.350 .370 DEPTH OF ENCAPSULATION
.360 MAX HEIGHT OF HARNESS
-A-
SEE NOTE 6


.440 MAX HEIGHT OF HARNESS
.480 .460 HEIGHT OF ENCAPSULATION
SEE NOTE 6


20
28
SEE NOTE 5
HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MOUNTING HOLE.
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION, ASSEMBLE FIND NO 20, TO FIND NO 1, BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.480 .460 REF
Z
Z
REF .350 .370
H
H
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
SEE NOTE 15 26
SEE NOTE 14 27
17 SEE NOTES 9 & 10
21 ASSEMBLE WIRE LI A A TO FIND NO. 1 BEFORE ENCAPSULATION
29

PARTIAL SECTION H-H

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



PARTIAL SECTION Z-Z

Ⓓ REPLACES WORD DRAWING REV C

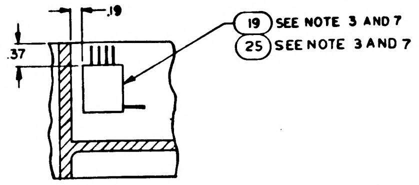
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

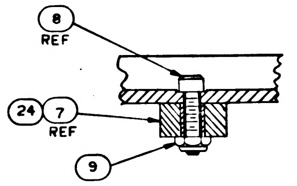
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± — DECIMALS ± — ANGLES ± — DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB CAMBRIDGE MASS DWG. NO. Contract NAS 9-497	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
MATERIAL —	DRAWN Geschke DATE 29 SEP 64 CHECKED 7 OCT 64 APPROVAL 8 OCT 64 MIT APPROVAL 10-29-64	FRAME ASSEMBLY TRAY 2
HEAT TREATMENT —	NASA APPROVAL	CODE IDENT NO — SIZE E — NASA DRAWING NO 1007532
FINAL FINISH —	MIT APPROVAL	SCALE FULL — WT — SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

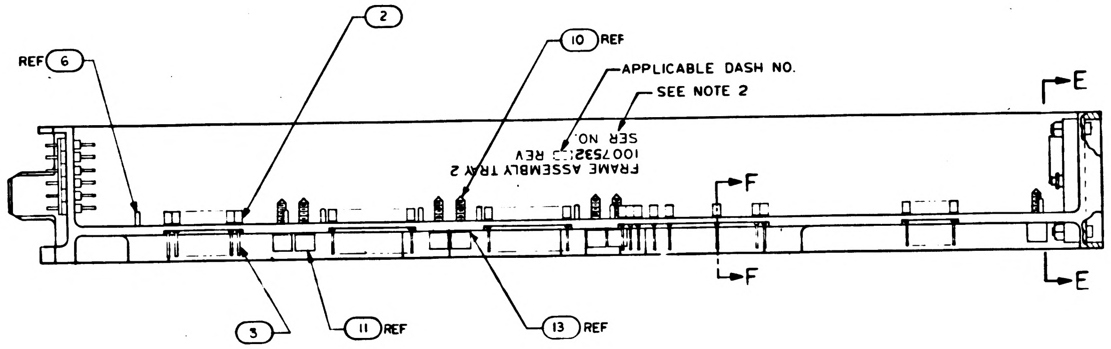
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
D		REPLACES WORD DWG REV C PER TDRR			
E		REVISED PER TDRR 15154			
F		REVISED PER TDRR 15238			
G		REVISED PER TDRR 15948		11 FEB 65	

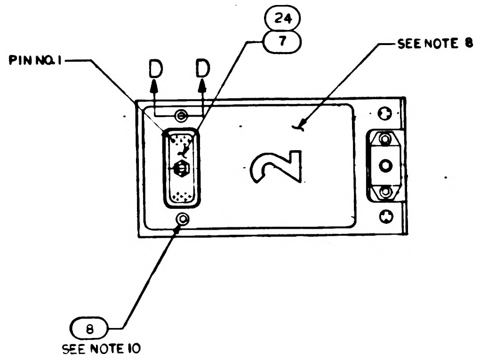


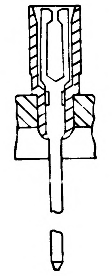
PARTIAL SECTION E-E



PARTIAL SECTION D-D
SCALE 2/1

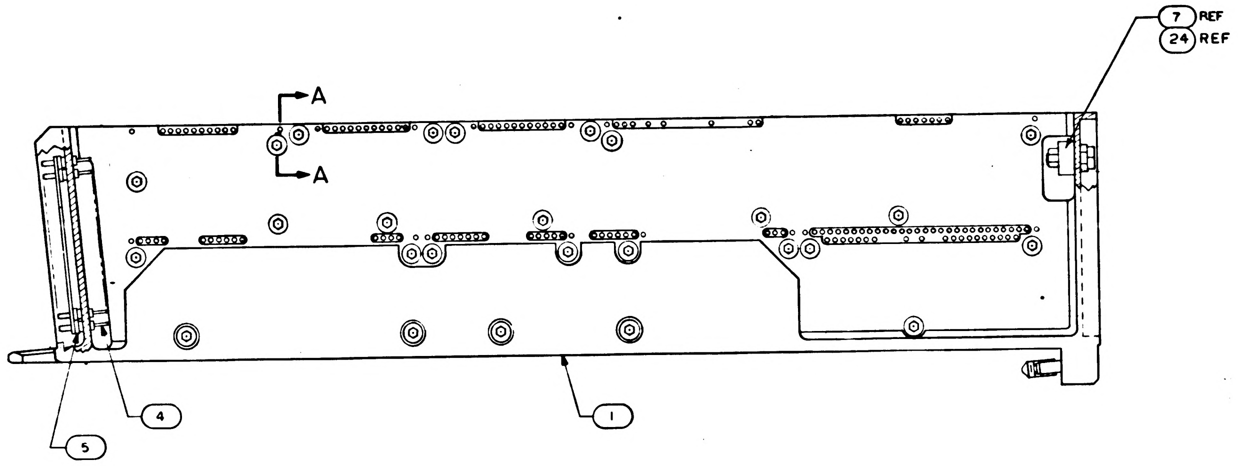


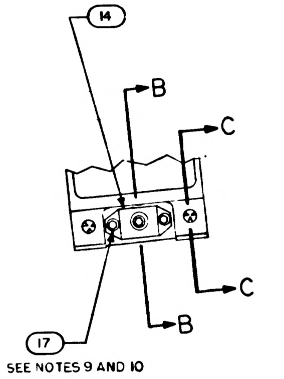


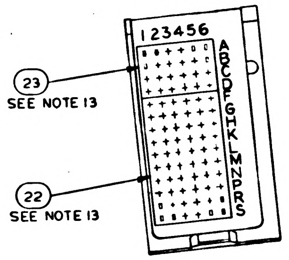


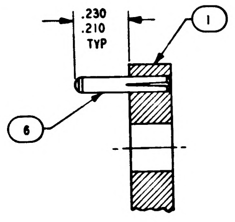
PARTIAL SECTION F-F
129 PLACES

Ⓓ REPLACES WORD DWG REV C

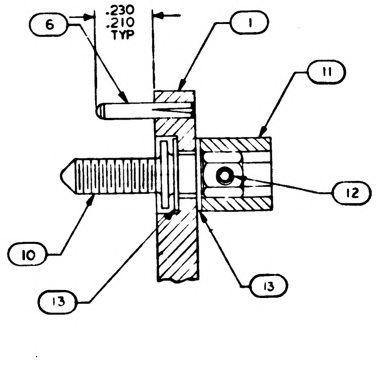




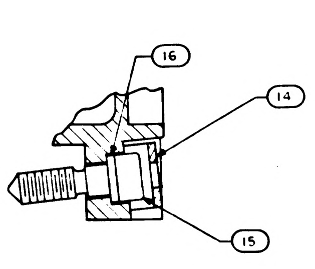




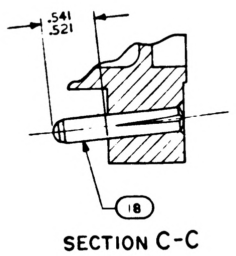
SECTION A-A
SCALE 4/1
-011 CONFIGURATION



SECTION A-A
SCALE 4/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A2E10	45A2J1-13
45A2E11	45A2J1-12
45A2E12	45A2J1-3
45A2E13	45A2J1-18
45A2E14	45A2J1-2
45A2E15	45A2J1-11

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MARK PER ND1002019 (BLACK).100/.140 HIGH/SERIALIZE PER ND1002023
3. BOND FIND NO. 19 AND 25 TO FIND NO. 1 PER ND1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686.
4. ASSEMBLE FIND NUMBERS 2,3,4 AND 5 PER ND1002136
5. BOND FIND NO. 20 AND 21 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19 AND 25.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
9. COAT THREADS OF FIND NO. 17 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NUMBERS 8 AND 17 TO FIND NO. 1 TO BE 5.0–5.5 IN. LB.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005.
ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071
ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS 1007142.
13. BOND FIND NO. 22 AND 23 TO FIND NO. 5 PER ND1002237
14. BOND FIND NO. 27 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NO. 27 AND THE ADJOINING AREA.
15. BOND FIND NO. 26 ONTO FIND NO. 27 AS PREPARED IN NOTE 14 PER ND1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED).

QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		021	011				
		–	1		1008628	WIRE LIST AA	29
		–	1		1008627	WIRING HARNESS A	28
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	27
		1	1		1006712-3	RESISTOR, TEMPERATURE SENSITIVE	26
		–	1		1007587-011	BUFFER RESISTOR ASSY	25
		–	X		1009562	WIRING DIAGRAM	REF
		–	1		1010821-1	CONNECTOR, RECEPTACLE	24
		1	1		1008551	GASKET, CONNECTOR, TRAY	23
		1	1		1008552	GASKET CONNECTOR TRAY	22
		X	–		1009552	WIRING DIAGRAM	REF
		1	–		1008269	WIRE LIST A A	21
		1	–		1015772	WIRING HARNESS A	20
		1	–		1007091	BUFFER RESISTOR ASSY	19
		2	2		1010620-5	PIN GUIDE	18
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	17
		1	1		1008099-2	WASHER	16
		1	1		1008098	SCREW, SOCKET HEAD	15
		1	1		1001317	RETAINER, JACK SCREW	14
		52	~~52~~		1004206	WASHER, THRUST	13
		26	~~26~~		MS171433	PIN, SPRING	12
		26	~~26~~		1004207	DRIVE CYLINDER	11
		26	~~26~~		1008172	SCREW, JACK	10
		2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	9
		2	2		MS 16995-11	SCREW, CAP, SOCKET HEAD	8
		1	–		1010622-1	CONNECTOR, RECEPTACLE,	7
		16	16		1010620-4	PIN, GUIDE	6
		84	84		1010383-1	INSULATOR, WRAPOST MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		129	129		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		129	129		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	1		1008102	FRAME.	1

LIST OF MATERIALS

1007572		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ±
DECIMALS ±.02
ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DWG NO
DRAWN Deschke DATE 29 SEP 64
CHECKED 1 OCT 64
APPROVAL 2 OCT 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

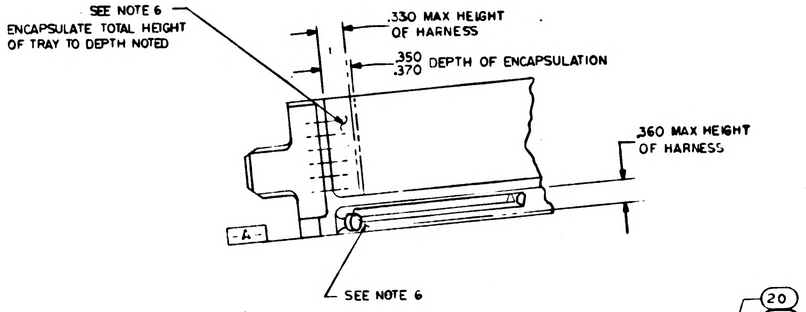
FRAME ASSEMBLY
TRAY 2

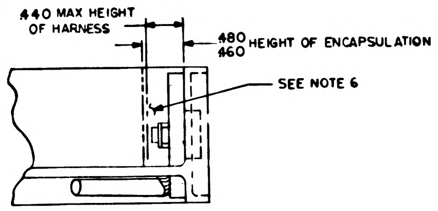
CODE IDENT NO
SIZE E
NASA DRAWING NO 1007532
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR 13735	[illegible]	WK
E	REVISED PER TDRR 15154	29 Dec 64	[illegible]
F	REVISED PER TDRR 15238		[illegible]
G	REVISED PER TDRR 15348	11 FEB 65	JK CW


SEE NOTE 6
ENCAPSULATE TOTAL HEIGHT OF TRAY TO DEPTH NOTED
.330 MAX HEIGHT OF HARNESS
.350 .370 DEPTH OF ENCAPSULATION
.360 MAX HEIGHT OF HARNESS
-A-
SEE NOTE 6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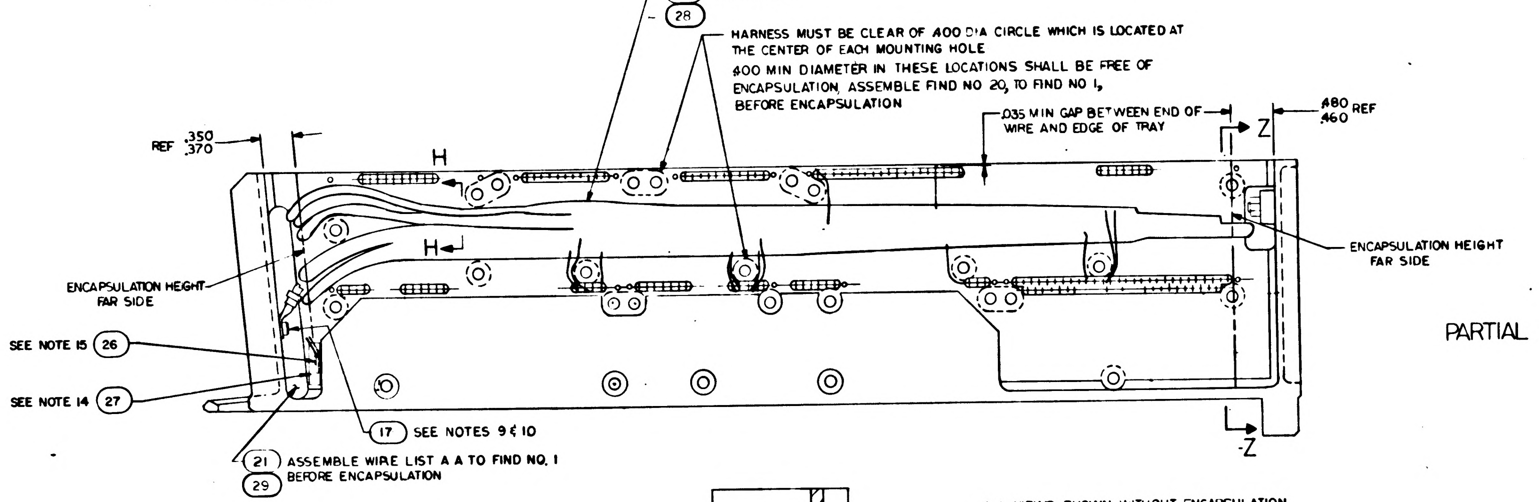
.480 .460 HEIGHT OF ENCAPSULATION
SEE NOTE 6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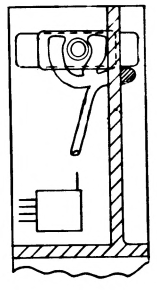
SEE NOTE 5
HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION, ASSEMBLE FIND NO 20, TO FIND NO 1, BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.480 .460 REF
Z
REF .350 .370
H
H
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
SEE NOTE 15
26
SEE NOTE 14
27
17
SEE NOTES 9 & 10
21
29
ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
Z

PARTIAL SECTION H-H

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



PARTIAL SECTION Z-Z

Ⓓ REPLACES WORD DRAWING REV C

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO Contract NAS 9-497
DRAWN Zeschke DATE 29 SEP 64
CHECKED [illegible] 7 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible] 10-24-64
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 2

CODE IDENT NO
SIZE E
NASA DRAWING NO 1007532
SCALE FULL
WT
SHEET 2 OF 2

1007532 G

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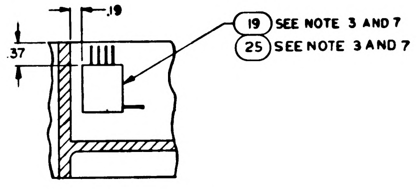
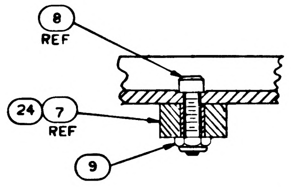
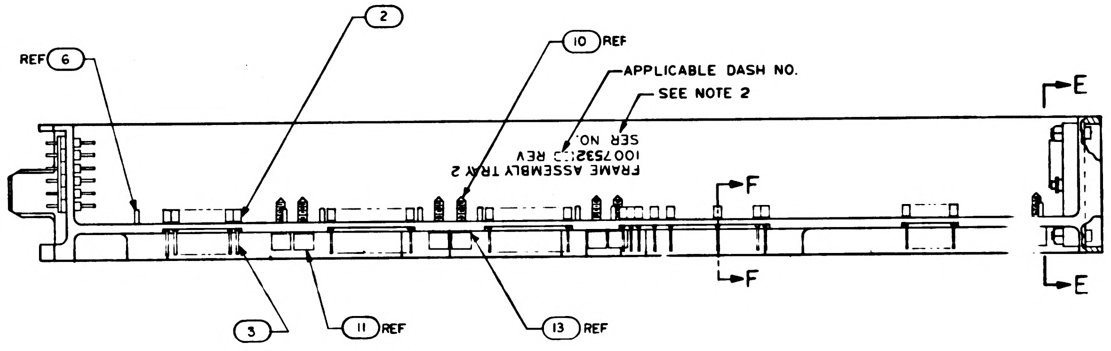
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
D		REPLACES WORD DWG REV C PER TDRR			
E		REVISED PER TDRR 15154			
F		REVISED PER TDRR 15238			
G		REVISED PER TDRR 15948		11 FEB 65	
H		REVISED PER TDRR16267			

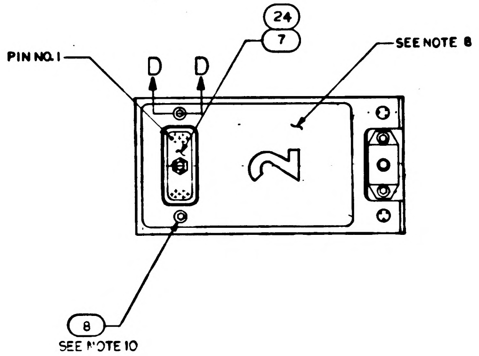


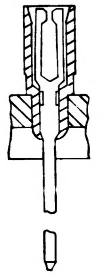
PARTIAL SECTION E-E



PARTIAL SECTION D-D
SCALE 2/1

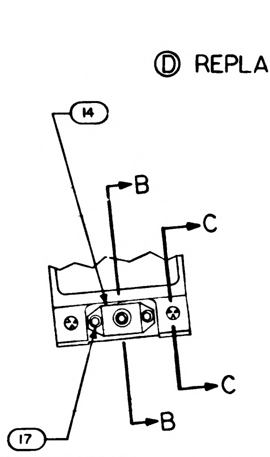




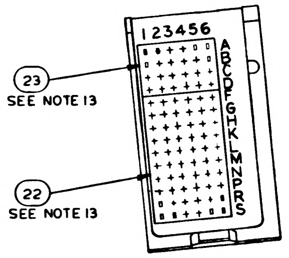


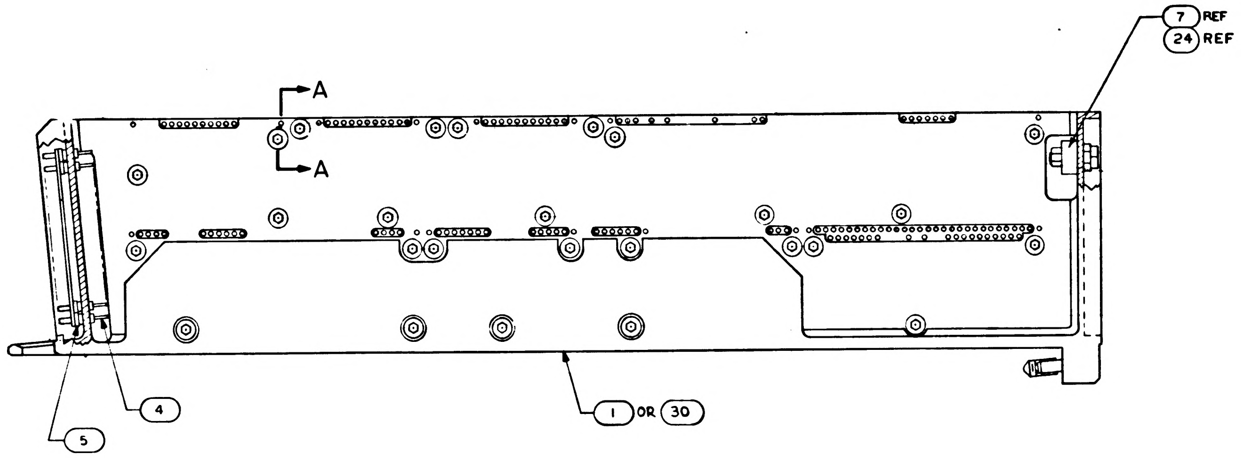
PARTIAL SECTION F-F
129 PLACES

Ⓓ REPLACES WORD DWG REV C



SEE NOTES 9 AND 10





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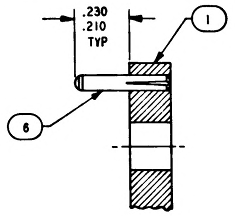
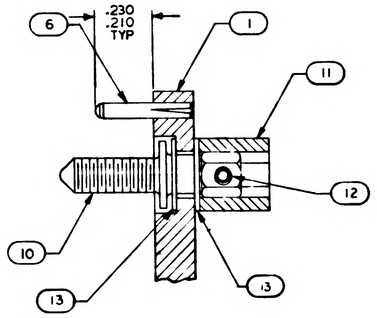
		–	1		1008627	WIRING HARNESS A	28
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	27
		1	1		1006712-3	RESISTOR, TEMPERATURE SENSITIVE	26
		–	1		1007587-011	BUFFER RESISTOR ASSY	25
		–	☒		1009562	WIRING DIAGRAM	REF
		–	1		1010821-1	CONNECTOR, RECEPTACLE	24
		1	1		1008551	GASKET, CONNECTOR, TRAY	23
		1	1		1008552	GASKET CONNECTOR TRAY	22
		☒	–		1009552	WIRING DIAGRAM	REF
		1	–		1008269	WIRE LIST A A	21
		1	–		1015772	WIRING HARNESS A	20
		1	–		1007091	BUFFER RESISTOR ASSY	19
		2	2		1010620-5	PIN GUIDE	18
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	17
		1	1		1008099-2	WASHER	16
		1	1		1008098	SCREW, SOCKET HEAD	15
		1	1		1001317	RETAINER, JACK SCREW	14
		52	~~52~~		1004206	WASHER, THRUST	13
		26	~~26~~		MS171433	PIN, SPRING	12
		26	~~26~~		1004207	DRIVE CYLINDER	11
		26	~~26~~		1008172	SCREW, JACK	10
		2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	9
		2	2		MS 16995-11	SCREW, CAP, SOCKET HEAD	8
		1	–		1010622-1	CONNECTOR, RECEPTACLE,	7
		16	16		1010620-4	PIN, GUIDE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		129	129		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		129	129		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	–		1008102	FRAME,	1
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
QUANTITY REQUIRED					LIST OF MATERIALS		

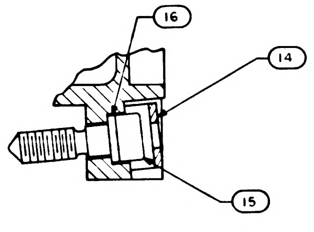


SECTION A-A
SCALE 4/1
-011 CONFIGURATION

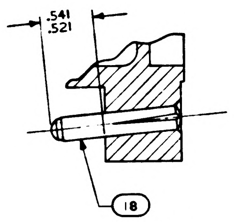
TERMINATION CHART	
FROM	TO
45A2E10	45A2J1-13
45A2E11	45A2J1-12
45A2E12	45A2J1-3
45A2E13	45A2J1-18
45A2E14	45A2J1-2
45A2E15	45A2J1-11



SECTION A-A
SCALE 4/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MARK PER ND1002019 (BLACK).100/.140 HIGH/SERIALIZE PER ND 1002023
3. BOND FIND NO. 19 AND 25 TO FIND NO. 1 PER ND1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686.
4. ASSEMBLE FIND NUMBERS 2,3,4 AND 5 PER ND 1002136
5. BOND FIND NO. 20 AND 21 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19 AND 25.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
9. COAT THREADS OF FIND NO. 17 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NUMBERS 8 AND 17 TO FIND NO. 1 TO BE 5.0–5.5 IN. LB.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005.
    ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071
    ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS 1007142.
13. BOND FIND NO. 22 AND 23 TO FIND NO. 5 PER ND1002237
14. BOND FIND NO. 27 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NO. 27 AND THE ADJOINING AREA.
15. BOND FIND NO. 26 ONTO FIND NO. 27 AS PREPARED IN NOTE 14 PER ND1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED).

1007572		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN Deschler DATE 29 SEP 64
CHECKED [illegible] 1 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible] 10-29-64
NASA APPROVAL [illegible] 11-4-64
MIT APPROVAL [illegible] 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 2

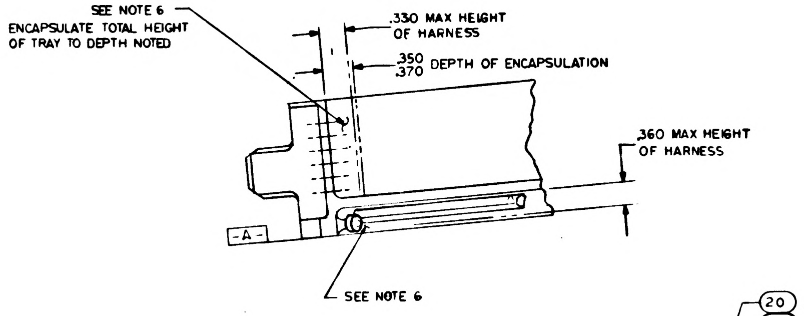
CODE IDENT NO.
SIZE E
NASA DRAWING NO 1007532
SCALE 1/1
WT
SHEET 1 OF 2

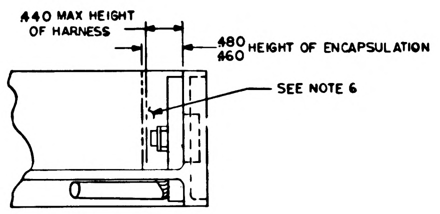
H 1007532

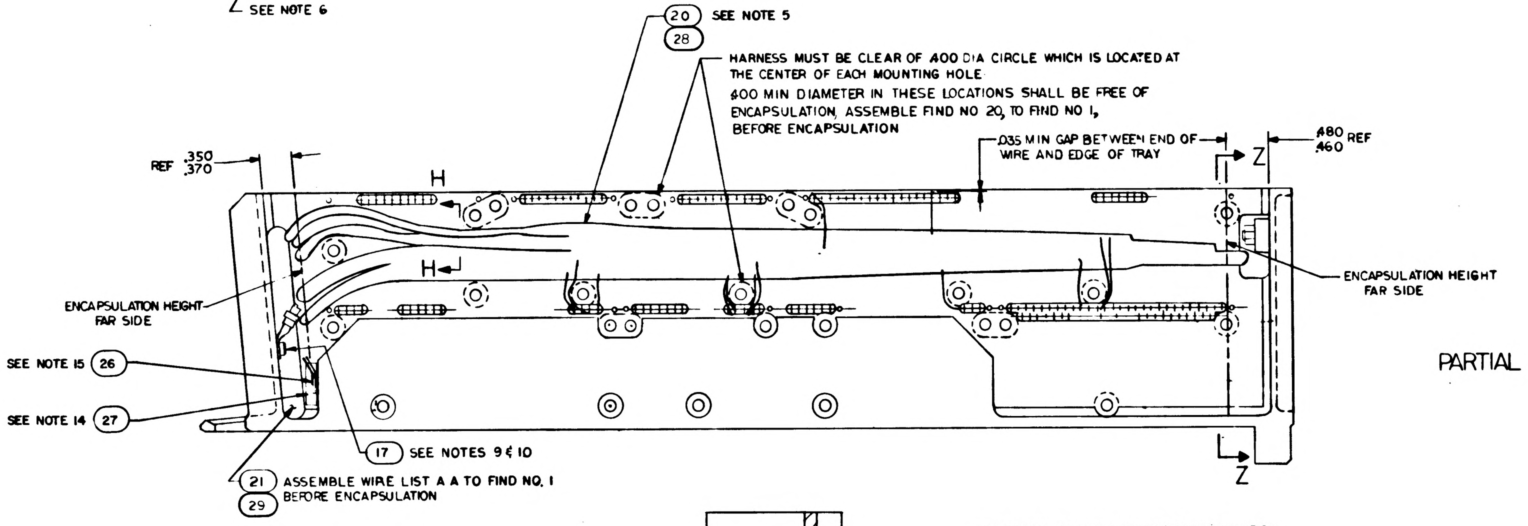
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR 3757	4/3	
E	REVISED PER TDRR 15154	23 Dec 64	
F	REVISED PER TDRR 15238		
G	REVISED PER TDRR 15948	11 FEB 65	JK
H	REVISED PER TDRR 16267	15 FEB 65	WP

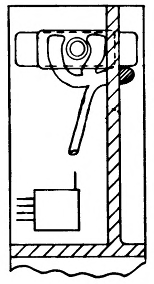

SEE NOTE 6
ENCAPSULATE TOTAL HEIGHT OF TRAY TO DEPTH NOTED
.330 MAX HEIGHT OF HARNESS
.350
.370 DEPTH OF ENCAPSULATION
.360 MAX HEIGHT OF HARNESS
-A-
SEE NOTE 6


.440 MAX HEIGHT OF HARNESS
.480
.460 HEIGHT OF ENCAPSULATION
SEE NOTE 6


20
28
SEE NOTE 5
HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION, ASSEMBLE FIND NO 20, TO FIND NO 1, BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.480
.460 REF
Z
Z
REF .350
.370
H
H
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
SEE NOTE 15
26
SEE NOTE 14
27
17
SEE NOTES 9 & 10
21
29
ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION

PARTIAL SECTION H-H

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



PARTIAL SECTION Z-Z

Ⓓ REPLACES WORD DRAWING REV C

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN Geschke DATE 29 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-29-64
NASA APPROVAL
MIT APPROVAL

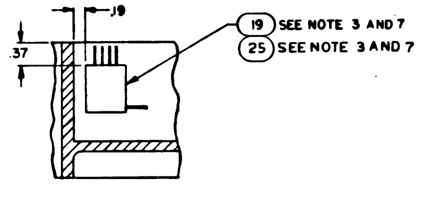
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 2

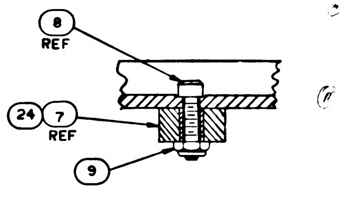
CODE IDENT NO.
SIZE E
NASA DRAWING NO 1007532
SCALE FULL
WT
SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

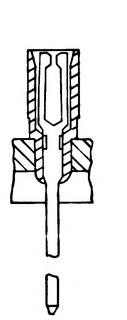
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
D		REPLACES WORD DWG REV C PER TDRR			
E		REVISED PER TDRR 15154			
F		REVISED PER TDRR 15238			
G		REVISED PER TDRR 15948		11 FEB 65	
H		REVISED PER TDRR 16267			
J		REVISED PER TDRR 17613		24 MAR 65	RJJ



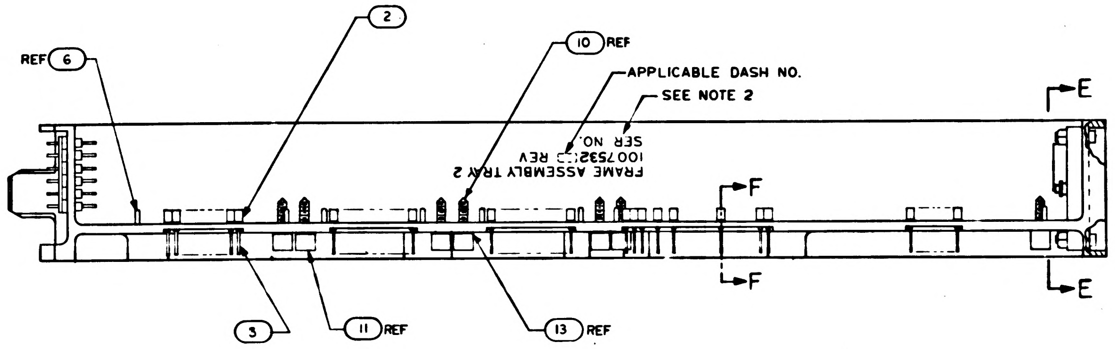
PARTIAL SECTION E-E

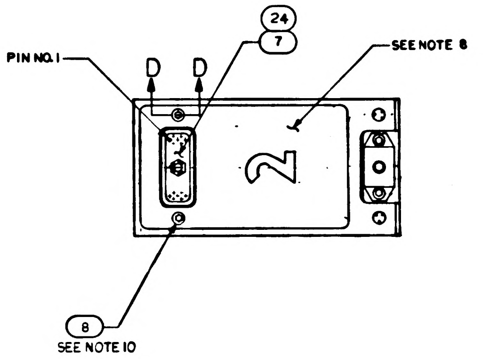


PARTIAL SECTION D-D
SCALE 2/1

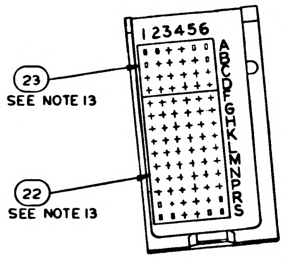


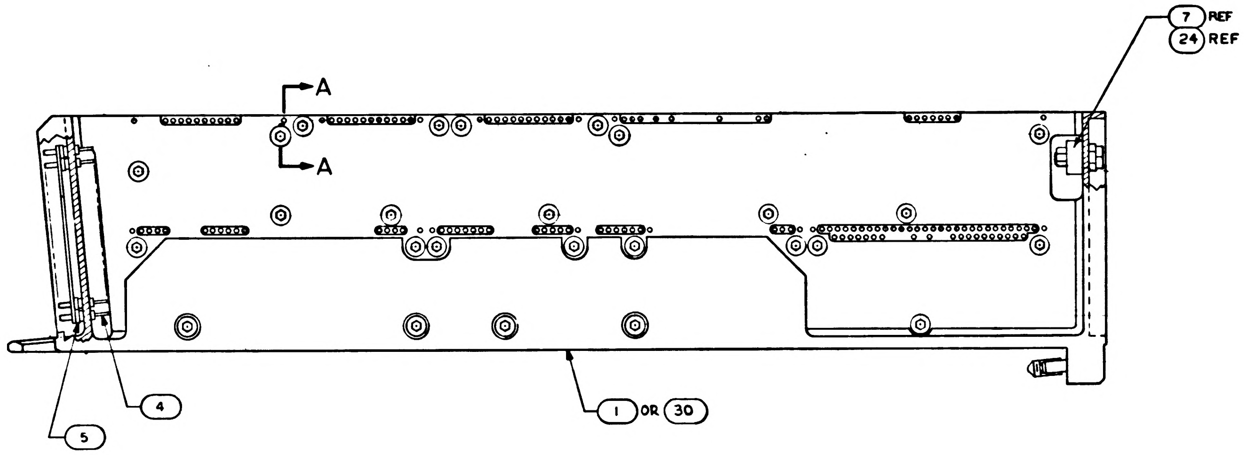
PARTIAL SECTION F-F
129 PLACES

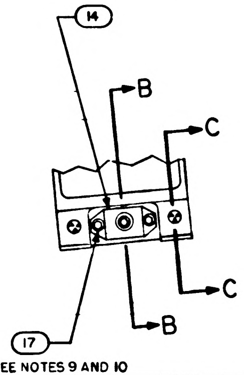




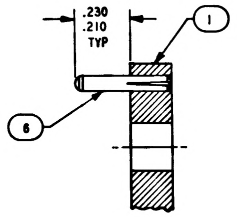
Ⓓ REPLACES WORD DWG REV C



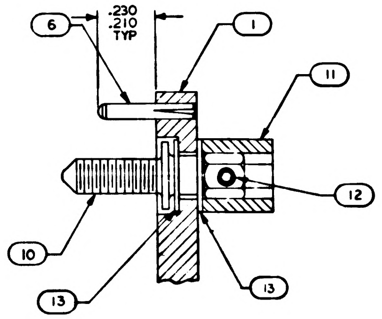




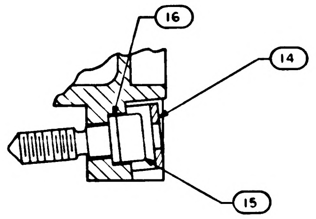
SEE NOTES 9 AND 10



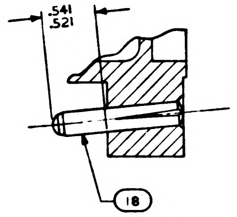
SECTION A-A
SCALE 4/1
-011 CONFIGURATION



SECTION A-A
SCALE 4/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A2E10	45A2J1-13
45A2E11	45A2J1-12
45A2E12	45A2J1-3
45A2E13	45A2J1-18
45A2E14	45A2J1-2
45A2E15	45A2J -11

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MARK PER ND1002019 (BLACK) .100/.140 HIGH/SERIALIZE PER ND 1002023
3. BOND FIND NO. 19 AND 25 TO FIND NO. 1 PER ND1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686.
4. ASSEMBLE FIND NUMBERS 2,3,4 AND 5 PER ND 1002136
5. BOND FIND NO. 20 AND 21 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) .010 ABOVE TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME UNLESS OTHERWISE SPECIFIED.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19 AND 25.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
9. COAT THREADS OF FIND NO. 17 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NUMBERS 8 AND 17 TO FIND NO. 1 TO BE 5.0–5.5 IN. LB.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071 ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS 1007142.
13. BOND FIND NO. 22 AND 23 TO FIND NO. 5 PER ND1002237
14. BOND FIND NO. 27 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NO. 27 AND THE ADJOINING AREA.
15. BOND FIND NO. 26 ONTO FIND NO. 27 AS PREPARED IN NOTE 14 PER ND1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED).

QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		021	011		LIST OF MATERIALS		
		–	1		1008522	FRAME	30
		–	1		1008628	WIRE LIST AA	29
		–	1		1008627	WIRING HARNESS A	28
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	27
		1	1		1006712-3	RESISTOR, TEMPERATURE SENSITIVE	26
		–	1		1007587-011	BUFFER RESISTOR ASSY	25
		–	╳		1009562	WIRING DIAGRAM	REF
		–	1		1010821-1	CONNECTOR, RECEPTACLE	24
		1	1		1008551	GASKET, CONNECTOR, TRAY	23
		1	1		1008552	GASKET CONNECTOR TRAY	22
		╳	–		1009552	WIRING DIAGRAM	REF
		1	–		1008269	WIRE LIST A A	21
		1	–		1015772	WIRING HARNESS A	20
		1	–		1007091	BUFFER RESISTOR ASSY	19
		2	2		1010620-5	PIN GUIDE	18
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	17
		1	1		1008099-2	WASHER	16
		1	1		1008098	SCREW, SOCKET HEAD	15
		1	1		1001317	RETAINER, JACK SCREW	14
		52	~~52~~		1004206	WASHER, THRUST	13
		26	~~26~~		MS171433	PIN, SPRING	12
		26	~~26~~		1004207	DRIVE CYLINDER	11
		26	~~26~~		1008172	SCREW, JACK	10
		2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	9
		2	2		MS 16995-11	SCREW, CAP, SOCKET HEAD	8
		1	–		1010622-1	CONNECTOR, RECEPTACLE,	7
		16	16		1010620-4	PIN, GUIDE	6
		84	84		1010383-1	INSULATOR, WRAPOST MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		129	129		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		129	129		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	–		1008102	FRAME	1

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007572		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN Deschke DATE 29 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-29-64
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 2

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007532
SCALE 1/1
WT
SHEET 1 OF 2

1007532 J

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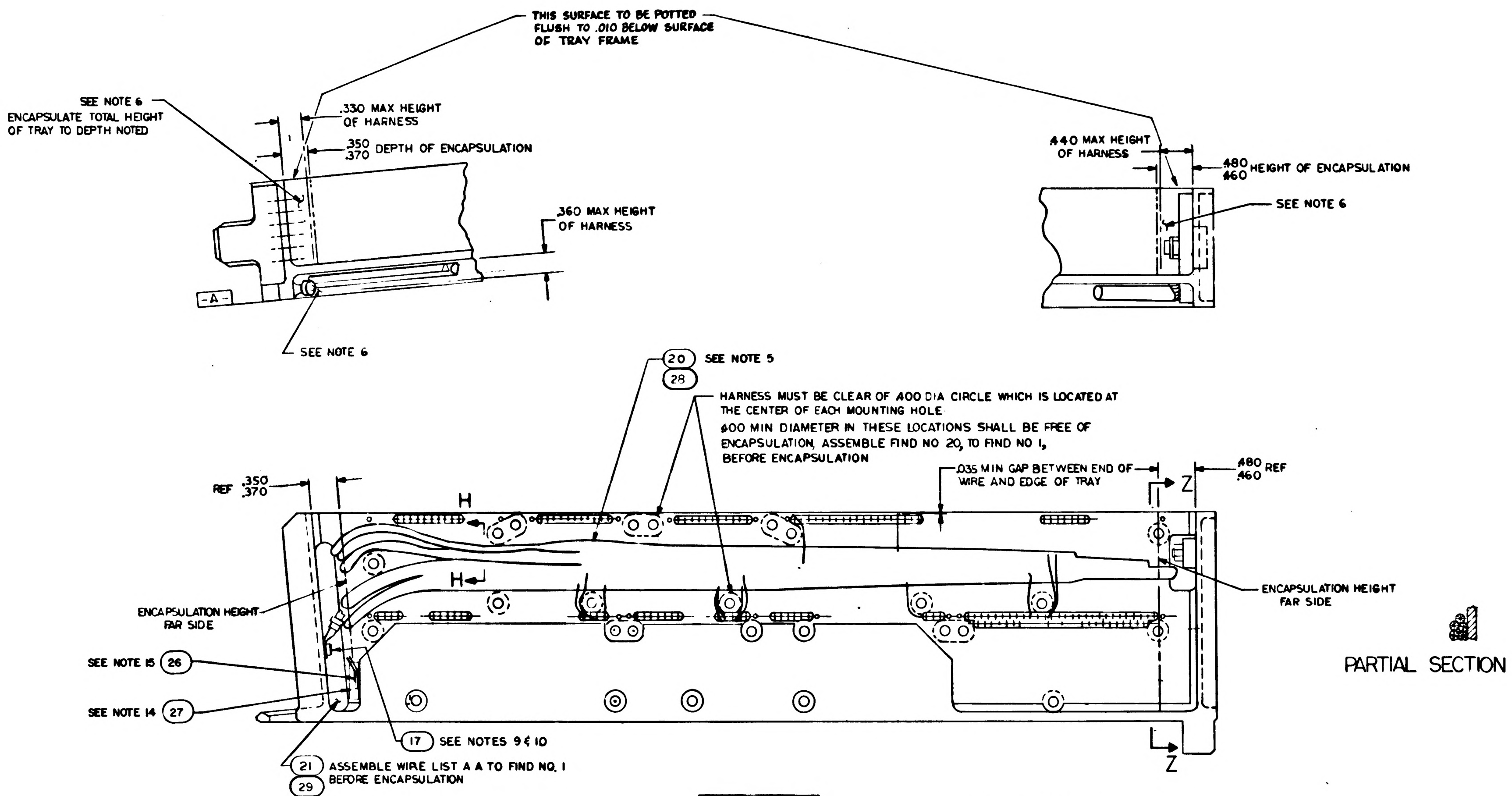
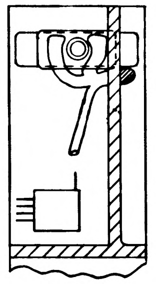
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR 12379	[illegible]	WK
E	REVISED PER TDRR 15154	29 Dec 64	[illegible]
F	REVISED PER TDRR 15238		[illegible]
G	REVISED PER TDRR 15348	11 FEB 65	JK
H	REVISED PER TDRR 16267	15 FEB 65	WP
J	REVISED PER TDRR 17613	24 MAR 65	RJJ


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 6
ENCAPSULATE TOTAL HEIGHT OF TRAY TO DEPTH NOTED
.330 MAX HEIGHT OF HARNESS
.350
.370 DEPTH OF ENCAPSULATION
.360 MAX HEIGHT OF HARNESS
-A-
SEE NOTE 6
.440 MAX HEIGHT OF HARNESS
.480
.460 HEIGHT OF ENCAPSULATION
SEE NOTE 6
20
28
SEE NOTE 5
HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION, ASSEMBLE FIND NO 20, TO FIND NO 1, BEFORE ENCAPSULATION
REF .350
.370
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.480
.460 REF
H
H
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
SEE NOTE 15 26
SEE NOTE 14 27
17 SEE NOTES 9 & 10
21
29 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION

PARTIAL SECTION H-H

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



PARTIAL SECTION Z-Z

Ⓓ REPLACES WORD DRAWING REV C

1007532 J

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

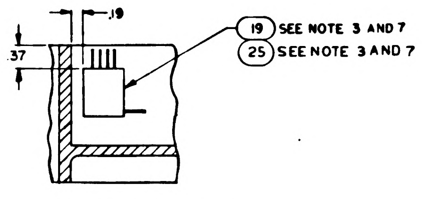
MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN Boschke DATE 29 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-29-64
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

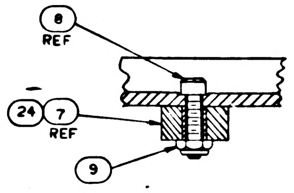
FRAME ASSEMBLY
TRAY 2

CODE IDENT NO.
SIZE E
NASA DRAWING NO 1007532
SCALE FULL
WT
SHEET 2 OF 2

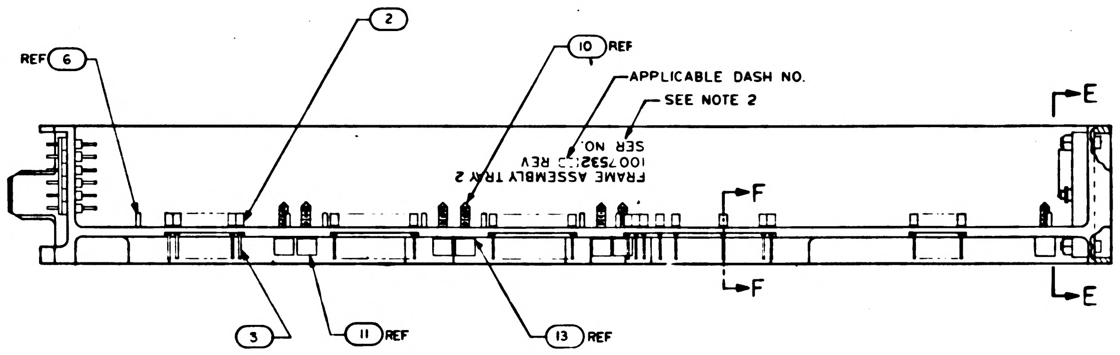
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
D		REPLACES WORD DWG REV C PER TDRR [illegible]		[illegible]	
E		REVISED PER TDRR 15154		[illegible]	
F		REVISED PER TDRR 15238			
G		REVISED PER TDRR 15948		11 FEB 65	
H		REVISED PER TDRR 16267		15 FEB 65	
J		REVISED PER TDRR 17613		24 MAR 65	RJJ
K		REVISED PER TDRR 18690		4 MAY 65	EF

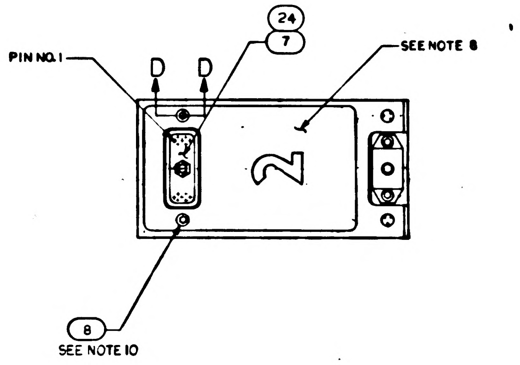


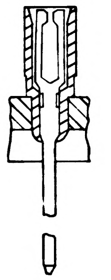
PARTIAL SECTION E-E



PARTIAL SECTION D-D
SCALE 2/1

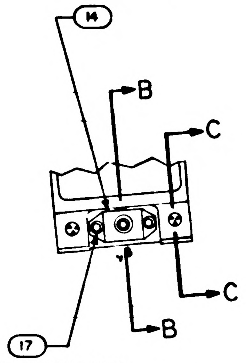


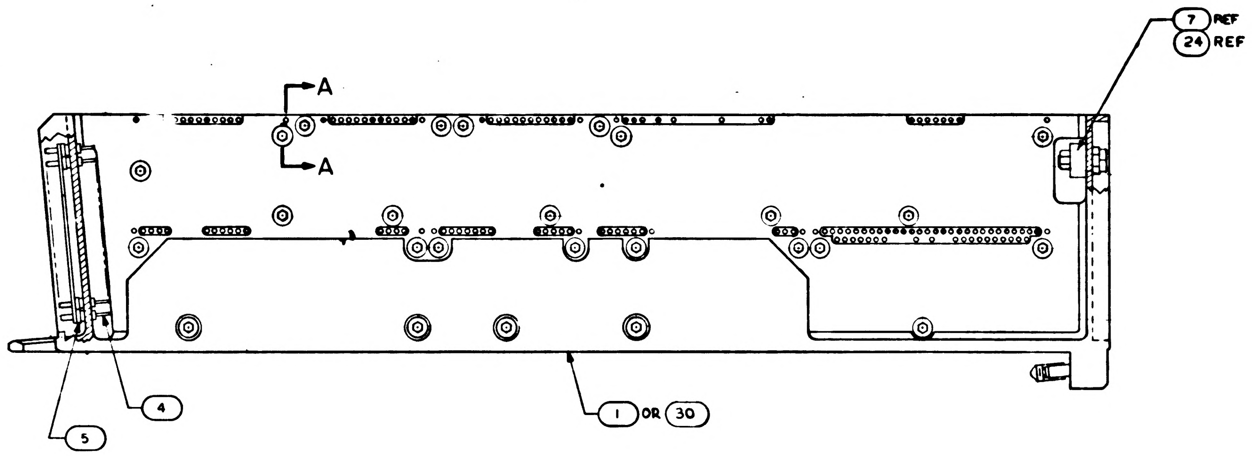


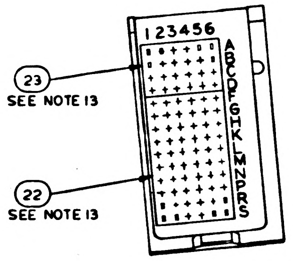


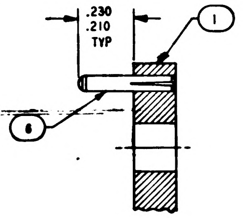
PARTIAL SECTION F-F
129 PLACES

Ⓓ REPLACES WORD DWG REV C

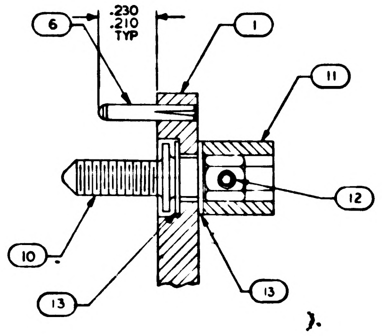




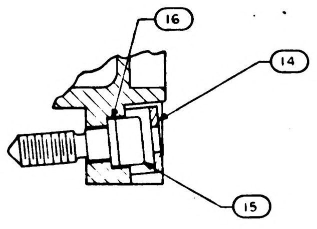




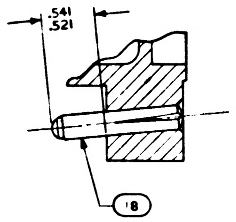
SECTION A-A
SCALE 4/1
-011 CONFIGURATION



SECTION A-A
SCALE 4/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A2E10	45A2J1-13
45A2E11	45A2J1-12
45A2E12	45A2J1-3
45A2E13	45A2J1-18
45A2E14	45A2J1-2
45A2E15	45A2J1-11

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MARK PER ND1002019 (BLACK) .100/.140 HIGH/SERIALIZE PER ND 1002023
3. BOND FIND NO. 19 AND 25 TO FIND NO. 1 PER ND1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686.
4. ASSEMBLE FIND NUMBERS 2,3,4 AND 5 PER ND 1002136
5. BOND FIND NO. 20 AND 21 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) .010 ABOVE TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME UNLESS OTHERWISE SPECIFIED.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19 AND 25.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
9. COAT THREADS OF FIND NO. 17 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NUMBERS 8 AND 17 TO FIND NO. 1 TO BE 5.0–5.5 IN. LB.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS 1007142.
13. BOND FIND NO. 22 AND 23 TO FIND NO. 5 PER ND1002237
14. BOND FIND NO. 27 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NO. 27 AND THE ADJOINING AREA.
15. BOND FIND NO. 26 ONTO FIND NO. 27 AS PREPARED IN NOTE 14 PER ND1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED).

SEE NOTES 9 AND 10

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		–	1		1008522	FRAME	30
		–	1		1008628	WIRE LIST AA	29
		–	1		1008627	WIRING HARNESS A	28
		AR	AR		MIL-I-18126	MYLAR TAPE, TYPE MFT 2.5	27
		1	1		1006712-3	RESISTOR, TEMPERATURE SENSITIVE	26
		–	1		1007587-011	BUFFER RESISTOR ASSY	25
		–	☒		1009562	WIRING DIAGRAM	REF
		–	1		1010821-1	CONNECTOR, RECEPTACLE	24
		1	1		1008551	GASKET, CONNECTOR, TRAY	23
		1	1		1008552	GASKET CONNECTOR TRAY	22
		☒	–		1009552	WIRING DIAGRAM	REF
		1	–		1008269	WIRE LIST A A	21
		1	–		1015772	WIRING HARNESS A	20
		1	–		1007091	BUFFER RESISTOR ASSY	19
		2	2		1010620-5	PIN GUIDE	18
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	17
		1	1		1008099-2	WASHER	16
		1	1		1008098	SCREW, SOCKET HEAD	15
		1	1		1001317	RETAINER, JACK SCREW	14
		52	~~52~~		1004206	WASHER, THRUST	13
		26	~~26~~		MS171433	PIN, SPRING	12
		26	~~26~~		1004207	DRIVE CYLINDER	11
		26	~~26~~		1008172	SCREW, JACK	10
		2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	9
		2	2		MS 16995-11	SCREW, CAP, SOCKET HEAD	8
		1	–		1010622-1	CONNECTOR, RECEPTACLE,	7
		16	16		MS16556-604	PIN, GUIDE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		129	129		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		129	129		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	–		1008102	FRAME,	1

QUANTITY REQUIRED
LIST OF MATERIALS

1007572		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN DATE 29 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

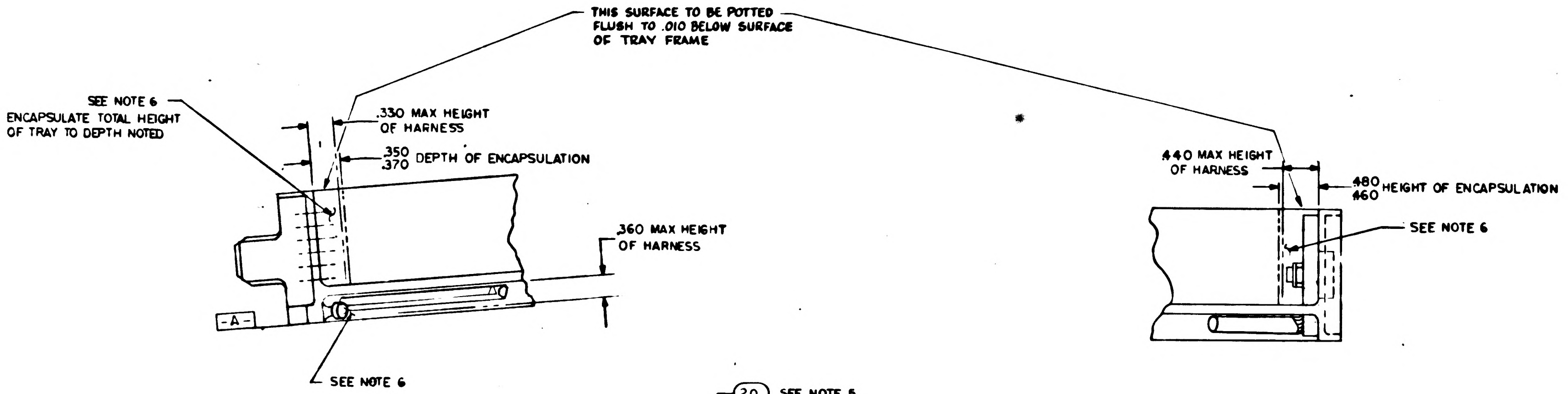
FRAME ASSEMBLY
TRAY 2

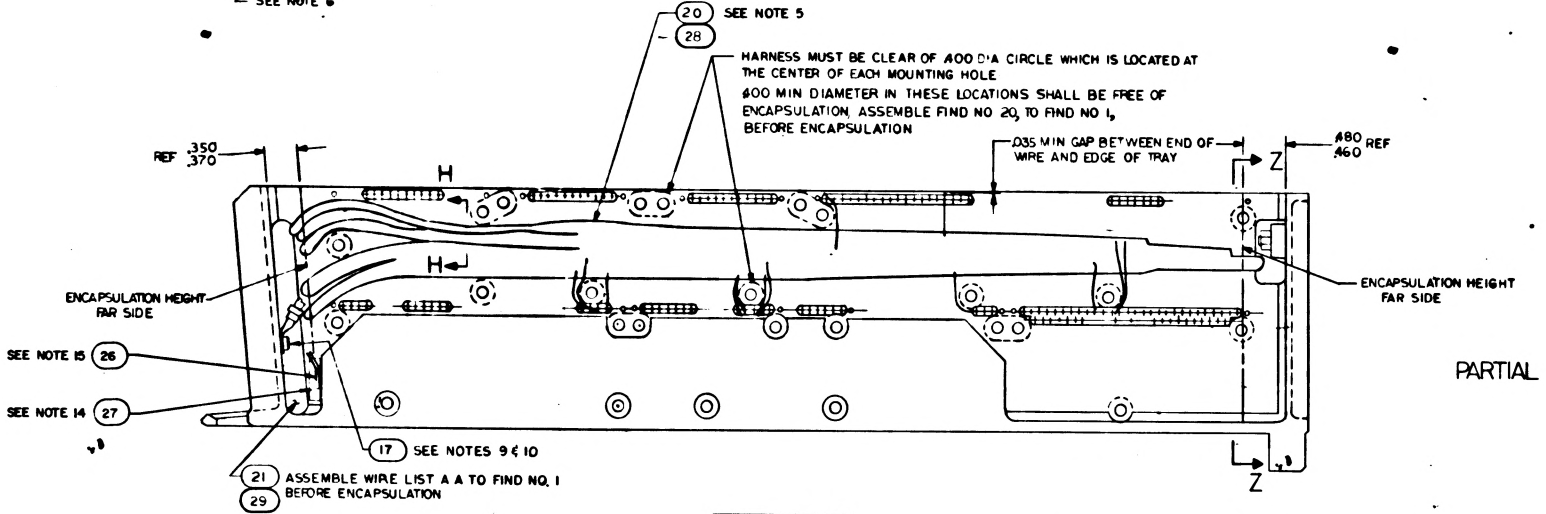
CODE IDENT NO
SIZE E
NASA DRAWING NO. 1007532
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

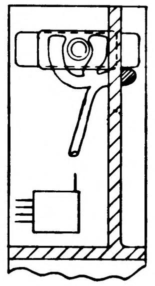
SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR 13735	11/4/64	WK
E	REVISED PER TDRR 15154	29 Dec 64	
F	REVISED PER TDRR 15238		
G	REVISED PER TDRR 15348	11 FEB 65	J.K. CW
H	REVISED PER TDRR 16267	15 FEB 65	JWP
J	REVISED PER TDRR 17613	24 MAR 65	RJJ WD
K	REVISED PER TDRR 18690	4 MAY 65	CF WD


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 6
ENCAPSULATE TOTAL HEIGHT OF TRAY TO DEPTH NOTED
.330 MAX HEIGHT OF HARNESS
.350 .370 DEPTH OF ENCAPSULATION
.360 MAX HEIGHT OF HARNESS
-A-
SEE NOTE 6
.440 MAX HEIGHT OF HARNESS
.480 .460 HEIGHT OF ENCAPSULATION
SEE NOTE 6


20 SEE NOTE 5
28
HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION, ASSEMBLE FIND NO 20, TO FIND NO 1, BEFORE ENCAPSULATION
REF .350 .370
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.480 .460 REF
H
H
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
SEE NOTE 15 26
SEE NOTE 14 27
17 SEE NOTES 9 & 10
21 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
29

PARTIAL SECTION H-H

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



PARTIAL SECTION Z-Z

Ⓓ REPLACES WORD DRAWING REV C

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN Goschke DATE 29 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-29-64
NASA APPROVAL
MIT APPROVAL

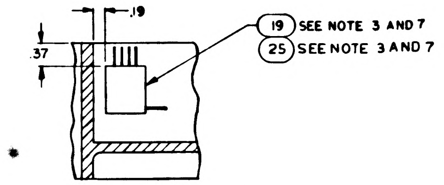
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 2

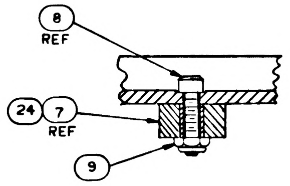
CODE IDENT NO.
SIZE E
NASA DRAWING NO 1007532
SCALE FULL
WT
SHEET 2 OF 2

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

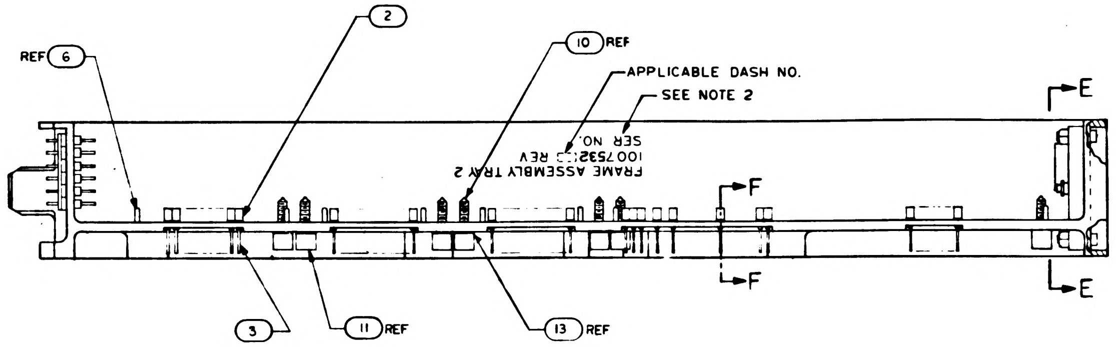
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
D		REPLACES WORD DWG REV C PER TDRR 12937			WK
E		REVISED PER TDRR 15154			
F		REVISED PER TDRR 15238			WK
G		REVISED PER TDRR 15948		11 FEB 65	JK. DW
H		REVISED PER TDRR16267		15 FEB 65	JWP
J		REVISED PER TDRR 17613		24 MAR 65	RJJ J.D
K		REVISED PER TDRR 18690		4 MAY 65	EF W.T
L		REVISED PER TDRR 18691		6 MAY 65	JJJ EF

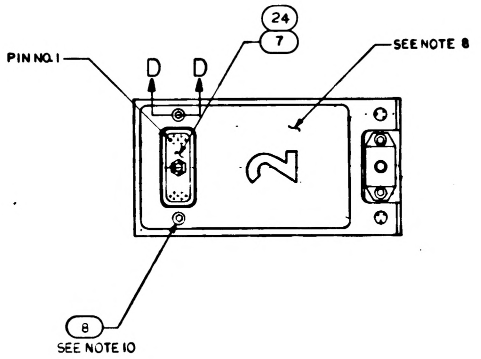


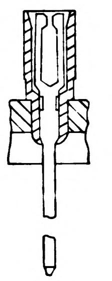
PARTIAL SECTION E-E



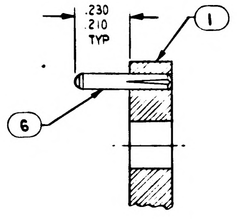
PARTIAL SECTION D-D
SCALE 2/1





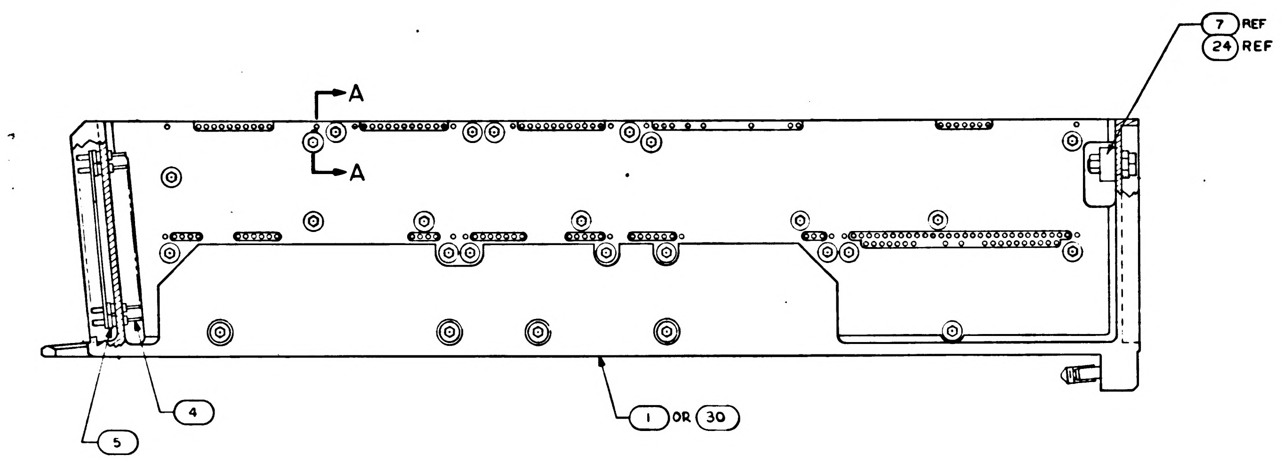


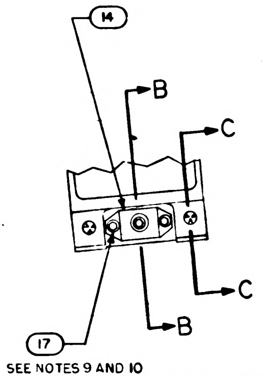
PARTIAL SECTION F-F
129 PLACES

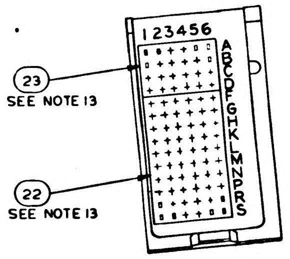


SECTION A-A
SCALE 4/1
-011 CONFIGURATION

D REPLACES WORD DWG REV C

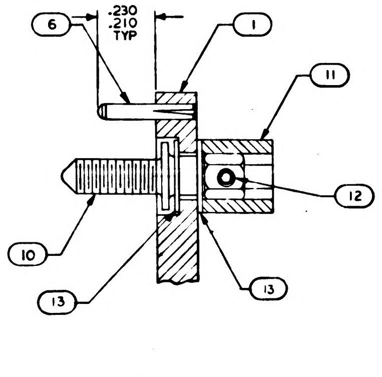




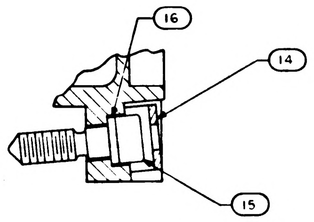


NOTES:

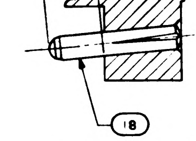
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MARK PER ND 1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023
3. BOND FIND NO. 19 AND 25 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
4. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND 1002136
5. BOND FIND NO. 20 AND 21 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19 AND 25.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 17 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NUMBERS 8 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS 1007142
13. BOND FIND NO. 22 AND 23 TO FIND NO. 5 PER ND 1002237
14. BOND FIND NO. 27 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND 1002187 OVER FIND NO. 27 AND THE ADJOINING AREA.
15. BOND FIND NO. 26 ONTO FIND NO. 27 AS PREPARED IN NOTE 14 PER ND 1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED)
16. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH OR WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.



SECTION A-A
SCALE 4/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A2E10	45A2J1-13
45A2E11	45A2J1-12
45A2E12	45A2J1-3
45A2E13	45A2J1-18
45A2E14	45A2J1-2
45A2E15	45A2J1-11

QUANTITY REQUIRED 021	QUANTITY REQUIRED 011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
–	1		1008522	FRAME	30
–	1		1008628	WIRE LIST AA	29
–	1		1008627	WIRING HARNESS A	28
AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	27
1	1		1006712-3	RESISTOR, TEMPERATURE SENSITIVE	26
–	1		1007587-011	BUFFER RESISTOR ASSY	25
–	☒		1009562	WIRING DIAGRAM	REF
–	1		1010821-1	CONNECTOR, RECEPTACLE	24
1	1		1008551	GASKET, CONNECTOR, TRAY	23
1	1		1008552	GASKET CONNECTOR TRAY	22
☒	–		1009552	WIRING DIAGRAM	REF
1	–		1008269	WIRE LIST A A	21
1	–		1015772	WIRING HARNESS A	20
1	–		1007091	BUFFER RESISTOR ASSY	19
2	2		1010620-5	PIN GUIDE	18
3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	17
1	1		1008099-2	WASHER	16
1	1		1008098	SCREW, SOCKET HEAD	15
1	1		1001317	RETAINER, JACK SCREW	14
52	~~52~~		1004206	WASHER, THRUST	13
26	~~26~~		MS171433	PIN, SPRING	12
26	~~26~~		1004207	DRIVE CYLINDER	11
26	~~26~~		1008172	SCREW, JACK	10
2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	9
2	2		MS 16995-11	SCREW, CAP, SOCKET HEAD	8
1	–		1010622-1	CONNECTOR, RECEPTACLE,	7
16	16		MS16556-604	PIN, GUIDE	6
84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
129	129		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
129	129		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
1	–		1008102	FRAME,	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007572		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN Deschler DATE 29SEP 64
CHECKED [illegible] 1OCT 64
APPROVAL [illegible] 2OCT 64
APPROVAL [illegible] 10-29-64
NASA APPROVAL W. J. [illegible] 11-4-64
MIT APPROVAL [illegible] 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

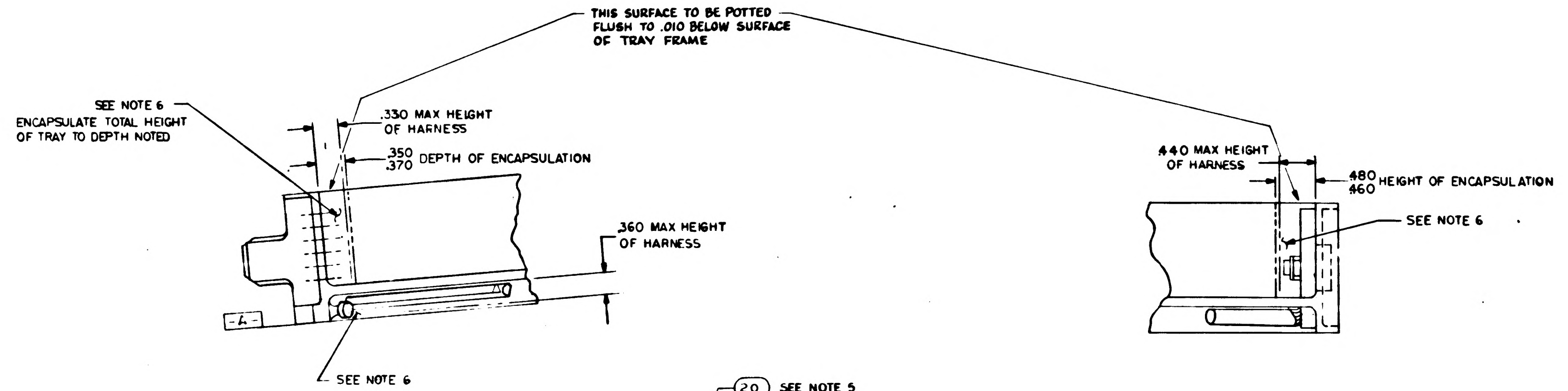
FRAME ASSEMBLY
TRAY 2

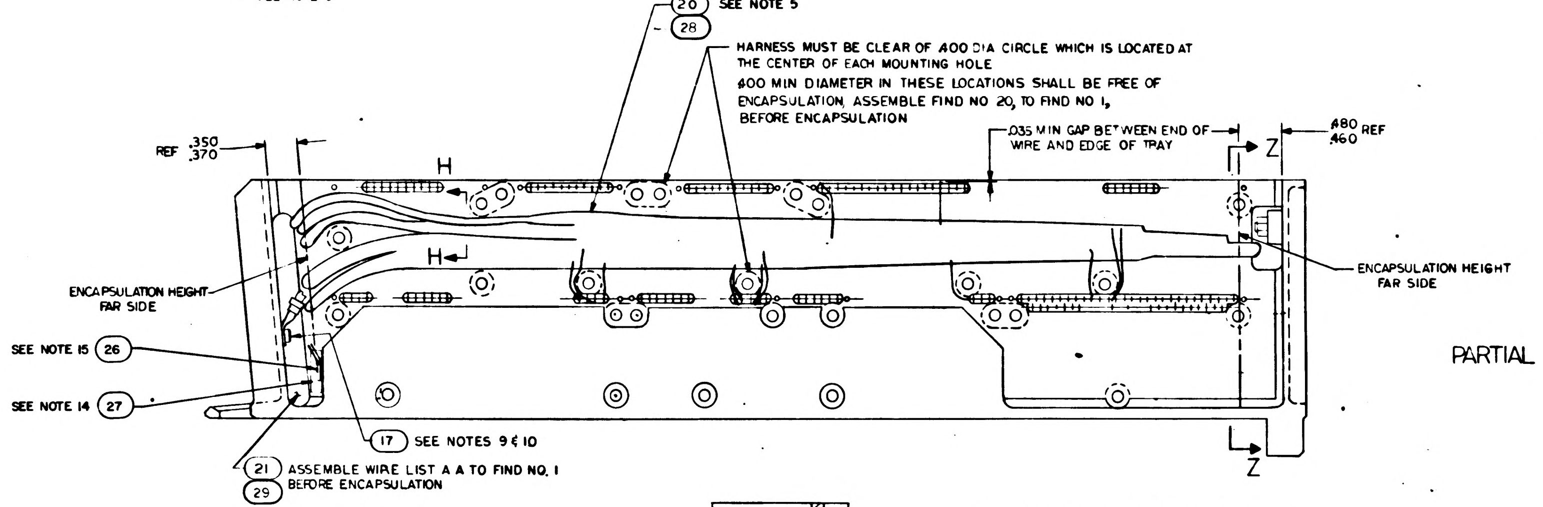
CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007532
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

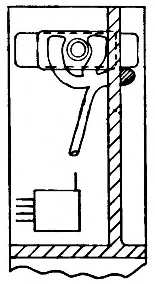
SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR 13737	11/4/64	WK
E	REVISED PER TDRR 15154	29 Dec 64	WK
F	REVISED PER TDRR 15238		
G	REVISED PER TDRR 15948	11 FEB 65	JK CW
H	REVISED PER TDRR 16267	15 FEB 65	JWP
J	REVISED PER TDRR 17613	24 MAR 65	RJJ WD
K	REVISED PER TDRR 18690	4 MAY 65	CF WD
L	REVISED PER TDRR 18691	5 MAY 65	JJJ EF


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 6
ENCAPSULATE TOTAL HEIGHT OF TRAY TO DEPTH NOTED
.330 MAX HEIGHT OF HARNESS
.350 .370 DEPTH OF ENCAPSULATION
.360 MAX HEIGHT OF HARNESS
-A-
SEE NOTE 6
.440 MAX HEIGHT OF HARNESS
.480 .460 HEIGHT OF ENCAPSULATION
SEE NOTE 6


20 SEE NOTE 5
28
HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION, ASSEMBLE FIND NO 20, TO FIND NO 1, BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.480 .460 REF
REF .350 .370
H
H
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
SEE NOTE 15 26
SEE NOTE 14 27
17 SEE NOTES 9 & 10
21 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
29

PARTIAL SECTION H-H

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



PARTIAL SECTION Z-Z

Ⓓ REPLACES WORD DRAWING REV C

1007532 L

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO Contract NAS 9-497
DRAWN Geschke DATE 29 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-29-64
NASA APPROVAL 11-4-64
MIT APPROVAL

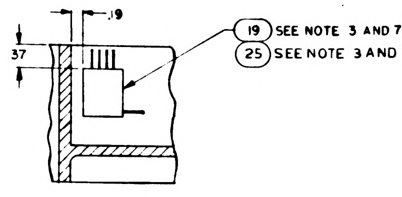
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 2

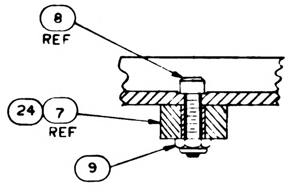
CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO 1007532
SCALE FULL
WT
SHEET 2 OF 2

NOTICE [illegible]

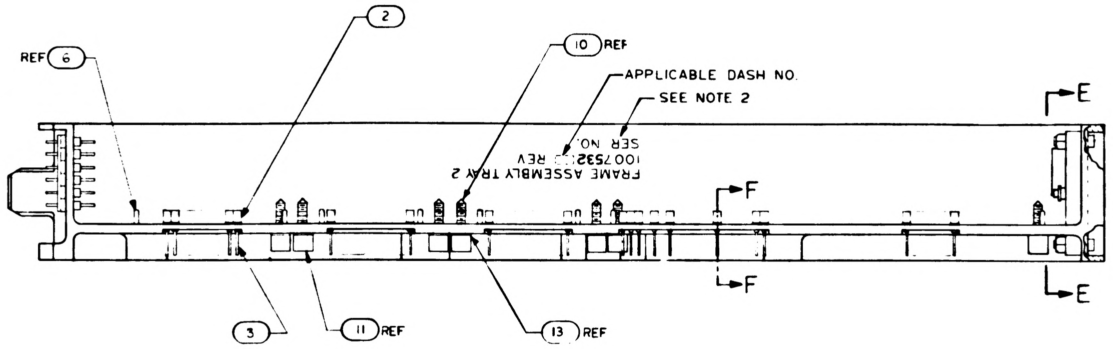
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
D		REPLACES WORD DWG REV C PER TDRR			
E		REVISED PER TDRR 15154			
F		REVISED PER TDRR 15238			
G		REVISED PER TDRR 15948		11 FEB 65	
H		REVISED PER TDRR 16267		5 FEB 65	WP
J		REVISED PER TDRR 17613		24 MAR 65	RJJ
K		REVISED PER TDRR 18690		4 MAY 65	EF
L		REVISED PER TDRR 18691		6 MAY 65	
M		REVISED PER TDRR 18695		11 MAY 65	A N.

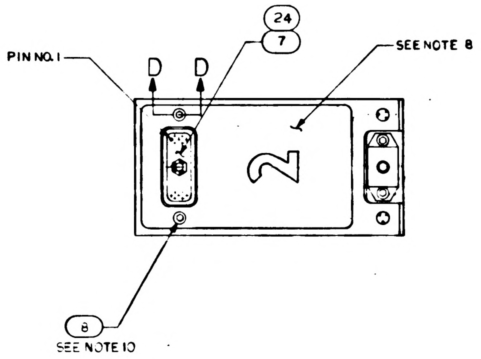


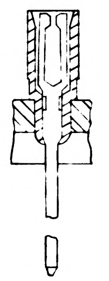
PARTIAL SECTION E-E



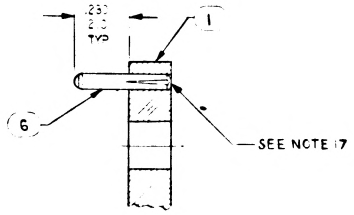
PARTIAL SECTION D-D
SCALE 2/1





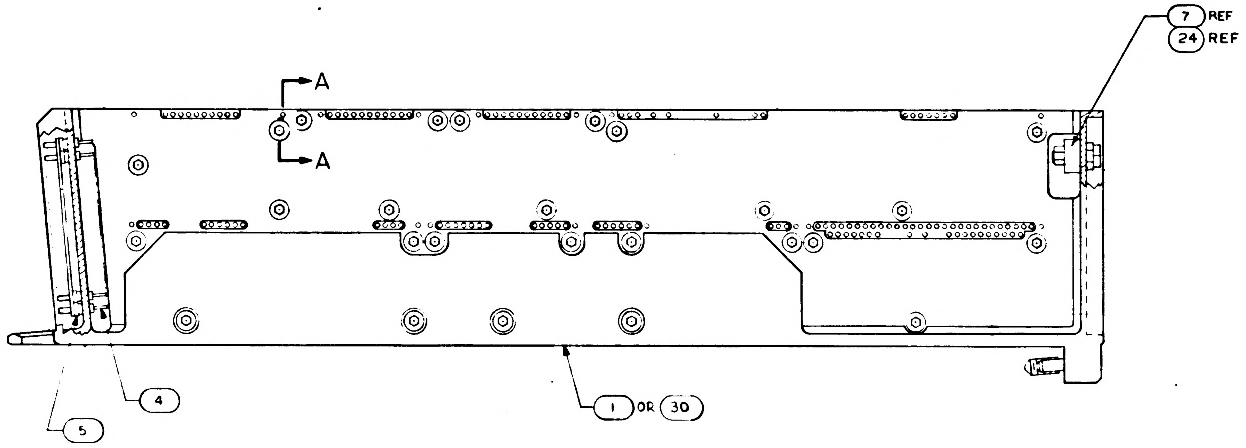


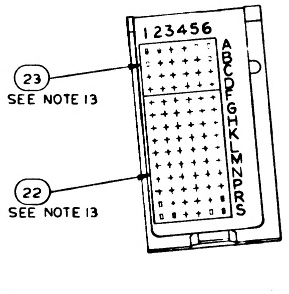
PARTIAL SECTION F-F
129 PLACES

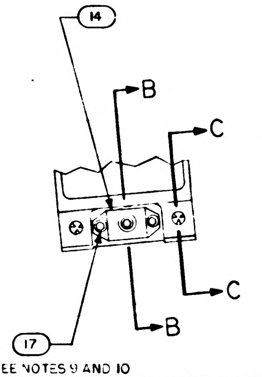


SECTION A-A
SCALE 4/1
-011 CONFIGURATION

Ⓓ REPLACES WORD DWG REV C

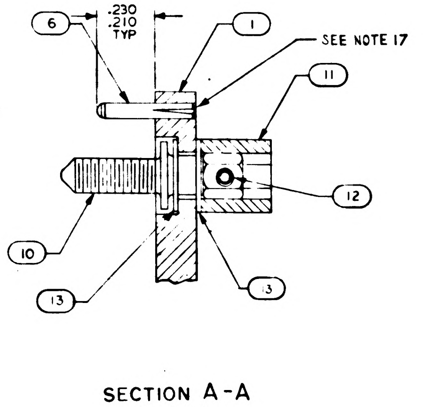




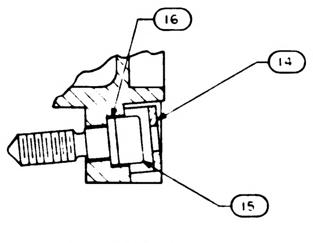


NOTES:

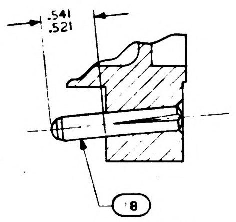
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MARK PER ND 1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023
3. BOND FIND NO. 19 AND 25 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
4. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND 1002136
5. BOND FIND NO. 20 AND 21 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19 AND 25.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 17 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NUMBERS 8 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS 1007142
13. BOND FIND NO. 22 AND 23 TO FIND NO. 5 PER ND 1002237
14. BOND FIND NO. 27 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND 1002187 OVER FIND NO. 27 AND THE ADJOINING AREA.
15. BOND FIND NO. 26 ONTO FIND NO. 27 AS PREPARED IN NOTE 14 PER ND 1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED)
16. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH OR WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.
17. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION), USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.



SECTION A-A
SCALE 4/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A2E10	45A2J1-13
45A2E11	45A2J1-12
45A2E12	45A2J1-3
45A2E13	45A2J1-18
45A2E14	45A2J1-2
45A2E15	45A2J1-11

LIST OF MATERIALS

		QUANTITY REQUIRED 021	QUANTITY REQUIRED 011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		–	1		1008522	FRAME	30
		–	1		1008628	WIRE LIST A	29
		–	1		1008627	WIRING HARNESS A	28
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	27
		1	1		1006712 3	RESISTOR, TEMPERATURE SENSITIVE	26
		–	1		007587-011	BUFFER RESISTOR ASSY	25
		–	X		009562	WIRING DIAGRAM	REF
		–	1		1010821-1	CONNECTOR, RECEPTACLE	24
		1	1		1008551	GASKET, CONNECTOR, TRAY	23
		1	1		1008552	GASKET CONNECTOR TRAY	22
		X	–		1009552	WIRING DIAGRAM	REF
		1	–		1008269	WIRE LIST A A	21
		1	–		015772	WIRING HARNESS A	20
		1	–		1007091	BUFFER RESISTOR ASSY	19
		2	2		1010620-5	PIN GUIDE	18
		3	3		MS 16995-0	SCREW, CAP, SOCKET HEAD	17
		1	1		1008099-2	WASHER	16
		1	1		1008098	SCREW SOCKET HEAD	15
		1	1		1001317	RETAINER, JACK SCREW	14
		52	~~52~~		1004206	WASHER, THRUST	13
		26	~~26~~		MS171433	PIN, SPRING	12
		26	~~26~~		1004207	DRIVE CYLINDER	11
		26	~~26~~		1008172	SCREW JACK	10
		2	2		MS 21045 C 04	NUT SELF-LOCKING HEX	9
		2	2		MS 16995-11	SCREW, CAP, SOCKET HEAD	8
		1	–		1010622-1	CONNECTOR, RECEPTACLE,	7
		16	16		MS16556-604	PIN, GUIDE	6
		84	84		1010383-1	INSULATOR, WRAPOST MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		129	129		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		129	129		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	–		1008102	FRAME	1

1007532 M

NEXT ASSY	USED ON	APPLICABLE DASH NO
1007572		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS · DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
DRAWN Deschke DATE 29 SEP 64
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

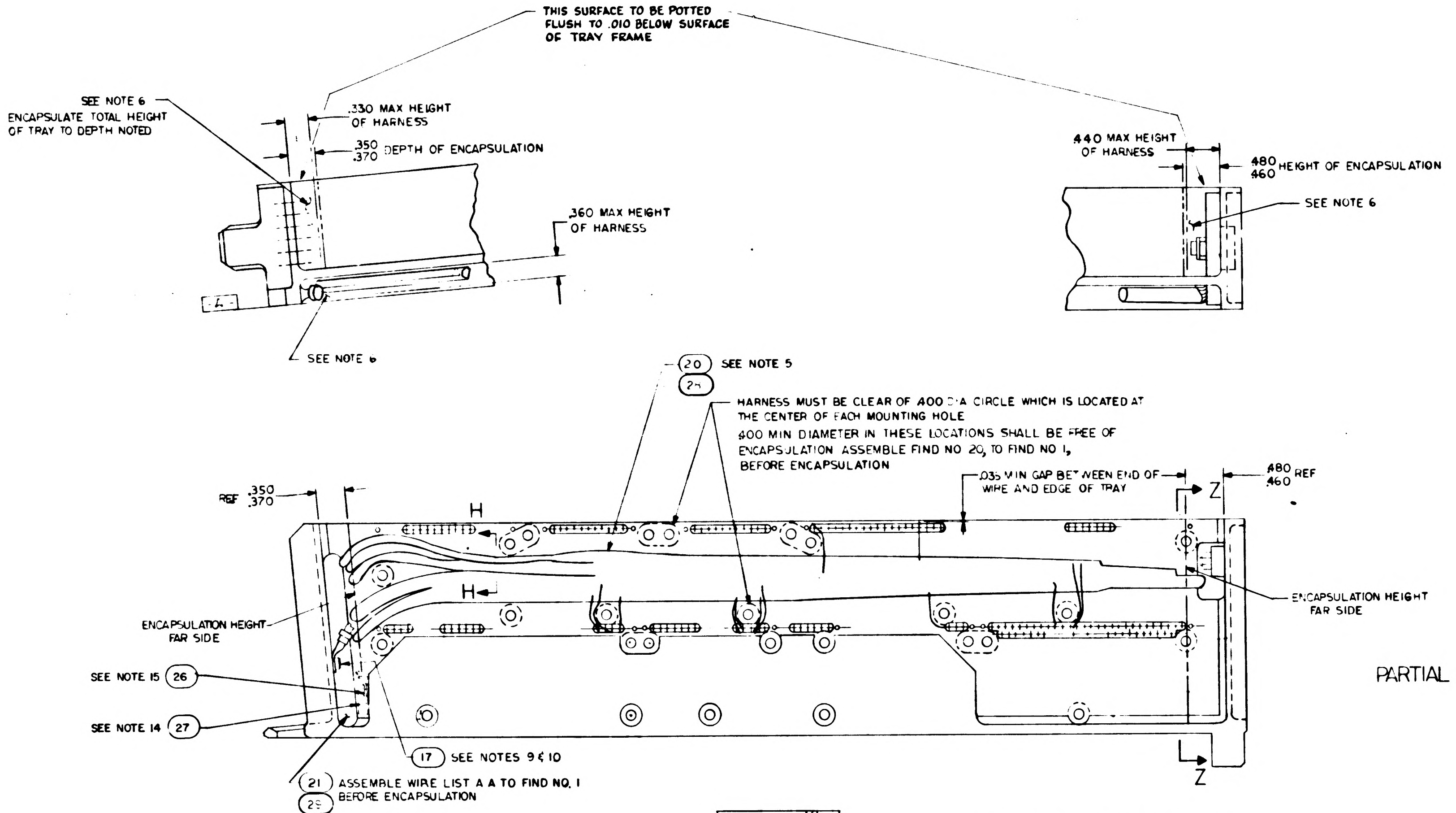
FRAME ASSEMBLY TRAY 2

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007532
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

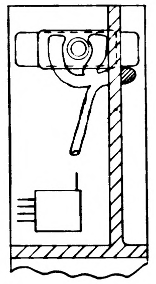
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR	[illegible]	W.K.
E	REVISED PER TDRR 15154	29 Dec 64	[illegible]
F	REVISED PER TDRR 15238		[illegible]
G	REVISED PER TDRR 15949	11 FEB 65	[illegible]
H	REVISED PER TDRR 16267	15 FEB 65	JWP
J	REVISED PER TDRR 17613	24 MAR 65	RJJ
K	REVISED PER TDRR 18690	4 MAY 65	CF
L	REVISED PER TDRR 18691	65	[illegible]
M	REVISED PER TDRR 18695	11 MAY 65	AN


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 6
ENCAPSULATE TOTAL HEIGHT OF TRAY TO DEPTH NOTED
.330 MAX HEIGHT OF HARNESS
.350 .370 DEPTH OF ENCAPSULATION
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6
.440 MAX HEIGHT OF HARNESS
.480 .460 HEIGHT OF ENCAPSULATION
SEE NOTE 6
20 SEE NOTE 5
28
HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION ASSEMBLE FIND NO 20, TO FIND NO 1, BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.480 .460 REF
REF .350 .370
H
H
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
SEE NOTE 15 26
SEE NOTE 14 27
17 SEE NOTES 9 & 10
21 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
29

PARTIAL SECTION H-H

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



PARTIAL SECTION Z-Z

Ⓓ REPLACES WORD DRAWING REV C

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
DRAWN Zeschke DATE 29 SEP 64
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

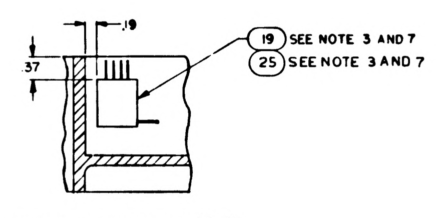
MANNED SPACECRAFT CENTER
HOUSTON TEXAS

FRAME ASSEMBLY
TRAY 2

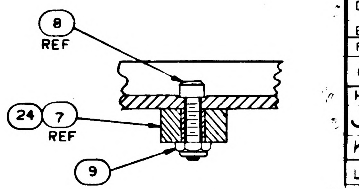
CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007532
SCALE FULL
WT
SHEET 2 OF 2

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

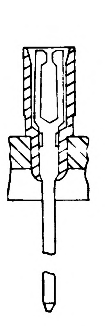
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
D		REPLACES WORD DWG REV C PER TDRR			
E		REVISED PER TDRR 15154		[illegible]	[illegible]
F		REVISED PER TDRR 15238			[illegible]
G		REVISED PER TDRR 15948		FEB 65	
H		REVISED PER TDRR16267		FEB 65	JP
J		REVISED PER TDRR 17613		2 MAR 65	RJJ
K		REVISED PER TDRR 18690		[illegible] 65	[illegible]
L		REVISED PER TDRR 18691		[illegible] 65	[illegible]
M		REVISED PER TDRR 18695		[illegible]	[illegible]
N		REVISED PER TDRR 20119		[illegible]	[illegible]



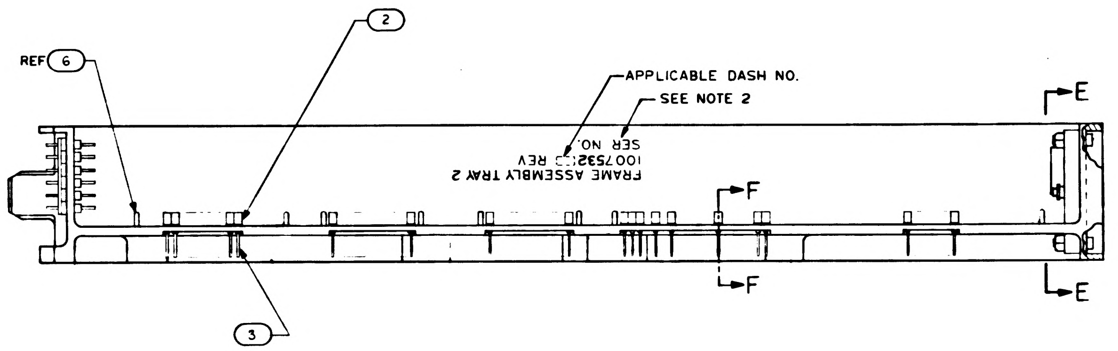
PARTIAL SECTION E-E

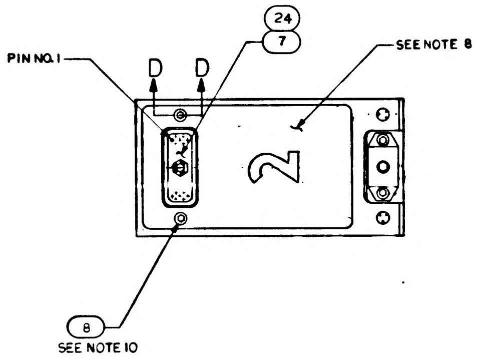


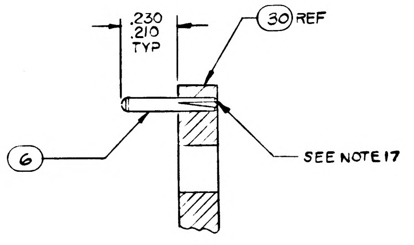
PARTIAL SECTION D-D
SCALE 2/1



PARTIAL SECTION F-F
129 PLACES

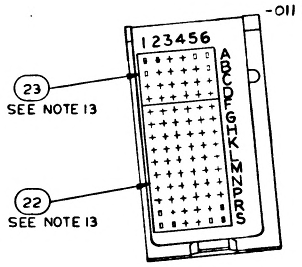


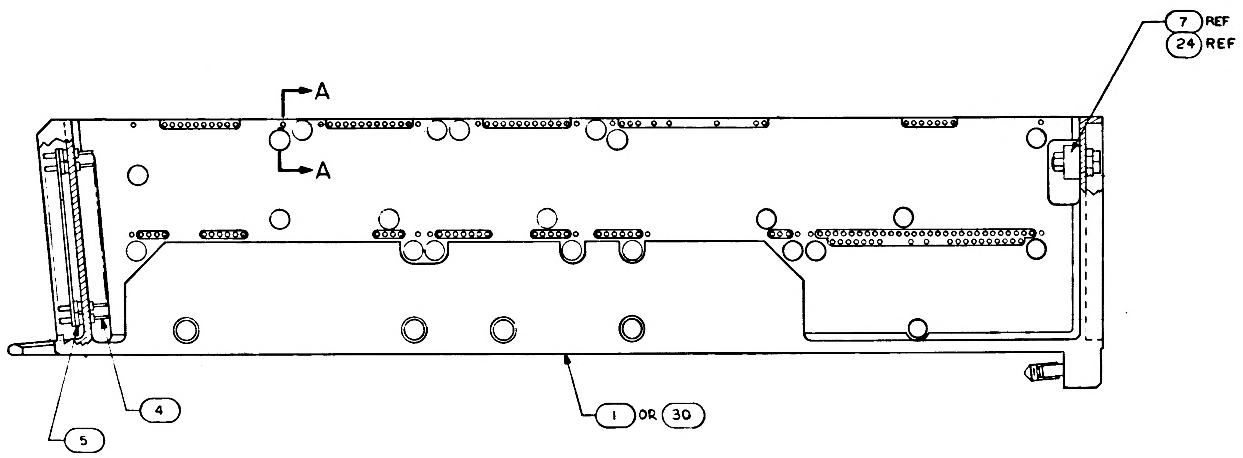


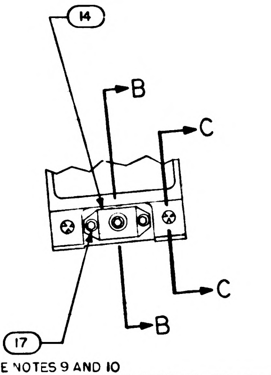


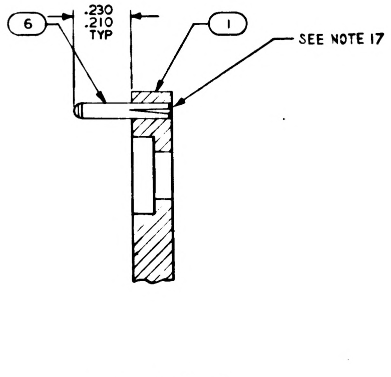
Ⓓ REPLACES WORD DWG REV C

SECTION A-A
SCALE 4:1
-011 CONFIGURATION

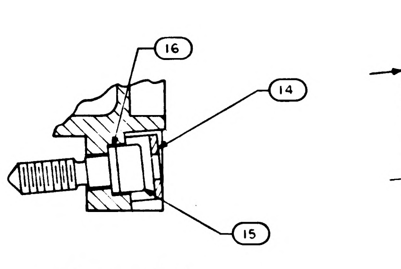




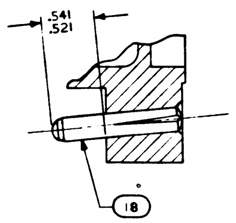




SECTION A-A
SCALE 4/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A2E10	45A2J1-13
45A2E11	45A2J1-12
45A2E12	45A2J1-3
45A2E13	45A2J1-18
45A2E14	45A2J1-2
45A2E15	45A2J1-11

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND1002023.
3. BOND FIND NO. 19 AND 25 TO FIND NO. 1 PER ND1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686.
4. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND1002136.
5. BOND FIND NO. 20 AND 21 TO FIND NO. 1 PER ND1002004 TYPE I AS NECESSARY.
6. ENCAPSULATE PER ND1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19 AND 25.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
9. COAT THREADS OF FIND NO. 17 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER).
10. MOUNTING TORQUE FOR FIND NUMBERS 8 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS1007142.
13. BOND FIND NO. 22 AND 23 TO FIND NO. 5 PER ND1002237.
14. BOND FIND NO. 27 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NO. 27 AND THE ADJOINING AREA.
15. BOND FIND NO. 26 ONTO FIND NO. 27 AS PREPARED IN NOTE 14 PER ND1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED).
16. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH OR WITHOUT WIRES) WITH ND1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND1002004 TYPE I.
17. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.

QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		021	011				
		–	1		1008522	FRAME	30
		–	1		1008628	WIRE LIST AA	29
		–	1		1008627	WIRING HARNESS A	28
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	27
		1	1		1006712-3	RESISTOR, TEMPERATURE SENSITIVE	26
		–	1		1007587-011	BUFFER RESISTOR ASSY	25
		–	╳		1009562	WIRING DIAGRAM	REF
		–	1		1010821-1	CONNECTOR, RECEPTACLE	24
		1	1		1008551	GASKET, CONNECTOR, TRAY	23
		1	1		1008552	GASKET CONNECTOR TRAY	22
		╳	–		1009552	WIRING DIAGRAM	REF
		1	–		1008269	WIRE LIST A A	21
		1	–		1015772	WIRING HARNESS A	20
		1	–		1007091	BUFFER RESISTOR ASSY	19
		2	2		1010620-5	PIN GUIDE	18
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	17
		1	1		1008099-2	WASHER	16
		1	1		1008098	SCREW, SOCKET HEAD	15
		1	1		1001317	RETAINER, JACK SCREW	14
		~~52~~	~~52~~		~~1004206~~	~~WASHER, THRUST~~	13
		~~26~~	~~26~~		~~MS171433~~	~~PIN, SPRING~~	12
		~~26~~	~~26~~		~~1004207~~	~~DRIVE CYLINDER~~	11
		~~26~~	~~26~~		~~1008172~~	~~SCREW, JACK~~	10
		2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	9
		2	2		MS 16995-11	SCREW, CAP, SOCKET HEAD	8
		1	–		1010622-1	CONNECTOR, RECEPTACLE,	7
		16	16		MS16556-604	PIN, GUIDE	6
		84	84		1010383-1	INSULATOR, WRAPOST MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		129	129		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		129	123		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	–		1008102	FRAME,	1

LIST OF MATERIALS

1007572		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN Deschke DATE 29 SEP 64
CHECKED [illegible] 7 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible] 10-29-64
NASA APPROVAL [illegible] 11-4-64
MIT APPROVAL [illegible] 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 2

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1007532
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR [illegible] 57	[illegible]	N/A
E	REVISED PER TDRR 15154	29 Dec '64	[illegible]
F	REVISED PER TDRR 15238		[illegible]
G	REVISED PER TDRR 15948	11 FEB 65	[illegible]
H	REVISED PER TDRR 16267	15 FEB 65	[illegible]
J	REVISED PER TDRR 17613	24 MAR 65	RJJ
K	REVISED PER TDRR 18690	4 MAY 65	[illegible]
L	REVISED PER TDRR [illegible]869[illegible]	5 MAY 65	[illegible]
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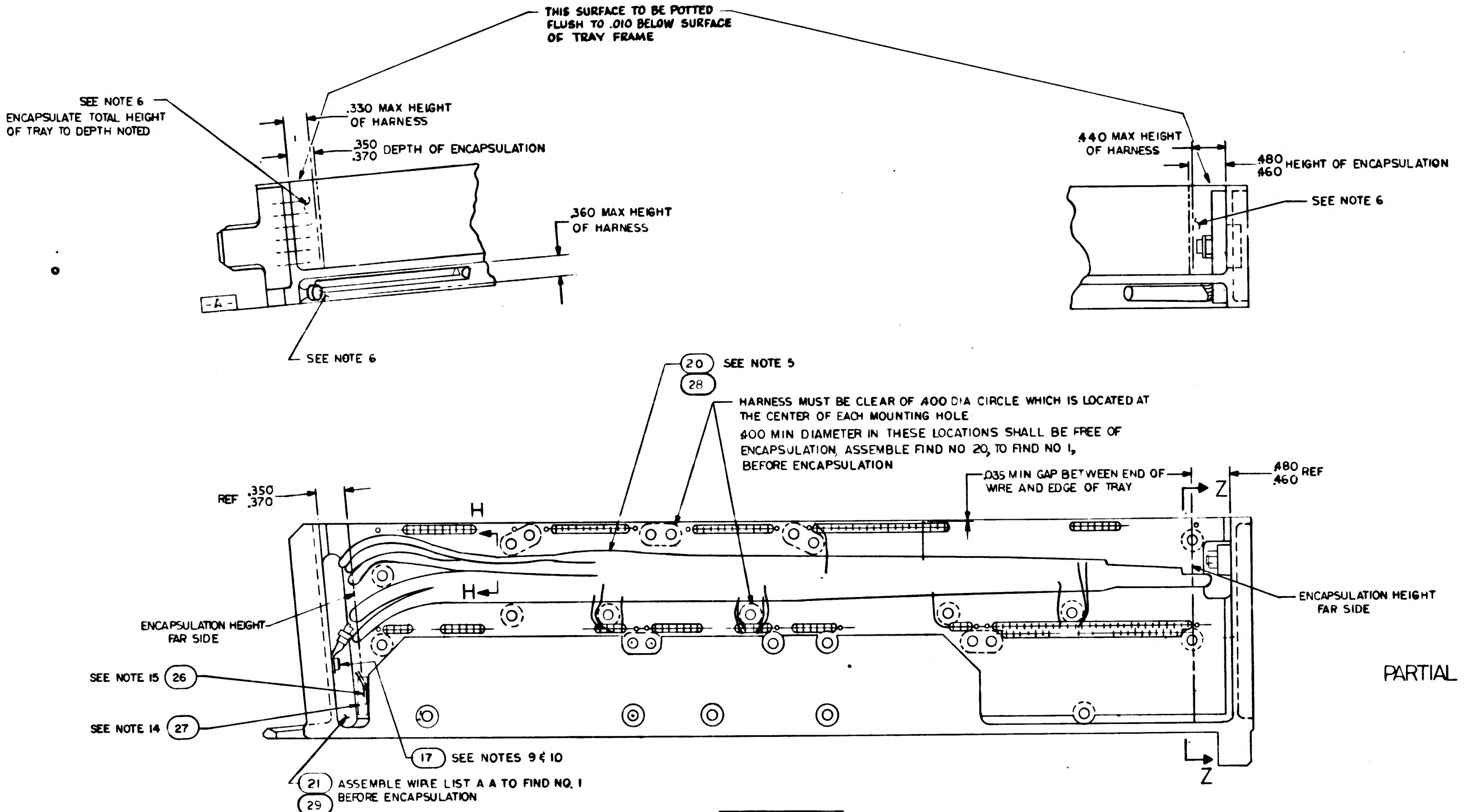
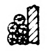
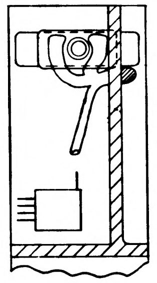
N	REVISION STATUS [illegible]ED	[illegible] 65	[illegible]


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 6
ENCAPSULATE TOTAL HEIGHT OF TRAY TO DEPTH NOTED
.330 MAX HEIGHT OF HARNESS
.350 .370 DEPTH OF ENCAPSULATION
.360 MAX HEIGHT OF HARNESS
-A-
SEE NOTE 6
.440 MAX HEIGHT OF HARNESS
.480 .460 HEIGHT OF ENCAPSULATION
SEE NOTE 6
20 SEE NOTE 5
28
HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION, ASSEMBLE FIND NO 20, TO FIND NO 1, BEFORE ENCAPSULATION
REF .350 .370
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.480 .460 REF
Z
H
H
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
SEE NOTE 15 26
SEE NOTE 14 27
17 SEE NOTES 9 & 10
21 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
29
Z



PARTIAL SECTION H-H



PARTIAL SECTION Z-Z

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11

Ⓓ REPLACES WORD DRAWING REV C

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO Contract NAS 9-497
DRAWN Geschke DATE 29 SEP 64
CHECKED [illegible] 7 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible] 10-26-64
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

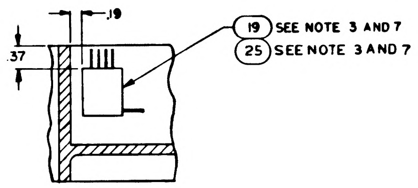
FRAME ASSEMBLY
TRAY 2

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO 1007532
SCALE FULL
WT
SHEET 2 OF 2

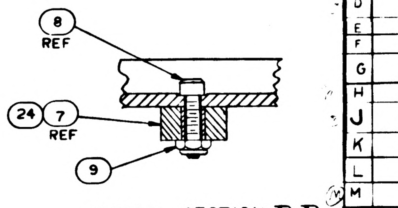
1007532 N

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

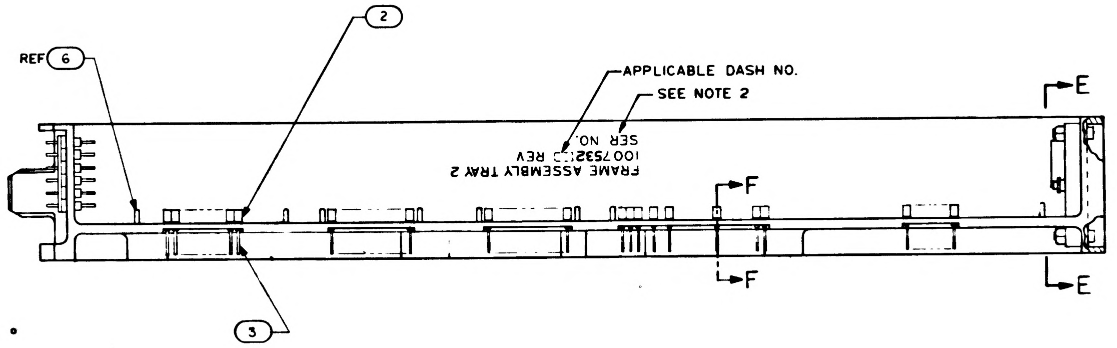
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
D		REPLACES WORD DWG REV C PER TDRR			[illegible]
E		REVISED PER TDRR 15154		[illegible]	[illegible]
F		REVISED PER TDRR 15238			[illegible]
G		REVISED PER TDRR 15948		FEB 65	[illegible]
H		REVISED PER TDRR 16267		FEB 65	[illegible]
J		REVISED PER TDRR 17613		MAR 65	RJJ
K		REVISED PER TDRR 18690		[illegible] 65	[illegible]
L		REVISED PER TDRR 18691		[illegible]	[illegible]
M		REVISED PER TDRR 18695		[illegible]	[illegible]
N		REVISED PER TDRR 20119		[illegible]	[illegible]
P		REVISION STATUS CHANGED		[illegible]	[illegible]

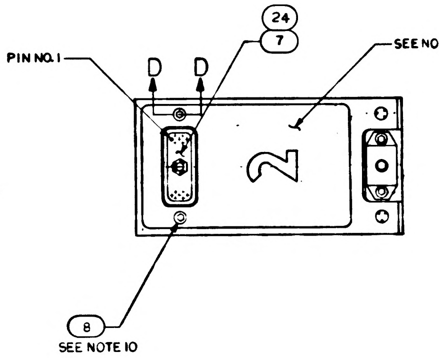


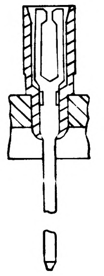
PARTIAL SECTION E-E



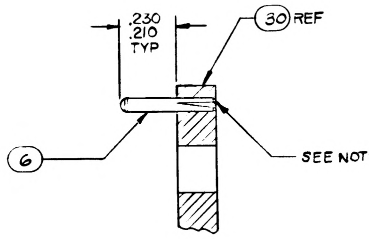
PARTIAL SECTION D-D
SCALE 2/1







PARTIAL SECTION F-F
129 PLACES



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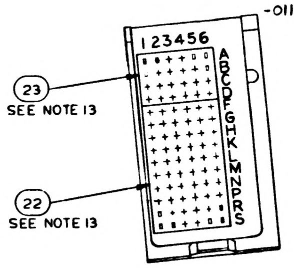
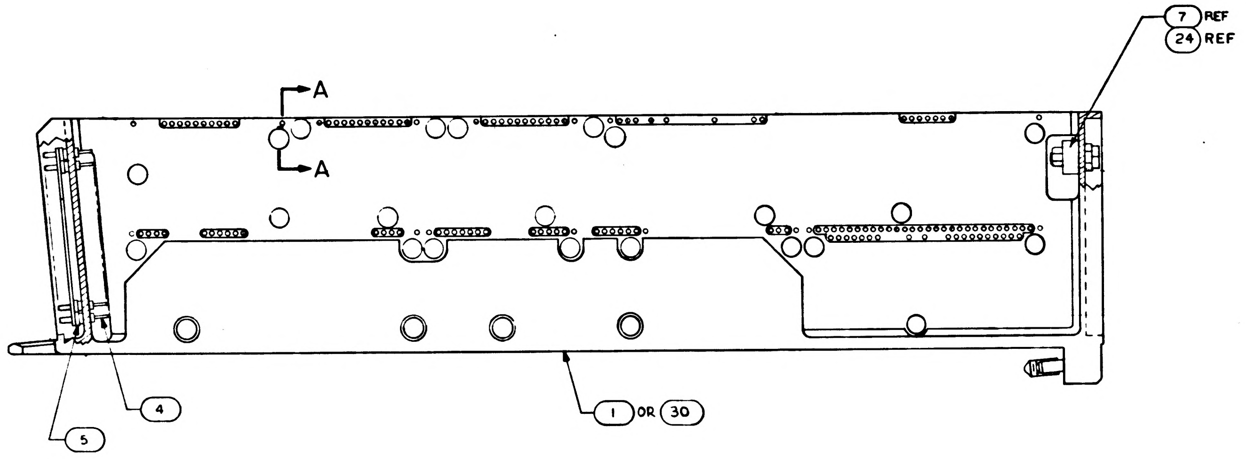
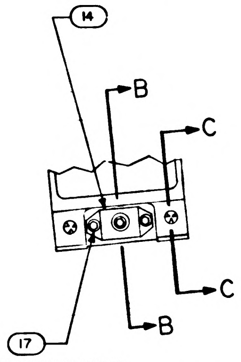


SECTION A-A
SCALE 4:1
-011 CONFIGURATION



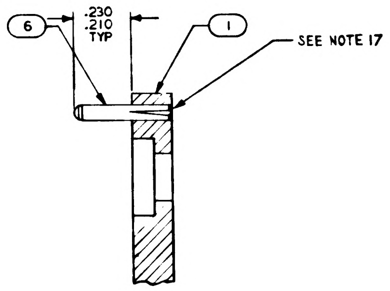


SEE NOTES 9 AND 10

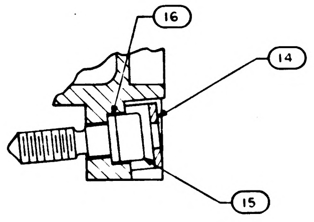
QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		021	011				
		–	1		1008522	FRAME	30
		–	1		1008628	WIRE LIST AA	29
		–	1		1008627	WIRING HARNESS A	28
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	27
		1	1		1006712-3	RESISTOR, TEMPERATURE SENSITIVE	26
		–	1		1007587-011	BUFFER RESISTOR ASSY	25
		–	✕		1009562	WIRING DIAGRAM	REF
		–	1		1010821-1	CONNECTOR, RECEPTACLE	24
		1	1		1008551	GASKET, CONNECTOR, TRAY	23
		1	1		1008552	GASKET CONNECTOR TRAY	22
		✕	–		1009552	WIRING DIAGRAM	REF
		1	–		1008269	WIRE LIST A A	21
		1	–		1015772	WIRING HARNESS A	20
		1	–		1007091	BUFFER RESISTOR ASSY	19
		2	2		1010620-5	PIN GUIDE	18
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	17
		1	1		1008099-2	WASHER	16
		1	1		1008098	SCREW, SOCKET HEAD	15
		1	1		1001317	RETAINER, JACK SCREW	14
		~~52~~	~~52~~		~~1004206~~	~~WASHER, THRUST~~	13
		~~26~~	~~26~~		~~MS171433~~	~~PIN, SPRING~~	12
		~~26~~	~~26~~		~~1004207~~	~~DRIVE CYLINDER~~	11
		~~26~~	~~26~~		~~1008172~~	~~SCREW, JACK~~	10
		2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	9
		2	2		MS 16995-11	SCREW, CAP, SOCKET HEAD	8
		1	–		1010622-1	CONNECTOR, RECEPTACLE,	7
		16	16		MS16556-604	PIN, GUIDE	6
		84	84		1010383-1	INSULATOR, WRAPOST MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		129	129		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		129	129		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	–		1008102	FRAME,	1

LIST OF MATERIALS

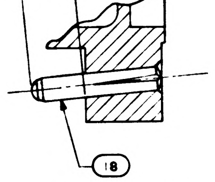
TERMINATION CHART	
FROM	TO
45A2E10	45A2J1-13
45A2E11	45A2J1-12
45A2E12	45A2J1-3
45A2E13	45A2J1-18
45A2E14	45A2J1-2
45A2E15	45A2J1-11



SECTION A-A
SCALE 4/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND1002023.
3. BOND FIND NO. 19 AND 25 TO FIND NO. 1 PER ND1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686.
4. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND1002136.
5. BOND FIND NO. 20 AND 21 TO FIND NO. 1 PER ND1002004 TYPE I AS NECESSARY.
6. ENCAPSULATE PER ND1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19 AND 25.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
9. COAT THREADS OF FIND NO. 17 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER).
10. MOUNTING TORQUE FOR FIND NUMBERS 8 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS1007142.
13. BOND FIND NO. 22 AND 23 TO FIND NO. 5 PER ND1002237.
14. BOND FIND NO. 27 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NO. 27 AND THE ADJOINING AREA.
15. BOND FIND NO. 26 ONTO FIND NO. 27 AS PREPARED IN NOTE 14 PER ND1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED).
16. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH OR WITHOUT WIRES) WITH ND1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND1002004 TYPE I.
17. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.

1007572		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN Deschke DATE 29 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-29-64
NASA APPROVAL 11-4-64
MIT APPROVAL 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 2

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO. 1007532
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR	[illegible]	[illegible]
E	REVISED PER TDRR 15154	[illegible]	[illegible]
F	REVISED PER TDRR 15238		[illegible]
G	REVISED PER TDRR 15948	[illegible]	[illegible]
H	REVISED PER TDRR 16267	[illegible]	[illegible]
J	REVISED PER TDRR 17613	24 MAR 65	RJJ
K	REVISED PER TDRR 18690	[illegible]	[illegible]
L	REVISED PER TDRR 8691	[illegible]	[illegible]
M	REVISED PER TDRR 18695	65	[illegible]
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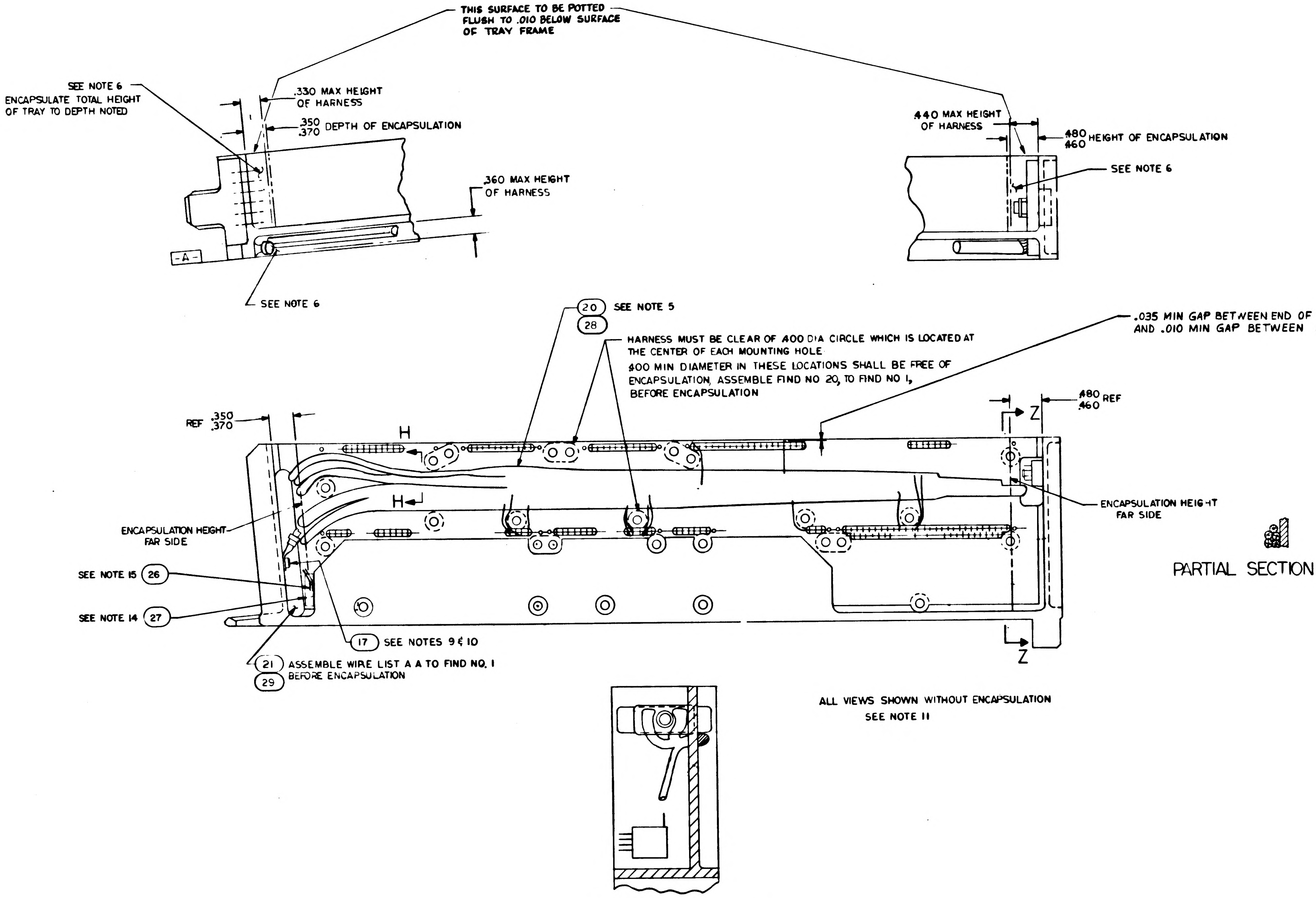
P	REVISED PER TDRR 23687	12 JUL 65	[illegible]


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 6
ENCAPSULATE TOTAL HEIGHT OF TRAY TO DEPTH NOTED
.330 MAX HEIGHT OF HARNESS
.350 .370 DEPTH OF ENCAPSULATION
.360 MAX HEIGHT OF HARNESS
-A-
SEE NOTE 6
.440 MAX HEIGHT OF HARNESS
.480 .460 HEIGHT OF ENCAPSULATION
SEE NOTE 6
20 28 SEE NOTE 5
HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO 20, TO FIND NO 1, BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WELDED WIRE AND EDGE OF TRAY AND .010 MIN GAP BETWEEN SOLDERED WIRE AND EDGE OF TRAY.
REF .350 .370
H
H
.480 .460 REF
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
SEE NOTE 15 26
SEE NOTE 14 27
17 SEE NOTES 9 & 10
21 29 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION

PARTIAL SECTION H-H

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11

PARTIAL SECTION Z-Z

Ⓓ REPLACES WORD DRAWING REV C

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
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DRAWN Geschke DATE 29 SEP 64
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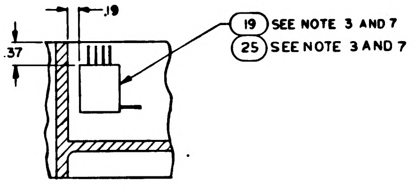
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible] 10-29-64
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

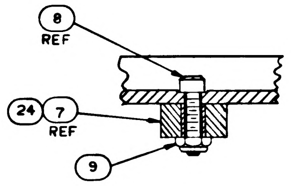
FRAME ASSEMBLY
TRAY 2

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO 1007532
SCALE FULL
WT
SHEET 2 OF 2

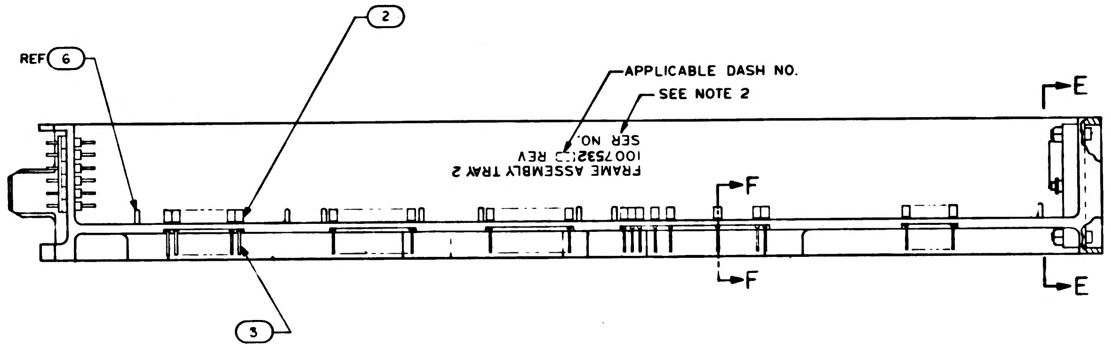
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
D		REPLACES WORD DWG REV C PER TDRR			
E		REVISED PER TDRR 15154			
F		REVISED PER TDRR 15238			
G		REVISED PER TDRR 15948		FEB 65	
H		REVISED PER TDRR 16267		65	JP
J		REVISED PER TDRR 17613		24 MAR 65	RJJ
K		REVISED PER TDRR 18690		65	
L		REVISED PER TDRR 18691		65	
M		REVISED PER TDRR 8695		65	
N		REVISED PER TDRR 20119			
P		REVISION STATUS CHANGED		5	
R		REVISED PER TDRR 20785		65	R

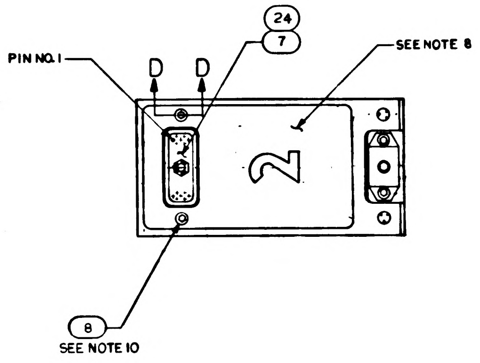


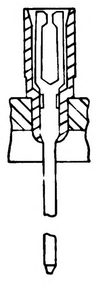
PARTIAL SECTION E-E



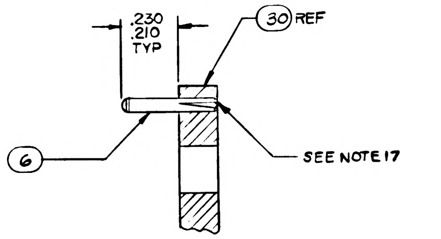
PARTIAL SECTION D-D
SCALE 2/1





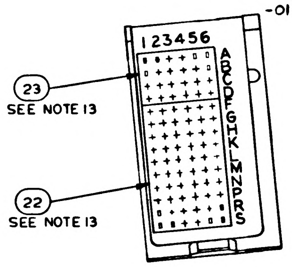


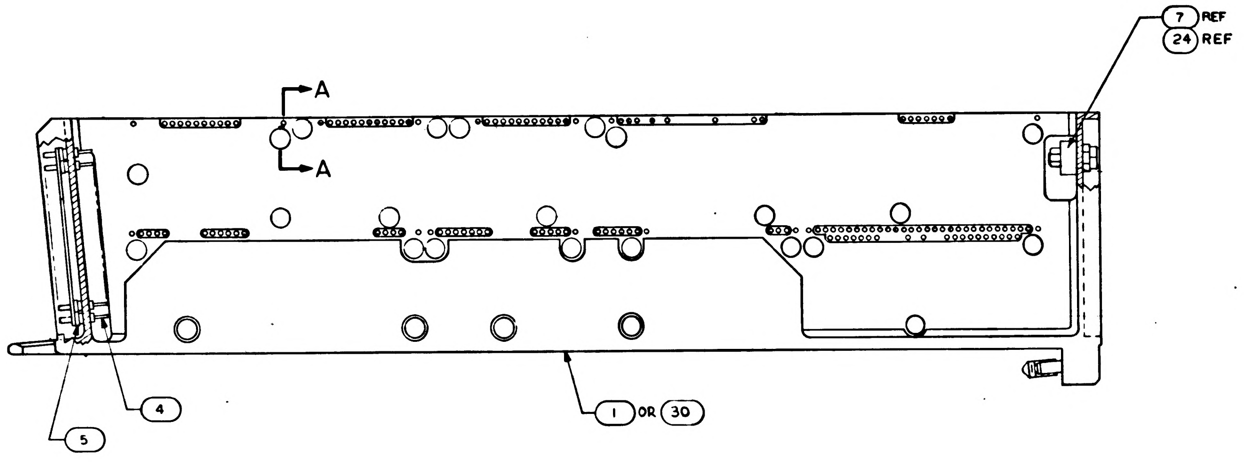
PARTIAL SECTION F-F
129 PLACES

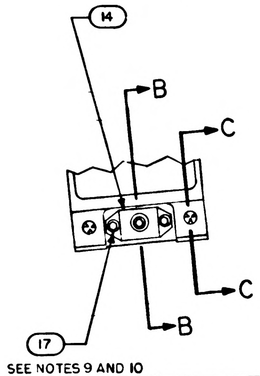


Ⓓ REPLACES WORD DWG REV C

SECTION A-A
SCALE 4:1
-011 CONFIGURATION



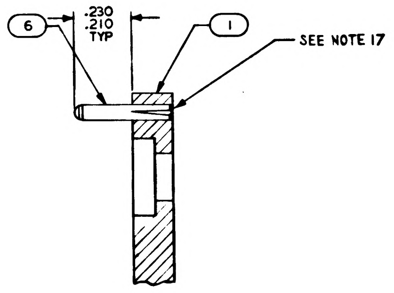




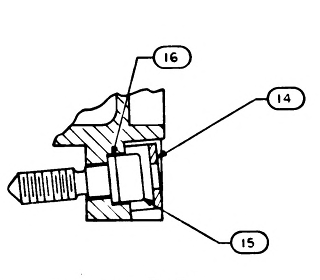
SEE NOTES 9 AND 10

		–	1		1008522	FRAME	30
		–	1		1008628	WIRE LIST AA	29
		–	1		1008627	WIRING HARNESS A	28
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	27
		1	1		1006712-3	RESISTOR, TEMPERATURE SENSITIVE	26
		–	1		1007587-011	BUFFER RESISTOR ASSY	25
		–	X		1009562	WIRING DIAGRAM	REF
		–	1		1010821-1	CONNECTOR, RECEPTACLE	24
		1	1		1008551	GASKET, CONNECTOR, TRAY	23
		1	1		1008552	GASKET CONNECTOR TRAY	22
		X	–		1009552	WIRING DIAGRAM	REF
		1	–		1008269	WIRE LIST A A	21
		1	–		1015772	WIRING HARNESS A	20
		1	–		1007091	BUFFER RESISTOR ASSY	19
		2	2		1010620-5	PIN GUIDE	18
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	17
		1	1		1008099-2	WASHER	16
		1	1		1008098	SCREW, SOCKET HEAD	15
		1	1		1001317	RETAINER, JACK SCREW	14
		~~52~~	~~52~~		~~1004206~~	~~WASHER, THRUST~~	13
		~~26~~	~~26~~		~~MS171433~~	~~PIN, SPRING~~	12
		~~26~~	~~26~~		~~1004207~~	~~DRIVE CYLINDER~~	11
		~~26~~	~~26~~		~~1008172~~	~~SCREW, JACK~~	10
		2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	9
		2	2		MS 16995-11	SCREW, CAP, SOCKET HEAD	8
		1	–		1010622-1	CONNECTOR, RECEPTACLE,	7
		16	16		MS16556-604	PIN, GUIDE	6
		84	84		1010383-1	INSULATOR, WRAPOST MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		129	129		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		129	129		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	–		1008102	FRAME,	1
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
QUANTITY REQUIRED					LIST OF MATERIALS		

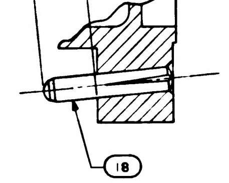
TERMINATION CHART	
FROM	TO
45A2E10	45A2J1-13
45A2E11	45A2J1-12
45A2E12	45A2J1-3
45A2E13	45A2J1-18
45A2E14	45A2J1-2
45A2E15	45A2J1-11



SECTION A-A
SCALE 4/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND1002023.
3. BOND FIND NO. 19 AND 25 TO FIND NO. 1 PER ND1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686.
4. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND1002136.
5. BOND FIND NO. 20 AND 21 TO FIND NO. 1 PER ND1002004 TYPE I AS NECESSARY.
6. ENCAPSULATE PER ND1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19 AND 25.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
9. COAT THREADS OF FIND NO. 17 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER).
10. MOUNTING TORQUE FOR FIND NUMBERS 8 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS1007142.
13. BOND FIND NO. 22 AND 23 TO FIND NO. 5 PER ND1002237.
14. BOND FIND NO. 27 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NO. 27 AND THE ADJOINING AREA.
15. BOND FIND NO. 26 ONTO FIND NO. 27 AS PREPARED IN NOTE 14 PER ND1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED).
~~16. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH OR WITHOUT WIRES) WITH ND1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND1002004 TYPE I.~~
16. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A FORMULATION CONSISTING OF 40 PARTS BY WT. 1010959-1, 100 PARTS BY WT. 1010959-2, AND 7 PARTS BY WT. 1006277 AND CURE AT ROOM TEMPERATURE FOR THREE HOURS OR ONE HOUR AT 140°F. LIMITED AMOUNT ALLOWED TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004, TYPE I.
17. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND 1002004, POTTING SIDE ONLY.

1007572		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
Contract NAS 9-497
DRAWN Deschke DATE 29 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-29-64
NASA APPROVAL 11-4-64
MIT APPROVAL 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

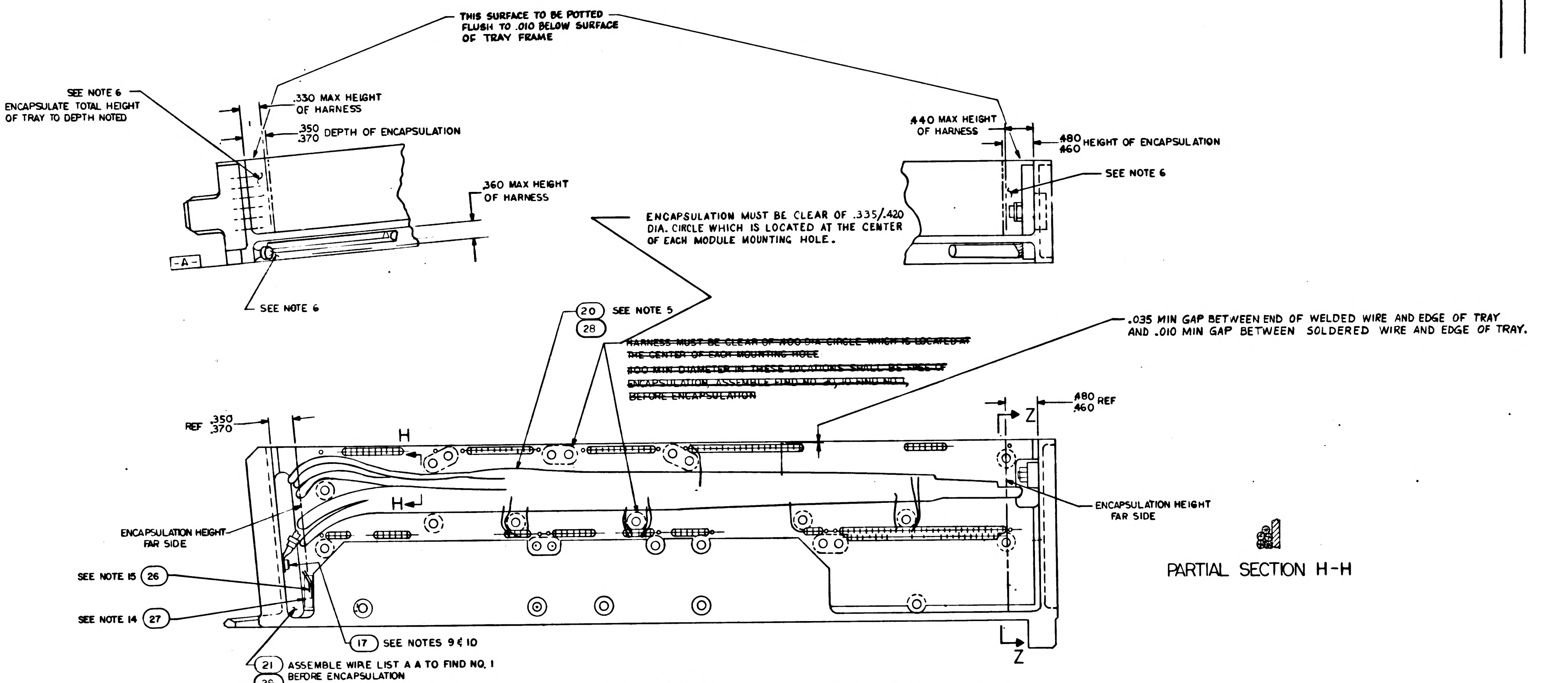
FRAME ASSEMBLY
TRAY 2

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO. 1007532
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

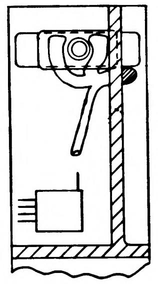
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR		WK
E	REVISED PER TDRR 15154	23 Dec 64	
F	REVISED PER TDRR 15238		
G	REVISED PER TDRR 15948	11 FEB 65	
H	REVISED PER TDRR 162[illegible]7	15 FEB 65	
J	REVISED PER TDRR 17613	24 MAR 65	RJJ
K	REVISED PER TDRR 186[illegible]	4 MAY 65	
L	REVISED PER TDRR [illegible]86[illegible]	5 MAY 65	
M	REVISED PER TDRR [illegible]93	11 MAY 65	
N	REVISION STATUS [illegible]	3 JUN 65	
P	REVISED PER TDRR [illegible]7	12 JUL 65	
R	REVISED PER TDRR [illegible]5	20 JLY 65	


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 6 ENCAPSULATE TOTAL HEIGHT OF TRAY TO DEPTH NOTED
.330 MAX HEIGHT OF HARNESS
.350 .370 DEPTH OF ENCAPSULATION
.360 MAX HEIGHT OF HARNESS
-A-
SEE NOTE 6
.440 MAX HEIGHT OF HARNESS
.480 .460 HEIGHT OF ENCAPSULATION
SEE NOTE 6
ENCAPSULATION MUST BE CLEAR OF .335/.420 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
20 SEE NOTE 5
28
~~HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MOUNTING HOLE~~
~~.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO. 20, 10 FIND NO. 1 BEFORE ENCAPSULATION~~
.035 MIN GAP BETWEEN END OF WELDED WIRE AND EDGE OF TRAY AND .010 MIN GAP BETWEEN SOLDERED WIRE AND EDGE OF TRAY.
REF .350 .370
.480 .460 REF
Z
Z
H
H
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
SEE NOTE 15 26
SEE NOTE 14 27
17 SEE NOTES 9 & 10
21 ASSEMBLE WIRE LIST A A TO FIND NO. 1
29 BEFORE ENCAPSULATION

PARTIAL SECTION H-H

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



PARTIAL SECTION Z-Z

Ⓓ REPLACES WORD DRAWING REV C

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

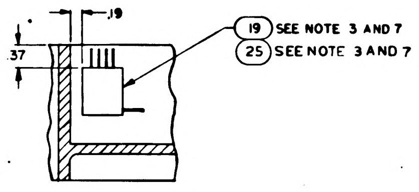
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO Contract NAS 9-497
DRAWN Geschke DATE 29 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL 11-24-64
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

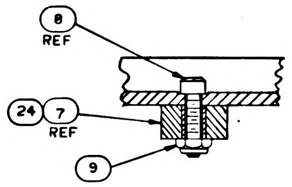
FRAME ASSEMBLY
TRAY 2

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO 1007532
SCALE FULL
WT
SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.



PARTIAL SECTION E-E



PARTIAL SECTION D-D
SCALE 2/1

REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
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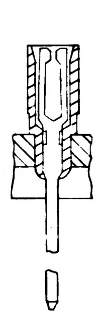
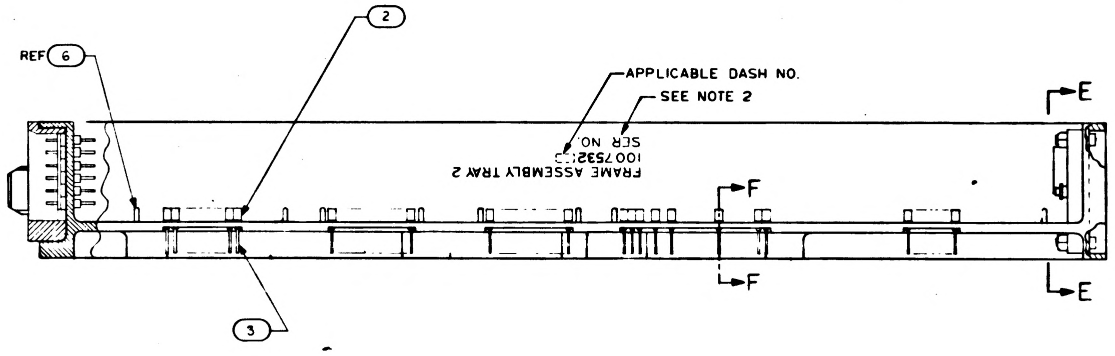
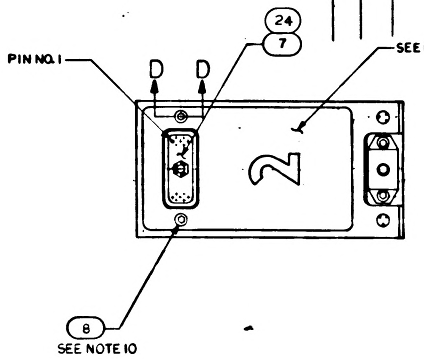
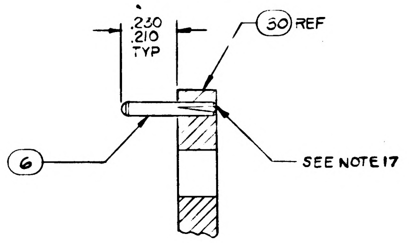
E		REVISED PER TDRR 15154			
F		REVISED PER TDRR 15238			
G		REVISED PER TDRR 15948		11 FEB 65	JK
H		REVISED PER TDRR 16267		15 FEB 65	JWP
J		REVISED PER TDRR 17613		24 MAR 65	RJJ
K		REVISED PER TDRR 18690		4 MAY 65	EF
L		REVISED PER TDRR 18691		6 MAY 65	JJJ EF
M		REVISED PER TDRR 18695		11 MAY 65	A.N.
N		REVISED PER TDRR 20119		19 JUN 65	DAS
P		REVISION STATUS CHANGED		12 JUL 65	RLP
R		REVISED PER TDRR 20785		20 JUL 65	WJR RWH
S		REVISED PER TDRR 26401		24 FEB 66	JMP



PARTIAL SECTION F-F
129 PLACES

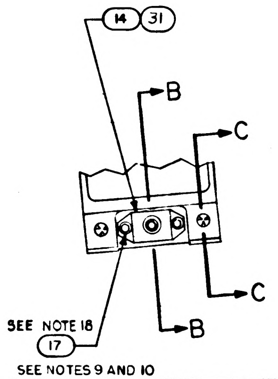




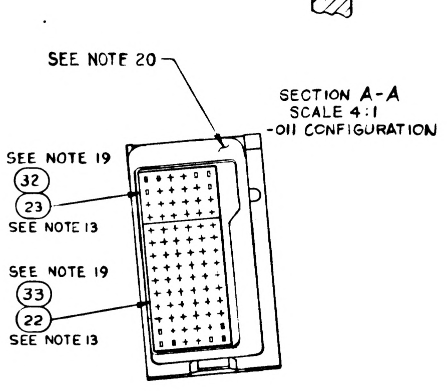


							36
	AR				SEE NOTE 21	MOISTURE-PROOFING	35
	1				1008335	GASKET, WASP	34
	1				1008338	GASKET, CONNECTOR TRAY	33
	1				1008337	GASKET, CONNECTOR TRAY	32
	1				1008333	RETAINER, JACK SCREW	31

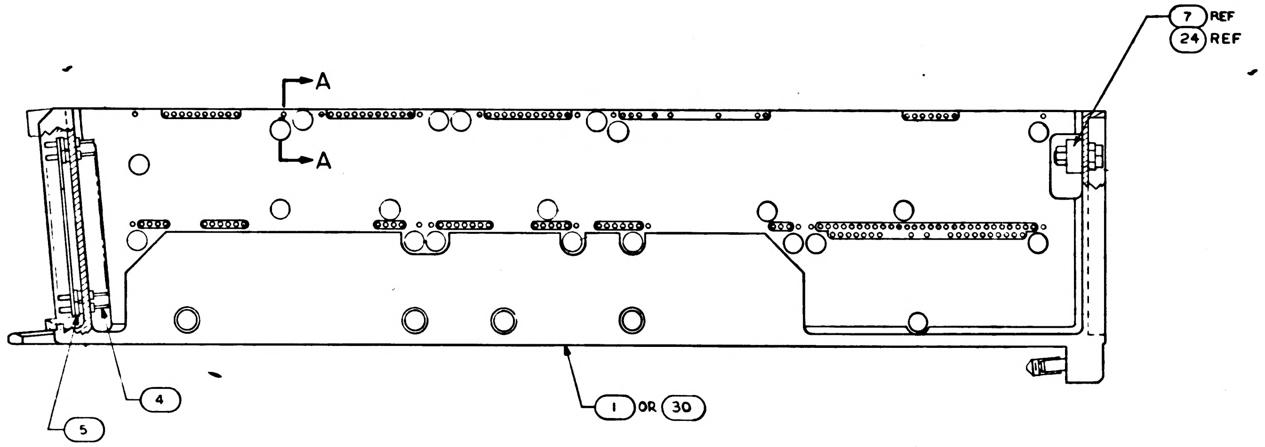
Ⓓ REPLACES WORD DWG REV C



SEE NOTES 9 AND 10



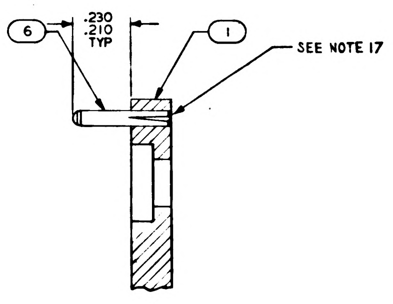
SECTION A-A
SCALE 4:1
-011 CONFIGURATION



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND1002023.
3. BOND FIND NO. 19 AND 25 TO FIND NO. 1 PER ND1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686.
4. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND1002136.
5. BOND FIND NO. 20 AND 21 TO FIND NO. 1 PER ND1002004 TYPE I AS NECESSARY.
6. ENCAPSULATE PER ND1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19 AND 25.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
9. COAT THREADS OF FIND NO. 17 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER).
10. MOUNTING TORQUE FOR FIND NUMBERS 8 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS1007142.
13. BOND FIND NO. 22 AND 23 TO FIND NO. 5 PER ND1002237.
14. BOND FIND NO. 27 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NO. 27 AND THE ADJOINING AREA.
15. BOND FIND NO. 26 ONTO FIND NO. 27 AS PREPARED IN NOTE 14 PER ND1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED).

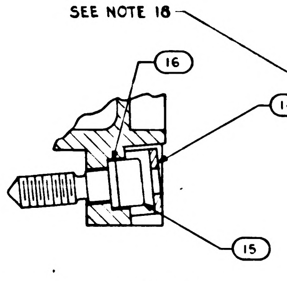
~~16. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH OR WITHOUT WIRES) WITH ND1002309 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND1002004 TYPE I.~~



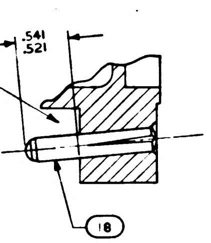
SECTION A-A
SCALE 4/1

16. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A FORMULATION CONSISTING OF 40 PARTS BY WT. 1010959-1, 100 PARTS BY WT. 1010959-2, AND 7 PARTS BY WT. 1006277 AND CURE AT ROOM TEMPERATURE FOR THREE HOURS OR ONE HOUR AT 140°F. LIMITED AMOUNT ALLOWED TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004, TYPE I.
17. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.
18. FILL CAVITY PER ND1002009, METHOD J.

(CONTINUED ON SHEET 2)



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A2E10	45A2J1-13
45A2E11	45A2J1-12
45A2E12	45A2J1-3
45A2E13	45A2J1-18
45A2E14	45A2J1-2
45A2E15	45A2J1-11

	031	021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
	1	–	1		1008522	FRAME	30
	1	–	1		1008628	WIRE LIST AA	29
	1	–	1		1008627	WIRING HARNESS A	28
	AR	AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	27
	1	1	1		1006712-3	RESISTOR, TEMPERATURE SENSITIVE	26
	1	–	1		1007587-011	BUFFER RESISTOR ASSY	25
	X	–	X		1009562	WIRING DIAGRAM	REF
	1	–	1		1010821-1	CONNECTOR, RECEPTACLE	24
	–	1	1		1008551	GASKET, CONNECTOR, TRAY	23
	–	1	1		1008552	GASKET CONNECTOR TRAY	22
	–	X	–		1009552	WIRING DIAGRAM	REF
	–	1	–		1008269	WIRE LIST A A	21
	–	1	–		1015772	WIRING HARNESS A	20
	–	1	–		1007091	BUFFER RESISTOR ASSY	19
	2	2	2		1010620-5	PIN GUIDE	18
	3	3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	17
	1	1	1		1008099-2	WASHER	16
	1	1	1		1008098	SCREW, SOCKET HEAD	15
	–	1	1		1001317	RETAINER, JACK SCREW	14
		~~52~~	~~52~~		~~1004206~~	~~WASHER, THRUST~~	13
		~~26~~	~~26~~		~~MS171433~~	~~PIN, SPRING~~	12
		~~26~~	~~26~~		~~1004207~~	~~DRIVE CYLINDER~~	11
		~~26~~	~~26~~		~~1008172~~	~~SCREW, JACK~~	10
	2	2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	9
	2	2	2		MS 16995-11	SCREW, CAP, SOCKET HEAD	8
	–	1	–		1010622-1	CONNECTOR, RECEPTACLE,	7
	16	16	16		MS16556-604	PIN, GUIDE	6
	84	84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
	84	84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
	129	129	129		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
	129	129	129		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
	–	1	–		1008102	FRAME,	1

QUANTITY REQUIRED — LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007572		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ±
DECIMALS ±.02
ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
Cambridge Mass
Contract NAS 9-497
DRAWN Deschler DATE 29 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-29-64
NASA APPROVAL 11-4-64
MIT APPROVAL 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

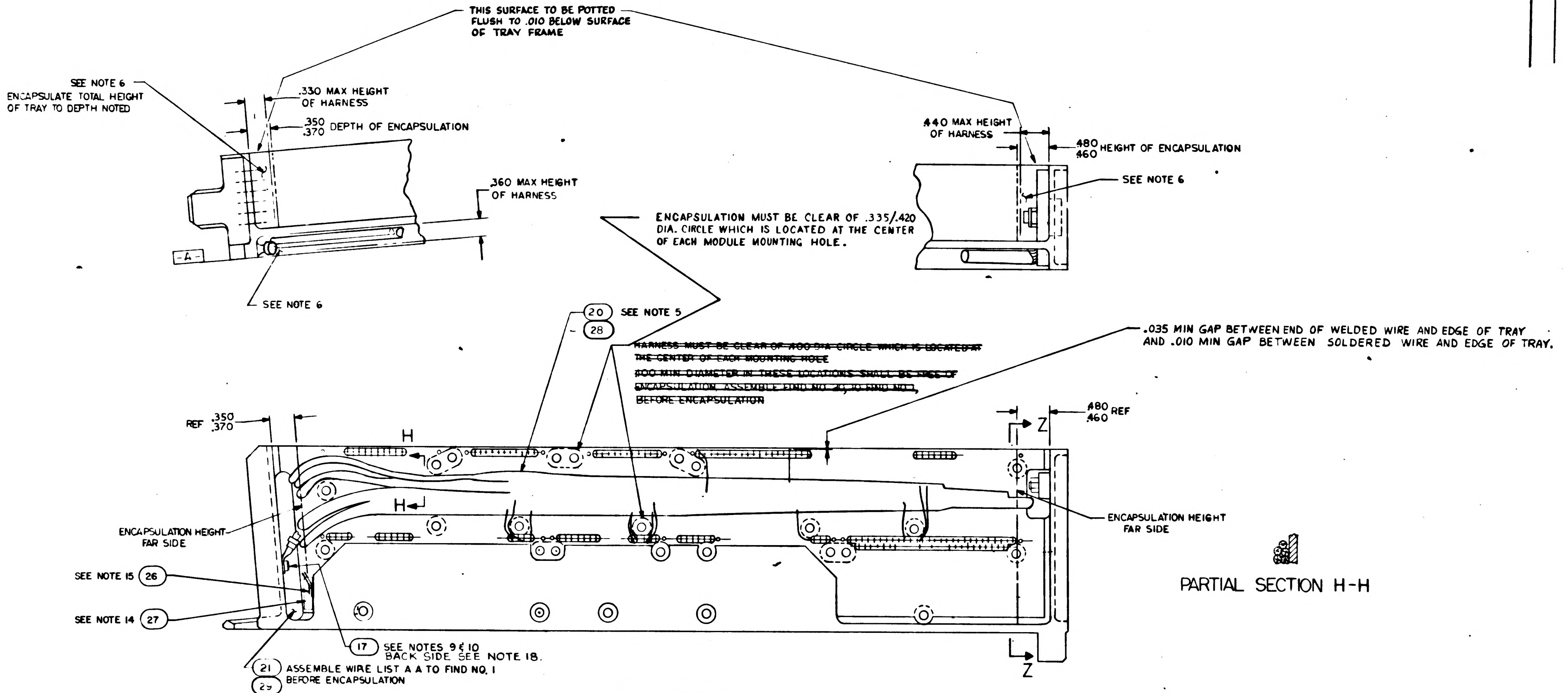
FRAME-ASSEMBLY TRAY 2

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO. 1007532
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

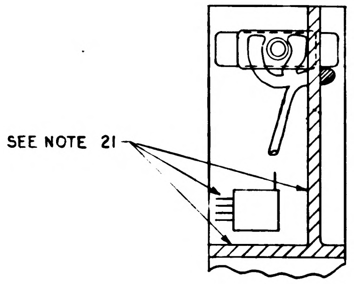
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR 12759	[illegible]	WK
E	REVISED PER TDRR 15154	29 Dec 64	[illegible]
F	REVISED PER TDRR 15238		[illegible]
G	REVISED PER TDRR 15348	11 FEB 65	CW
H	REVISED PER TDRR 16267	15 FEB 65	JNP
J	REVISED PER TDRR 17613	24 MAR 65	RJJ WD
K	REVISED PER TDRR 18690	4 MAY 65	CF WD
L	REVISED PER TDRR 18691	5 MAY 65	JJJ EF
M	REVISED PER TDRR 18695	11 MAY 65	AN
N	REVISION STATUS CHANGED	19 JUN 65	DAS NVM
P	REVISED PER TDRR 20687	12 JUL 65	RLP
R	REVISED PER TDRR 20785	20 JULY 65	WJR RWH
S	REVISED PER TDRR 26401	24 FEB 66	JIMP W.D.


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 6
ENCAPSULATE TOTAL HEIGHT OF TRAY TO DEPTH NOTED
.330 MAX HEIGHT OF HARNESS
.350 .370 DEPTH OF ENCAPSULATION
.360 MAX HEIGHT OF HARNESS
-A-
SEE NOTE 6
.440 MAX HEIGHT OF HARNESS
.480 .460 HEIGHT OF ENCAPSULATION
SEE NOTE 6
ENCAPSULATION MUST BE CLEAR OF .335/.420 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
20 SEE NOTE 5
28
~~HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MOUNTING HOLE~~
~~.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO. 20 TO FIND NO. 1 BEFORE ENCAPSULATION~~
.035 MIN GAP BETWEEN END OF WELDED WIRE AND EDGE OF TRAY AND .010 MIN GAP BETWEEN SOLDERED WIRE AND EDGE OF TRAY.
REF .350 .370
H
H
Z
Z
.480 .460 REF
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
SEE NOTE 15 26
SEE NOTE 14 27
17 SEE NOTES 9 & 10 BACK SIDE SEE NOTE 18.
21 ASSEMBLE WIRE LIST A A TO FIND NO. 1
29 BEFORE ENCAPSULATION

PARTIAL SECTION H-H

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



PARTIAL SECTION Z-Z

NOTES: (CONTINUED FROM SHEET 1)

19. APPLY A BEAD OF SILICONE GREASE MIL-S-8660 BETWEEN
OF MALE MALCO PINS IN BOTH DIRECTIONS, BETWEEN THE ROWS
THE GASKETS AND THE TRAY FRAME AND AROUND THE
PERIMETER OF THE GASKETS ON THE MALCO CONNECTOR.
NOMINAL BEAD DIAMETER SHALL BE 1/8 INCH.
20. BOND FIND NO. 34 TO FIND NO. 41 PER ND1002151, USING ADHESIVE PER MIL-A-25457.
21. PAINT THE MODULE MOUNTING SURFACE AND THE SURFACE PERPENDICULAR TO THE MODULE MOUNTING SURFACE PER ND1002292, USING MIL-C-15328, WASHER PRIMER FOLLOWED BY MIL-P-8585 ZINC CHROMATE PRIMER, FOLLOWED BY 1012543-003 PAINT. MODULE GUIDE PINS, CONNECTOR FEMALE PINS AND INSULATORS TO BE FREE OF PAINT. SEE FIND NO. 35.

Ⓓ REPLACES WORD DRAWING REV C

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

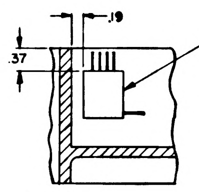
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN Zeschke DATE 29 SEP 64
CHECKED [illegible] Oct 64
APPROVAL [illegible] Oct 64
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

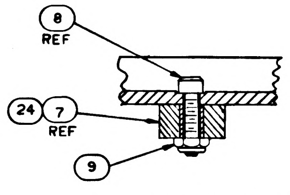
FRAME ASSEMBLY
TRAY 2

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007532
SCALE FULL
WT
SHEET 2 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.



PARTIAL SECTION E-E



PARTIAL SECTION D-D
SCALE 2/1

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
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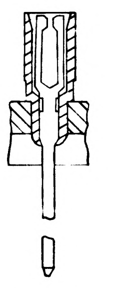
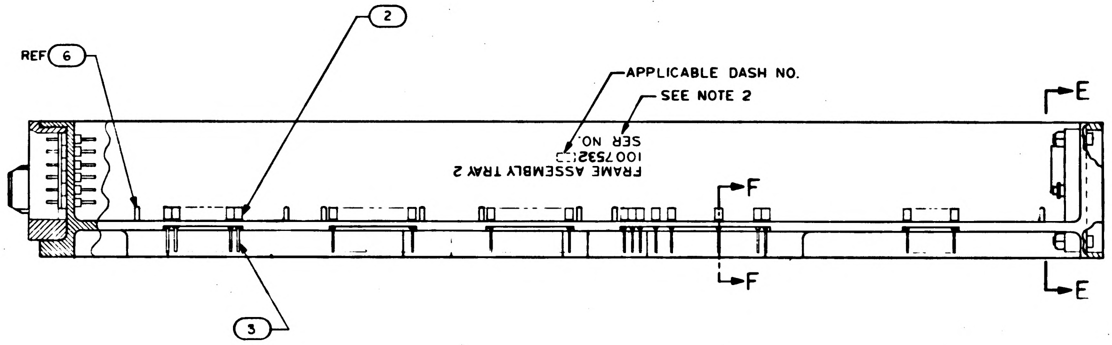
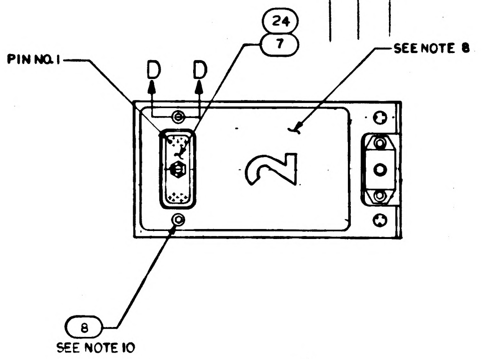
E		REVISED PER TDRR 15154			
F		REVISED PER TDRR 15238			
G		REVISED PER TDRR 15948		FEB 65	
H		REVISED PER TDRR 16267		FEB 65	JP
J		REVISED PER TDRR 17613		24 MAR 65	RJJ
K		REVISED PER TDRR 18690		65	EF
L		REVISED PER TDRR 18691		65	JJ
M		REVISED PER TDRR 18695			
N		REVISED PER TDRR 20119			
P		REVISION STATUS CHANGED			
R		REVISED PER TDRR 20785		65	RU
S		REVISED PER TDRR 26401			
T		REVISED PER TDRR 26380			RU



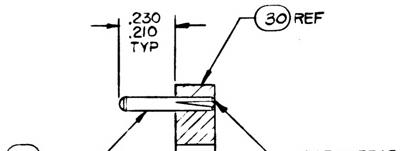
PARTIAL SECTION F-F
129 PLACES

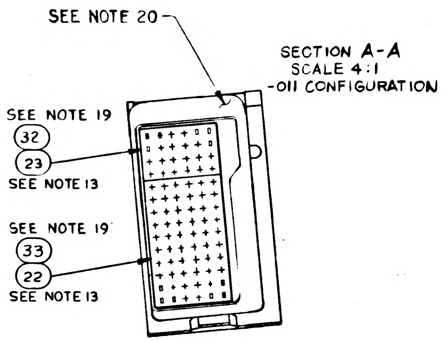


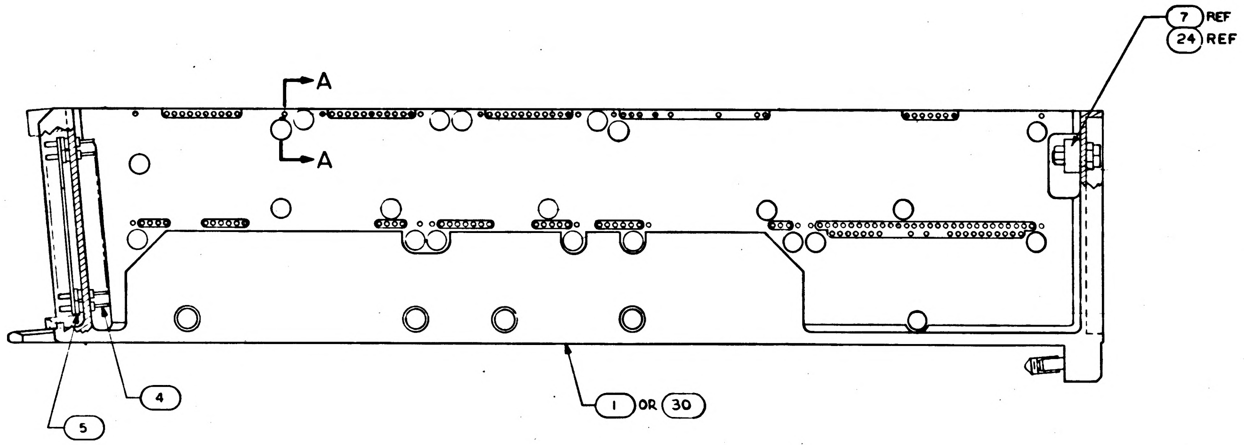


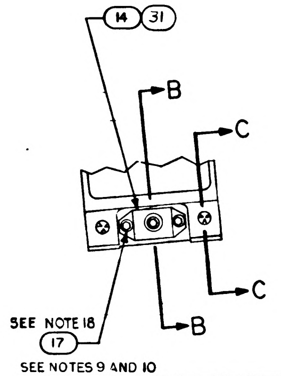
							36
AR	AR				SEE NOTE 21	MOISTURE-PROOFING	35
1	1				1008335	GASKET, WASP	34
1	1				1008338	GASKET, CONNECTOR TRAY	33
1	1				1008337	GASKET, CONNECTOR TRAY	32
1	1				1008333	RETAINER, JACK SCREW	31

Ⓓ REPLACES WORD DWG REV C



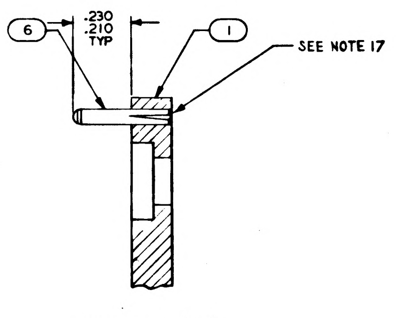






NOTES:

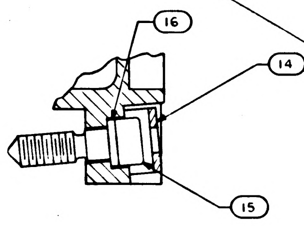
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND1002023.
3. BOND FIND NO. 19 AND 25 TO FIND NO. 1 PER ND1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686.
4. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND1002136.
5. BOND FIND NO. 20 AND 21 TO FIND NO. 1 PER ND1002004 TYPE I AS NECESSARY.
6. ENCAPSULATE PER ND1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 19 AND 25.
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
9. COAT THREADS OF FIND NO. 17 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER).
10. MOUNTING TORQUE FOR FIND NUMBERS 8 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. PROCURE PER PS1007142.
13. BOND FIND NO. 22 AND 23 TO FIND NO. 5 PER ND1002237.
14. BOND FIND NO. 27 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NO. 27 AND THE ADJOINING AREA.
15. BOND FIND NO. 26 ONTO FIND NO. 27 AS PREPARED IN NOTE 14 PER ND1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED).
~~16. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH OR WITHOUT WIRES) WITH ND1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND1002004 TYPE I.~~



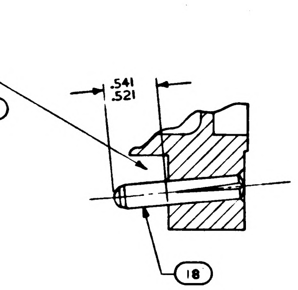
SECTION A-A
SCALE 4/1

16. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A FORMULATION CONSISTING OF 40 PARTS BY WT. 1010959-1, 100 PARTS BY WT. 1010959-2, AND 7 PARTS BY WT. 1006277 AND CURE AT ROOM TEMPERATURE FOR THREE HOURS OR ONE HOUR AT 140°F. LIMITED AMOUNT ALLOWED TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004, TYPE I.
17. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND 1002004, POTTING SIDE ONLY.
18. FILL CAVITY PER ND1002009, METHOD J.

(CONTINUED ON SHEET 2)



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A2E10	45A2J1-13
45A2E11	45A2J1-12
45A2E12	45A2J1-3
45A2E13	45A2J1-18
45A2E14	45A2J1-2
45A2E15	45A2J1-11

SEE NOTES 9 AND 10

041	031	021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
–	1	–	1		1008522	FRAME	30
–	1	–	1		1008628	WIRE LIST AA	29
–	1	–	1		1008627	WIRING HARNESS A	28
AR	AR	AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	27
1	1	1	1		1006712-3	RESISTOR, TEMPERATURE SENSITIVE	26
–	1	–	1		1007587-011	BUFFER RESISTOR ASSY	25
–	☒	–	☒		1009562	WIRING DIAGRAM	REF
–	1	–	1		1010821-1	CONNECTOR, RECEPTACLE	24
–	–	1	1		1008551	GASKET, CONNECTOR, TRAY	23
–	–	1	1		1008552	GASKET CONNECTOR TRAY	22
☒	–	☒	–		1009552	WIRING DIAGRAM	REF
1	–	1	–		1008269	WIRE LIST A A	21
1	–	1	–		1015772	WIRING HARNESS A	20
1	–	1	–		1007091	BUFFER RESISTOR ASSY	19
2	2	2	2		1010620-5	PIN GUIDE	18
3	3	3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	17
1	1	1	1		1008099-2	WASHER	16
1	1	1	1		1008098	SCREW, SOCKET HEAD	15
–	–	1	1		1001317	RETAINER, JACK SCREW	14
		~~52~~	~~52~~		~~1004206~~	~~WASHER, THRUST~~	13
		~~26~~	~~26~~		~~MS171433~~	~~PIN, SPRING~~	12
		~~26~~	~~26~~		~~1004207~~	~~DRIVE CYLINDER~~	11
		~~26~~	~~26~~		~~1008172~~	~~SCREW JACK~~	10
2	2	2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	9
2	2	2	2		MS 16995-11	SCREW, CAP, SOCKET HEAD	8
1	–	1	–		1010622-1	CONNECTOR, RECEPTACLE,	7
16	16	16	16		MS16556-604	PIN, GUIDE	6
84	84	84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
84	84	84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
129	129	129	129		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
129	129	129	129		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
1	–	1	–		1008102	FRAME,	1
QUANTITY REQUIRED					LIST OF MATERIALS		

1007572		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN Deschke DATE 29 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY TRAY 2

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO. 1007532
SCALE 1/1
WT
SHEET 1 OF 2

1007532 T

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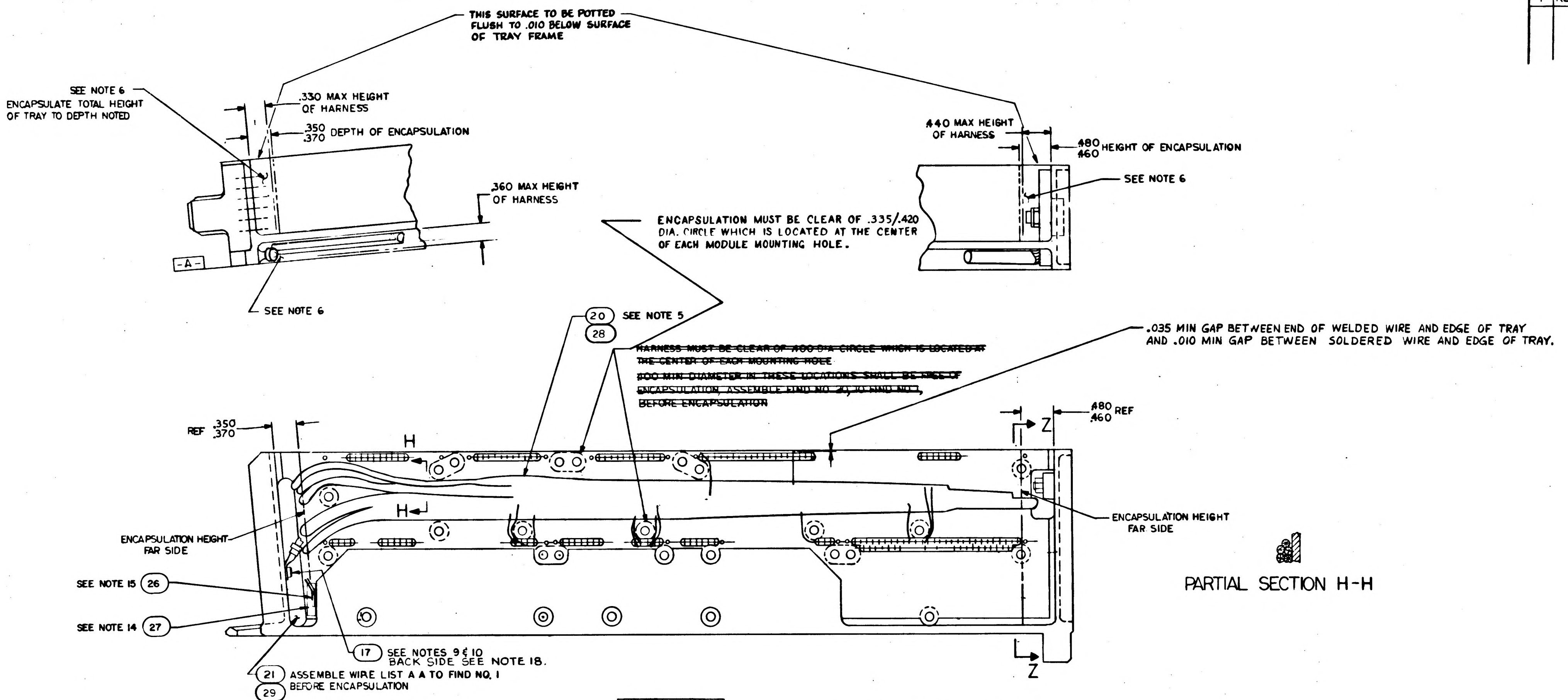
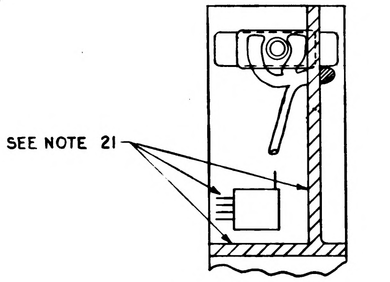
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES WORD DWG REV C PER TDRR [illegible]	[illegible]	WK
E	REVISED PER TDRR 15154	29 Dec 64	[illegible]
F	REVISED PER TDRR 15238		[illegible]
G	REVISED PER TDRR 15948	11 FEB 65	[illegible]
H	REVISED PER TDRR 16267	15 FEB 65	[illegible]
J	REVISED PER TDRR 17613	24 MAR 65	RJJ
K	REVISED PER TDRR 1869C	4 MAY 65	[illegible]
L	REVISED PER TDRR 18691	5 MAY 65	[illegible]
M	REVISED PER TDRR 18[illegible]95	11 MAY 65	[illegible]
N	REVISION STATUS CHANGED	[illegible] JUN 65	[illegible]
P	REVISED PER TDRR 2[illegible]687	[illegible] JUL 65	[illegible]
R	REVISED PER TDRR 2[illegible]95	2 JULY 65	[illegible]
S	REVISED PER TDRR 2[illegible]01	24 FEB [illegible]	[illegible]
T	REVISED PER TDRR 26[illegible]0	23 FEB [illegible]	[illegible]


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 6
ENCAPSULATE TOTAL HEIGHT OF TRAY TO DEPTH NOTED
.330 MAX HEIGHT OF HARNESS
.350 .370 DEPTH OF ENCAPSULATION
.360 MAX HEIGHT OF HARNESS
-A-
SEE NOTE 6
.440 MAX HEIGHT OF HARNESS
.480 .460 HEIGHT OF ENCAPSULATION
SEE NOTE 6
ENCAPSULATION MUST BE CLEAR OF .335/.420 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
20
28
SEE NOTE 5
~~HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MOUNTING HOLE~~
~~.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO. 20, 10 FIND NO. 1, BEFORE ENCAPSULATION~~
.035 MIN GAP BETWEEN END OF WELDED WIRE AND EDGE OF TRAY AND .010 MIN GAP BETWEEN SOLDERED WIRE AND EDGE OF TRAY.
REF .350 .370
.480 .460 REF
H
H
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
SEE NOTE 15 26
SEE NOTE 14 27
17 SEE NOTES 9 & 10 BACK SIDE SEE NOTE 18.
21 ASSEMBLE WIRE LIST A A TO FIND NO. 1
29 BEFORE ENCAPSULATION
PARTIAL SECTION H-H

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



PARTIAL SECTION Z-Z

NOTES: (CONTINUED FROM SHEET 1)

19. APPLY A BEAD OF SILICONE GREASE MIL-S-8660 BETWEEN THE ROWS OF MALE MALCO PINS IN BOTH DIRECTIONS, BETWEEN THE GASKETS AND THE TRAY FRAME AND AROUND THE PERIMETER OF THE GASKETS ON THE MALCO CONNECTOR. NOMINAL BEAD DIAMETER SHALL BE 1/8 INCH.
20. BOND FIND NO. 34 TO FIND NO. 1 OR 30 PER ND 1002151 USING ADHESIVE PER MIL-A-25457.
21. PAINT THE MODULE MOUNTING SURFACE AND THE SURFACE PERPENDICULAR TO THE MODULE MOUNTING SURFACE PER ND1002292, USING MIL-C-15328, WASHER PRIMER FOLLOWED BY MIL-P-8585 ZINC CHROMATE PRIMER, FOLLOWED BY 1012543-003 PAINT. MODULE GUIDE PINS, CONNECTOR FEMALE PINS AND INSULATORS TO BE FREE OF PAINT. SEE FIND NO. 35.

Ⓓ REPLACES WORD DRAWING REV C

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN Deschke DATE 29 SEP 64
CHECKED [illegible] 7 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible] 10-29-64
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 2

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1007532
SCALE FULL
WT
SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 12031			
SYM	DESCRIPTION	DATE	APPROVAL

DASH NO. 011

PART NO.	DESCRIPTION	REQD.
1008522-001	Frame, Tray 2	1
1006774	Insulator, Wrapost, Female Miniature	129
1006781-2	Contact, Wrapost, Female Miniature	129
1010382-1	Contact, Blade Edge Connector	84
1010383-1	Insulator, Wrapost, Male	84
1010622-1	Connector Receptacle	1
1010620-4	Pin, Guide	16
1010620-5	Pin, Guide	2
1001317	Retainer, Jack Screw	1
1008172	Screw, Jack	26
1008098	Screw, Socket Head	1
1004206	Washer, Thrust	52
1008099-2	Washer	1
MS 16995-10	Screw, Cap, Socket Head	3
MS 16995-11	Screw, Cap, Socket Head	2
MS 21045 C 04	Nut, Self-Locking Hex	2
MS 171433	Pin, Spring	26
1004207	Drive Cylinder	26
1007091	Assembly, Buffer Resistor Module	1
1008552-001	Gasket, Connector	1
1008551-001	Gasket, Connector	1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007572	
NEXT ASSY	USED ON
APPLICATION	

MASTER

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MATERIAL
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DWG. NO. CONTRACT

DRAWN Karen DATE 7/15/64
CHECKED
APPROVAL
APPROVAL 8/24/64
NASA APPROVAL 8/4/64
MIT APPROVAL W Kupfer 25 Aug 64

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HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 2
(100 SERIES)

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007532
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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1007533 A

REVISIONS 12031

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 13196	10-6-64	

PART NO.	DESCRIPTION	DASH NO. 011 REQD.	DASH NO. 021
1008523	Frame, Tray 3	1	1
1006774	Insulator, Wrapost, Female Miniature	182	182
1006781-2	Contact, Wrapost, Female Miniature	182	182
1010382-1	Contact, Blade Edge Connector	84	84
1010383-1	Insulator, Wrapost, Male	84	84
1010622-1	Connector Receptacle	1	1
1010620-4	Pin, Guide	24	24
1010620-5	Pin, Guide	2	2
1001317	Retainer, Jack Screw	1	1
1008172	Screw, Jack	36	36
1008098	Screw, Socket Head	1	1
1004206	Washer, Thrust	72	72
1008099-2	Washer	1	1
MS 16995-10	Screw, Cap, Socket Head	3	3
MS 16995-11	Screw, Cap, Socket Head	2	2
MS 21045 C 04	Nut, Self-Locking Hex	2	2
MS 171433	Pin, Spring	36	36
1004207	Drive Cylinder	36	36
1008552	Gasket, Connector	1	1
1008551	Gasket, Connector	1	1
	Harness (50 Series)	-	1
	Harness (100 Series)	1	-

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007573	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
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HEAT TREATMENT
FINAL FINISH

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DWG. NO. CONTRACT
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CHECKED
APPROVAL
APPROVAL D. R. Test 8/24/64
NASA APPROVAL 8/26/64
MIT APPROVAL W Kupfer 28 Aug 64

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HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 3

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007533
SCALE
WT
SHEET 1 OF 1

MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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1007533 B

REVISIONS 12031

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 13196	10-6-64	
B	REPLACED BY CONFIGURATION DWG REV C PER TDRR 13939	11/9/64	

PART NO.	DESCRIPTION	DASH NO. 011 REQD.	DASH NO. 021
1008523	Frame, Tray 3	1	1
1006774	Insulator, Wrapost, Female Miniature	182	182
1006781-2	Contact, Wrapost, Female Miniature	182	182
1010382-1	Contact, Blade Edge Connector	84	84
1010383-1	Insulator, Wrapost, Male	84	84
1010622-1	Connector Receptacle	1	1
1010620-4	Pin, Guide	24	24
1010620-5	Pin, Guide	2	2
1001317	Retainer, Jack Screw	1	1
1008172	Screw, Jack	36	36
1008098	Screw, Socket Head	1	1
1004206	Washer, Thrust	72	72
1008099-2	Washer	1	1
MS 16995-10	Screw, Cap, Socket Head	3	3
MS 16995-11	Screw, Cap, Socket Head	2	2
MS 21045 C 04	Nut, Self-Locking Hex	2	2
MS 171433	Pin, Spring	36	36
1004207	Drive Cylinder	36	36
1008552	Gasket, Connector	1	1
1008551	Gasket, Connector	1	1
	Harness (50 Series)	-	1
	Harness (100 Series)	1	-

Ⓑ REPLACED BY CONFIGURATION DWG REV C

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007573	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

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DWG. NO. CONTRACT
DRAWN Kasem DATE 2/15/64
CHECKED
APPROVAL
APPROVAL 8/24/64
NASA APPROVAL 8/4/64
MIT APPROVAL 28 Aug 64

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HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 3

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007533
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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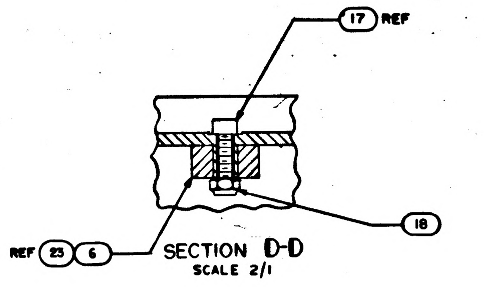
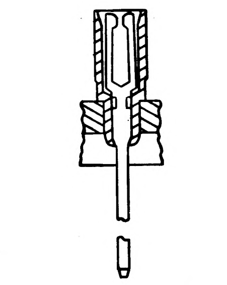
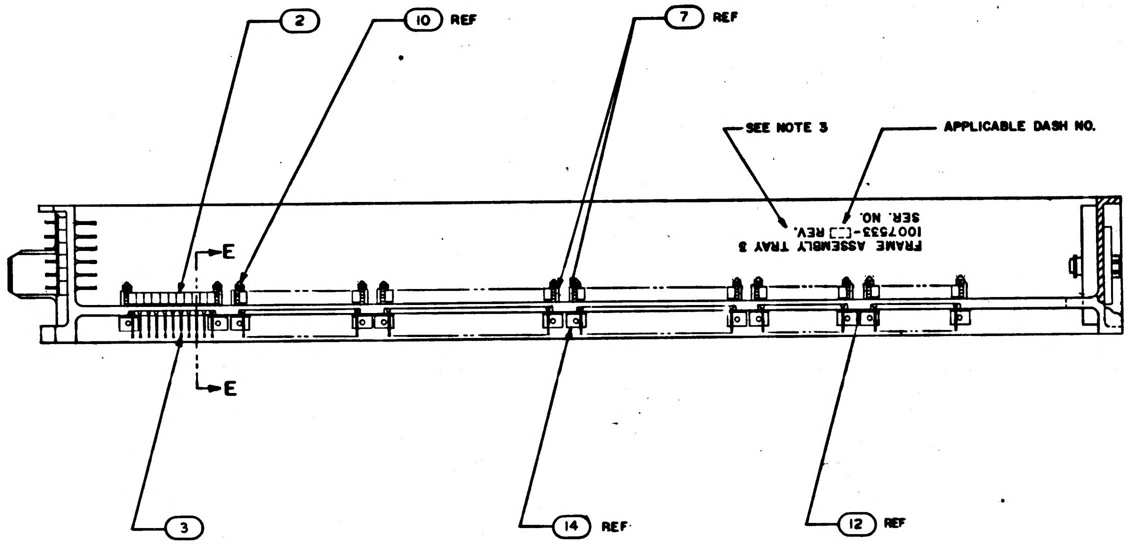
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939	1/9/66	WK

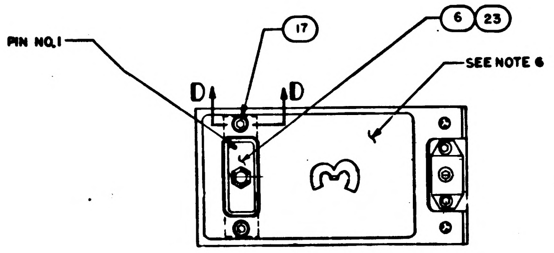


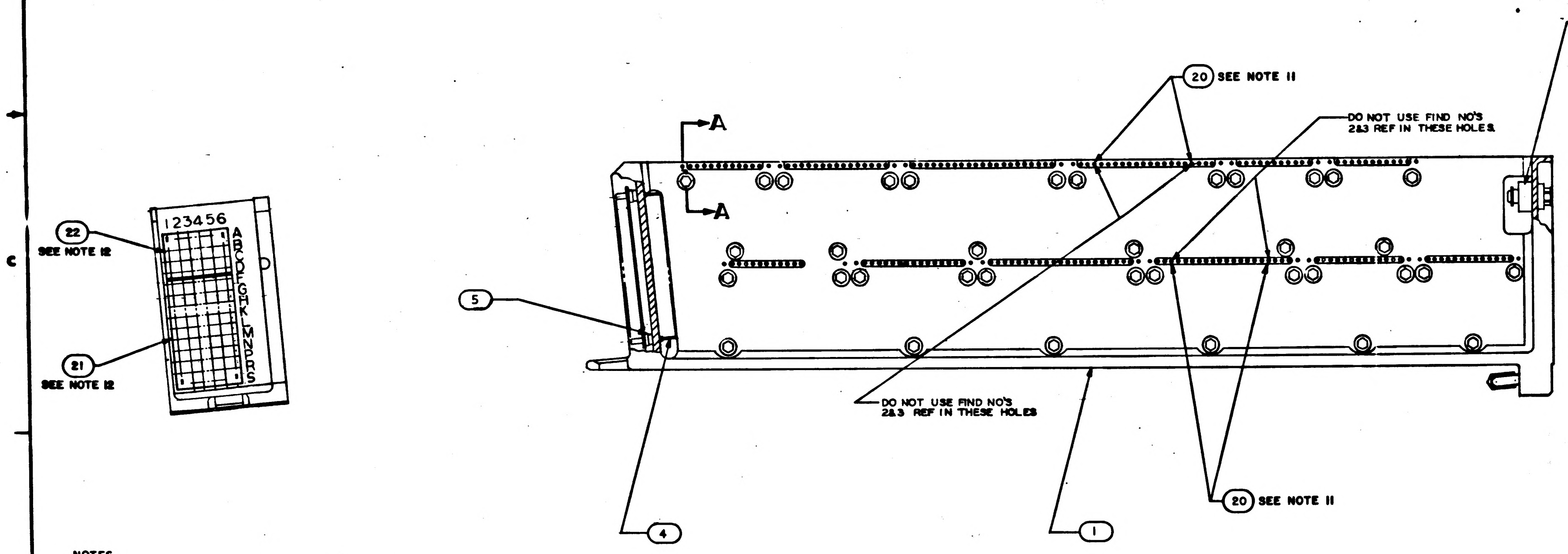
SECTION D-D
SCALE 2/1

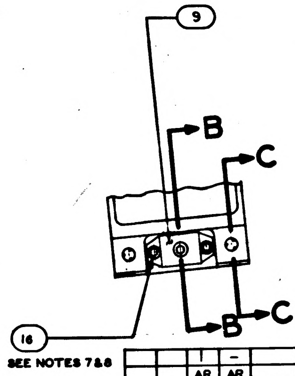


PARTIAL SECTION E-E
174 PLACES





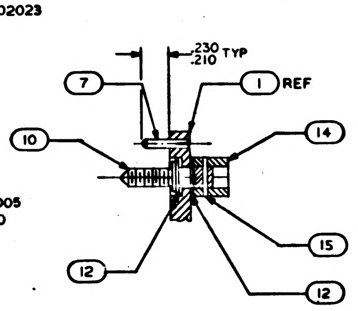




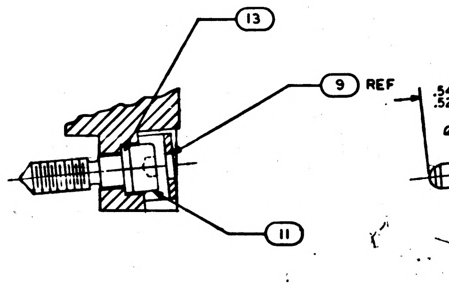
Ⓒ REPLACES WORD DWG REV B

NOTES

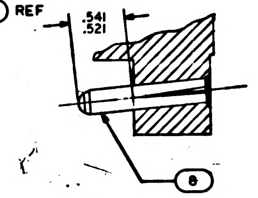
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL D 70327
2. ASSEMBLE FIND NUMBERS 2 3 4 AND 5 PER ND1002136
3. MARK PER ND1002019,(BLACK) .100/.140 HIGH AND SERIALIZE PER ND1002023
4. BOND FIND NO.19 TO FIND NO.1 PER ND1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION SEEPAGE NOT PERMISSIBLE.
7. COAT THREADS OF FIND NO.16 DURING FINAL ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NO'S. 16 & 17 TO FIND NO. 1 TO BE 5.0–5.5 IN. LB.
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005
   ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071
   ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS
10. PROCURE PER PS 1007143
11. BOND FIND NO.20 INTO HOLES FOR 45A3J4-3 AND -17, AND 45A3J10-3 AND -17 PER ND1002004, TYPE I.
12. BOND FIND NUMBERS 21 AND 22 TO FIND NO.5 PER ND1002237.
13. BOND FIND NUMBER 25 TO FIND NUMBER 1 AND APPLY A THIN COAT OF ADHESIVE PER ND 1002187 OVER FIND NUMBER 25 AND THE ADJOINING AREA.
14. BOND FIND NO.24 ONTO FIND NO.25 AS PREPARED IN NOTE 13 PER ND1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED)



SECTION A-A
SCALE 2/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

		1	–		1008270	WIRE LIST A–A	26
		AR	AR		MIL-I-15126	MYLAR TAPE TYPE MFT 2.5	25
		1	1		1006712–3	RESISTOR, TEMP. SENS.–WAFER	24
		–	1		1010821-1	CONNECTOR, RECEPTACLE	23
		1	1		1008551	GASKET, CONNECTOR, TRAY	22
		1	1		1008552	GASKET, CONNECTOR, TRAY	21
		–	X		1009563	WIRING DIAGRAM	REF
		X	–		1009553	WIRING DIAGRAM	REF
		4	4		1008256	PIN, POLARIZING	20
		1	–		1015735	WIRING HARNESS A	19
		2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS 16995-11	SCREW CAP SOCKET HEAD	17
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	16
		36	36		MS 171435	PIN, SPRING	15
		36	36		1004207	DRIVE CYLINDER	14
		1	1		1006099-2	WASHER	13
		72	72		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		36	36		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		1010620-4	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		174	174		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		174	174		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	1		1008523	FRAME	1
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
QUANTITY REQUIRED					LIST OF MATERIALS		

C
1007533

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007573		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
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Contract NAS 9-497
DRAWN DATE 30 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL A. R. Fox 10-10-64
NASA APPROVAL W. J. Robinson 11-4-64
MIT APPROVAL

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HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 3

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007533
SCALE 1/1
WT
SHEET 1 OF 2

MASTER

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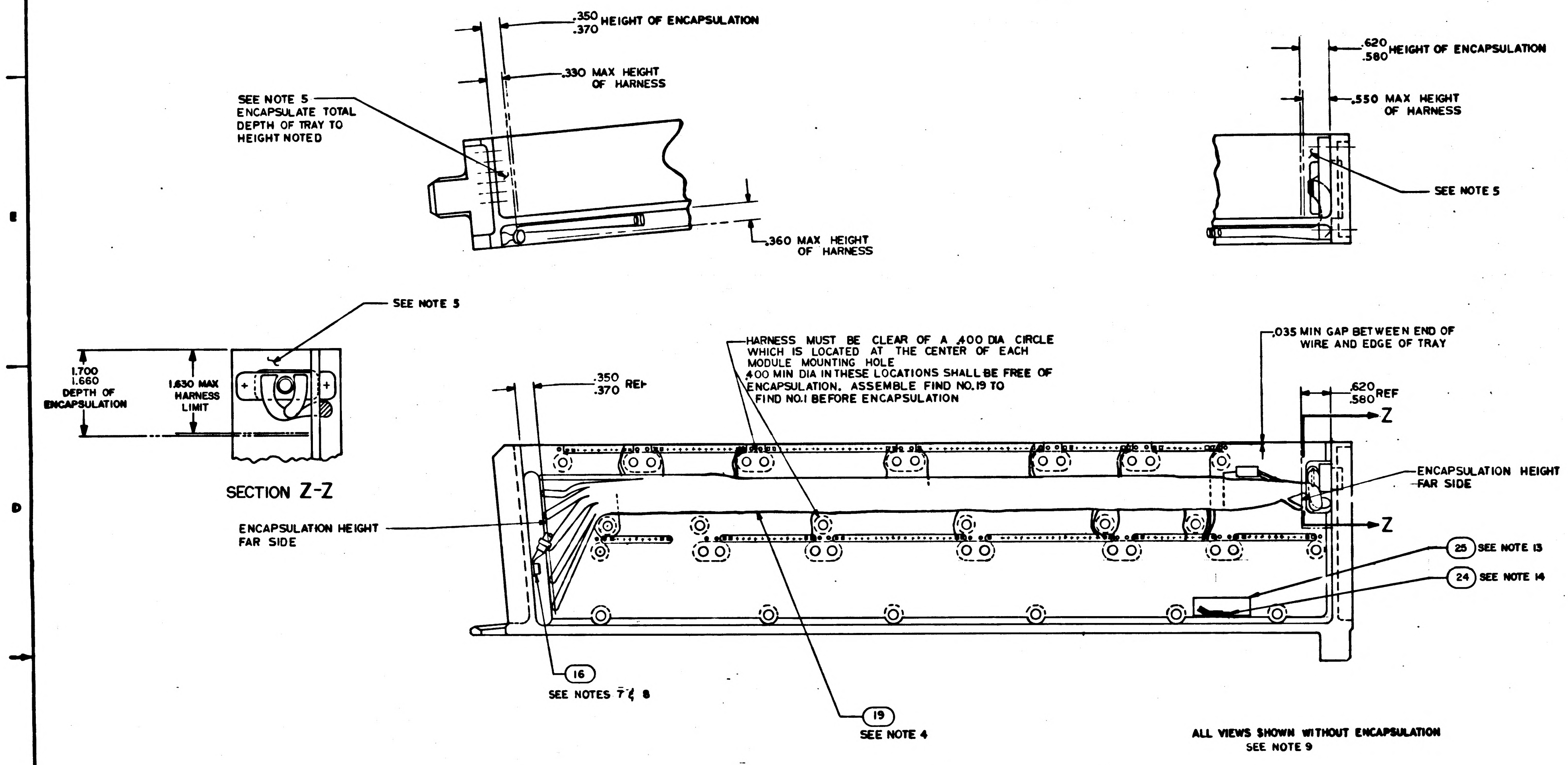
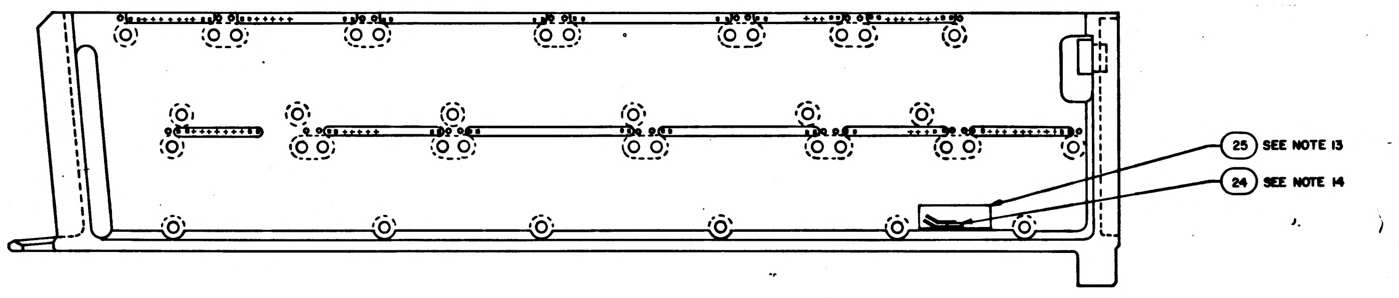
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		REPLACES WORD DWG REV B PER TDRR 3939			wk


.350
.370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5
SEE NOTE 5
1.700
1.660
DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT
SECTION Z-Z
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO. 19 TO FIND NO. 1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350
.370 REF
.620
.580 REF
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
25 SEE NOTE 13
24 SEE NOTE 14
16
SEE NOTES 7 & 8
19
SEE NOTE 4
ALL VIEWS SHOWN WITHOUT ENCAPSULATION SEE NOTE 9

-011 ASSY


25 SEE NOTE 13
24 SEE NOTE 14

-021 ASSY

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

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INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN DATE
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-29-64
NASA APPROVAL W J Rhine 11-4-64
MIT APPROVAL 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 3

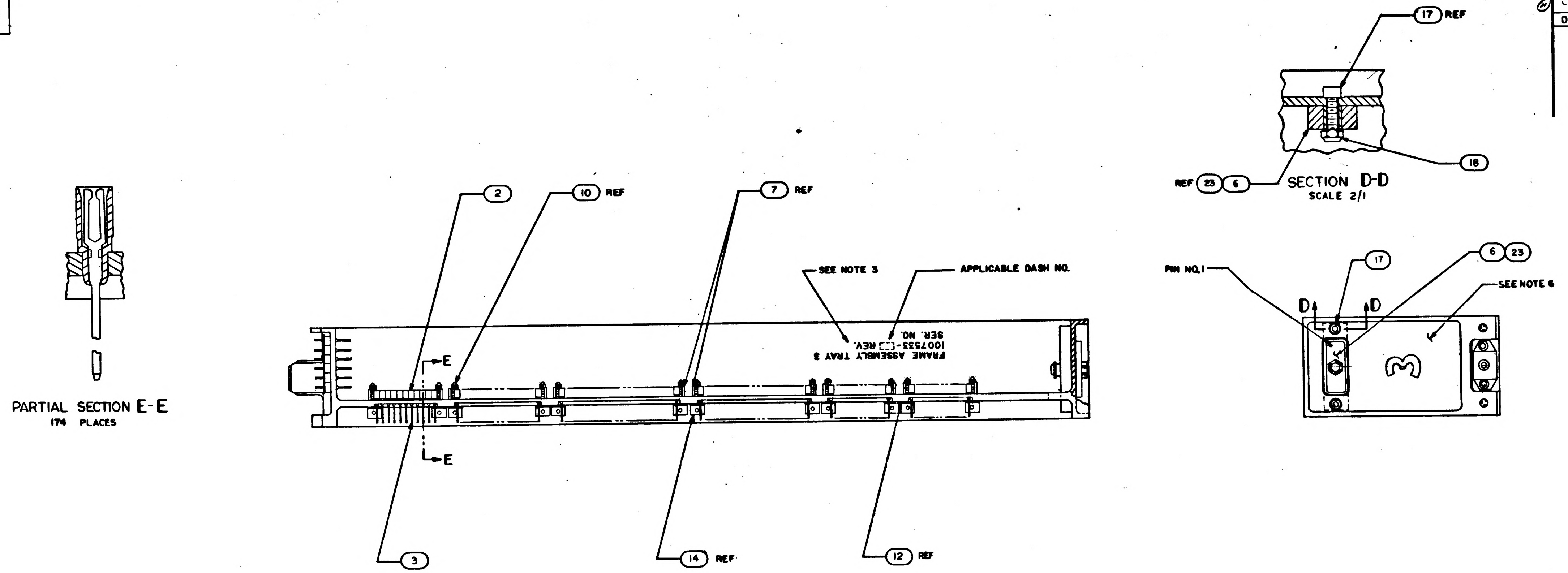
CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007533
SCALE 1/1
WT
SHEET 2 OF 2

MASTER

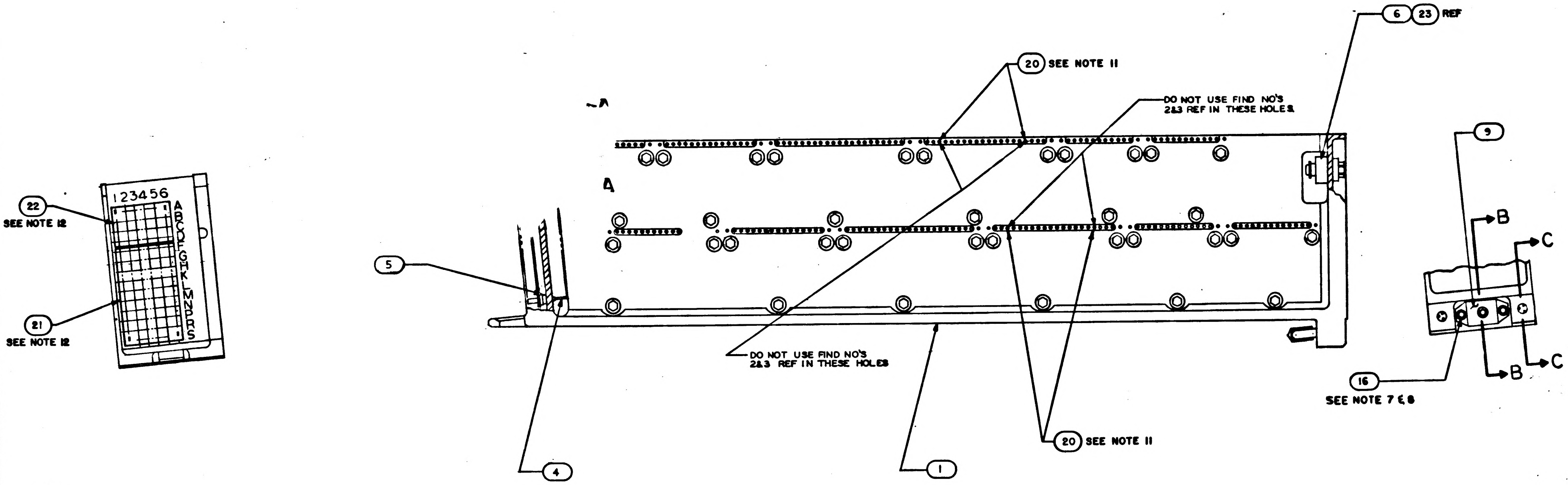
C

1007533

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TORR 13939		WK
D	REVISED PER TORR 15160	29 Dec '64	



17 REF
18
REF 23 6
SECTION D-D
SCALE 2/1
PIN NO.1
17
6 23
SEE NOTE 6
D
D
3
2
10 REF
7 REF
SEE NOTE 3
APPLICABLE DASH NO.
FRAME ASSEMBLY TRAY 3
1007533-( ) REV.
SER. NO.
E
E
3
14 REF
12 REF
PARTIAL SECTION E-E
174 PLACES

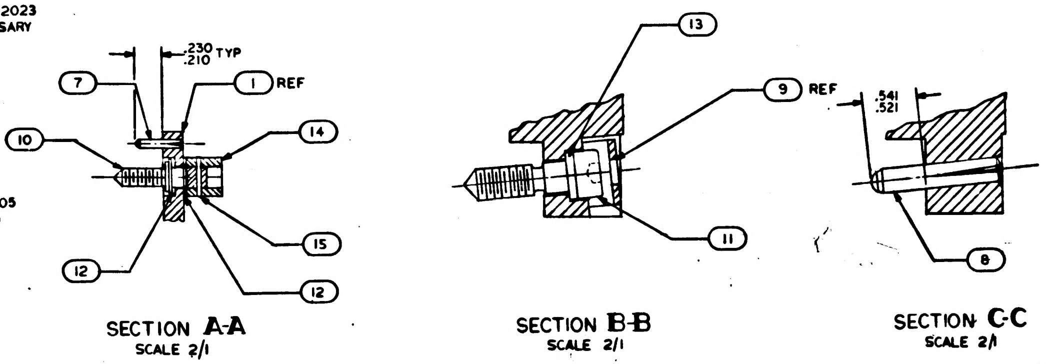


6 23 REF
20 SEE NOTE 11
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
A
A
123456
ABCDEFGHJKLMNPRS
22
SEE NOTE 12
21
SEE NOTE 12
5
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
4
1
20 SEE NOTE 11
9
B
C
B
C
16
SEE NOTE 7 & 8

© REPLACES WORD DWG REV B

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL D 70327
2. ASSEMBLE FIND NUMBERS 2 3 4 AND 5 PER ND1002136
3. MARK PER ND1002019,(BLACK) .100/.140 HIGH AND SERIALIZE PER ND1002023
4. BOND FIND NOS. 19, 27, 28, & 29 TO FIND NO.1 PER ND 1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION SEEPAGE NOT PERMISSIBLE.
7. COAT THREADS OF FIND NO.16 DURING FINAL ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NO'S. 16 & 17 TO FIND NO.1 TO BE 5.0-5.5 IN.LB.
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005
   ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071
   ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS
10. PROCURE PER PS 1007143
11. BOND FIND NO.20 INTO HOLES FOR 45A3J4-3 AND -17, AND 45A3J10-3 AND -17 PER ND1002004, TYPE I.
12. BOND FIND NUMBERS 21 AND 22 TO FIND NO.5 PER ND1002237.
13. BOND FIND NUMBER 25 TO FIND NUMBER 1 AND APPLY A THIN COAT OF ADHESIVE PER ND 1002187 OVER FIND NUMBER 25 AND THE ADJOINING AREA.
14. BOND FIND NO.24 ONTO FIND NO.25 AS PREPARED IN NOTE 13 PER ND 1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED)



.230
.210 TYP
7
1 REF
10
14
15
12
12
SECTION A-A
SCALE 2/1
13
9 REF
11
SECTION B-B
SCALE 2/1
.541
.521
8
SECTION C-C
SCALE 2/1

QUANTITY REQUIRED 021	QUANTITY REQUIRED 011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
–	1		1008608	WIRE LIST A A	30
–	1		1008607	WIRING HARNESS C	29
–	1		1008606	WIRING HARNESS B	28
–	1		1008605	WIRING HARNESS A	27
1	–		1008270	WIRE LIST A–A	26
AR	AR		MIL-I-15126	MYLAR TAPE TYPE MFT 2.5	25
1	1		1006712–3	RESISTOR, TEMP. SENS.–WAFER	24
–	1		1010821-1	CONNECTOR, RECEPTACLE	23
1	1		1008551	GASKET, CONNECTOR, TRAY	22
1	1		1008552	GASKET, CONNECTOR, TRAY	21
–	☒		1009563	WIRING DIAGRAM	REF
☒	–		1009553	WIRING DIAGRAM	REF
4	4		1008256	PIN, POLARIZING	20
1	–		1015735	WIRING HARNESS A	19
2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	18
2	2		MS 16995-11	SCREW CAP SOCKET HEAD	17
3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	16
36	36		MS 171433	PIN, SPRING	15
36	36		1004207	DRIVE CYLINDER	14
1	1		1008099-2	WASHER	13
72	72		1004206	WASHER, THRUST	12
1	1		1008098	SCREW, SOCKET HEAD	11
36	36		1008172	SCREW, JACK	10
1	1		1001317	RETAINER, JACK SCREW	9
2	2		1010620-5	PIN, GUIDE	8
24	24		1010620-4	PIN, GUIDE	7
1	–		1010622-1	CONNECTOR, RECEPTACLE	6
84	84		1010383-1	INSULATOR, WRAPOST MALE	5
84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
174	174		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
174	174		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
1	1		1008523	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

M I T
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
Contract NAS 9-497
DRAWN DATE 30
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-20-64
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 3

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007533
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
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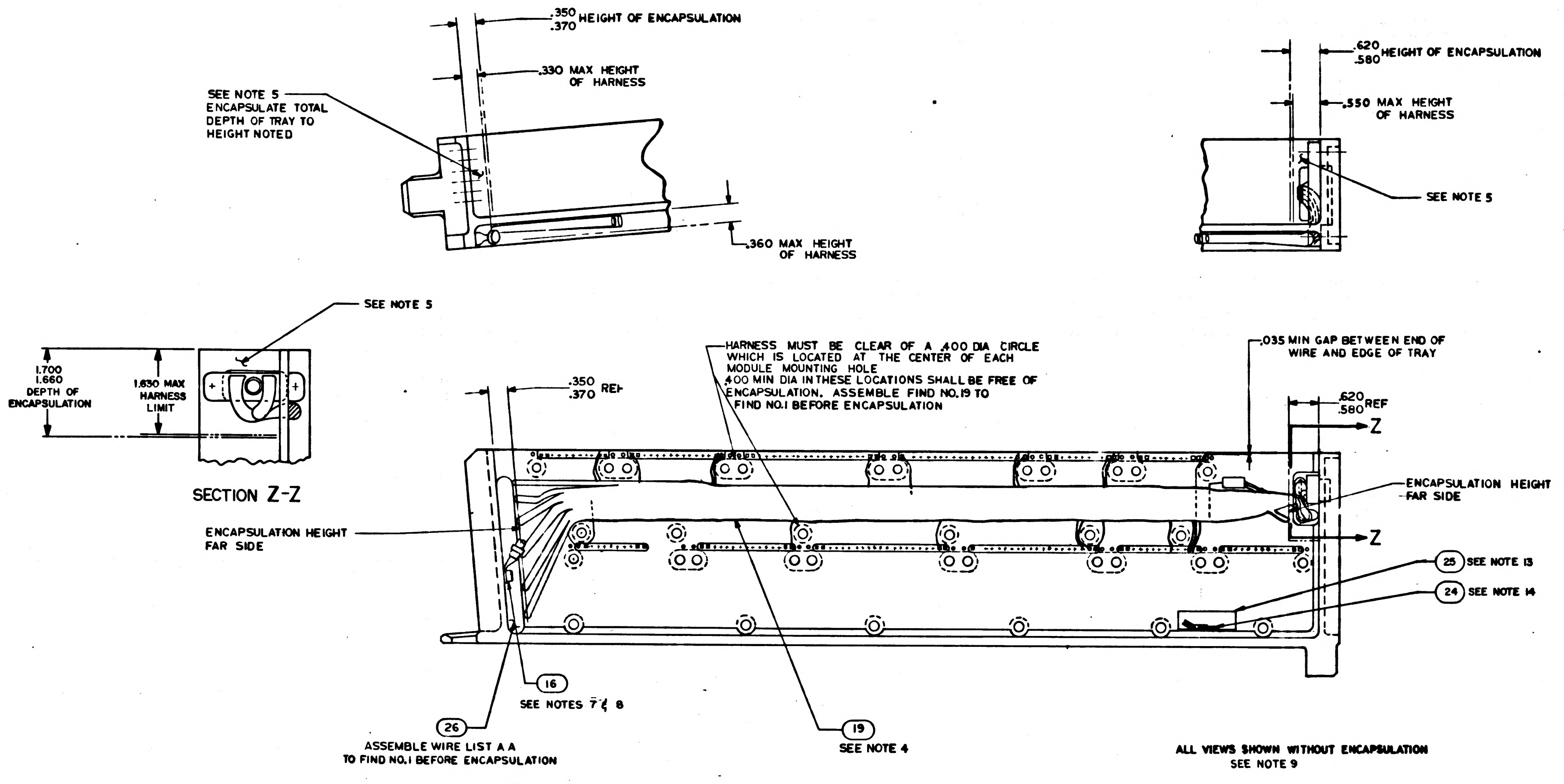
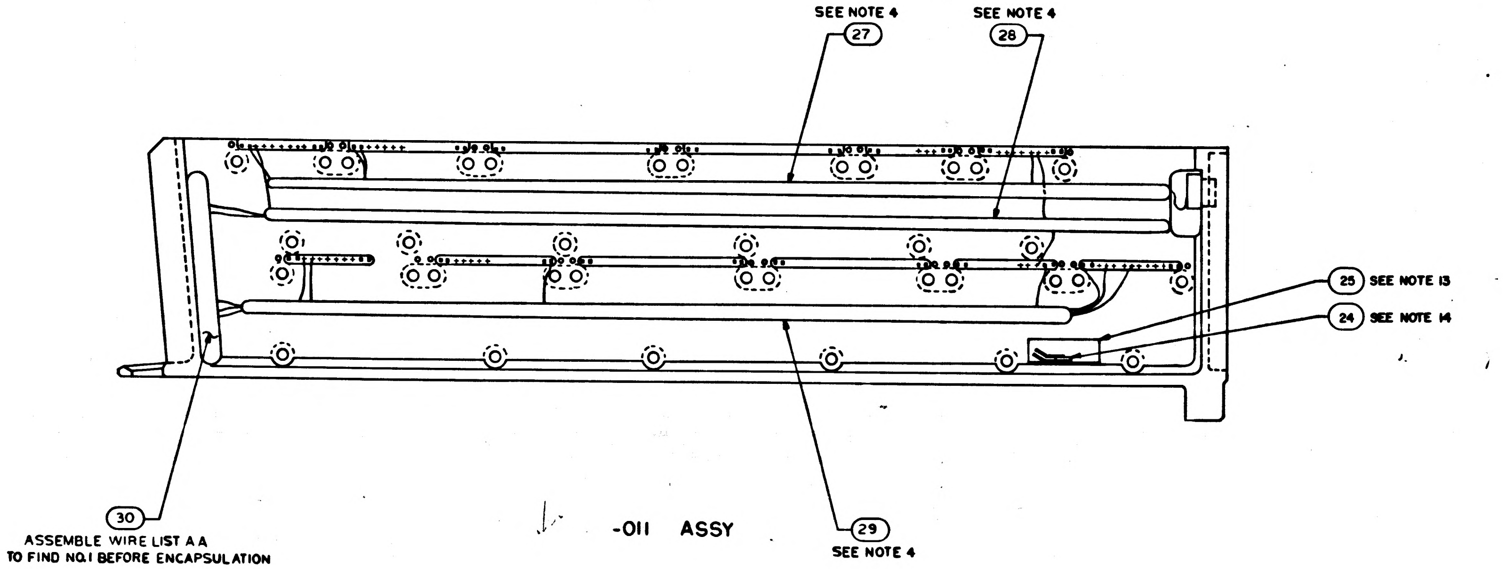
D		REVISED PER TDRR 15160			


.350
.370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5
SEE NOTE 5
1.700
1.660
DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT
SECTION Z-Z
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO.19 TO FIND NO.1 BEFORE ENCAPSULATION
.350
.370 REF
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.620
.580 REF
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
25 SEE NOTE 13
24 SEE NOTE 14
16 SEE NOTES 7 & 8
26 ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
19 SEE NOTE 4

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9

-021 ASSY


SEE NOTE 4
27
SEE NOTE 4
28
25 SEE NOTE 13
24 SEE NOTE 14
30 ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
29 SEE NOTE 4

-011 ASSY

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. Contract NAS 9-497
DRAWN DATE
CHECKED 7OCT64
APPROVAL 8OCT64
APPROVAL 10-29-64
NASA APPROVAL W J Rhine 11-4-64
MIT APPROVAL W Coffin 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 3

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007533
SCALE 1/1
WT
SHEET 2 OF 2

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REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES W[illegible] REV B PER TDRR 13939	[illegible]	WK
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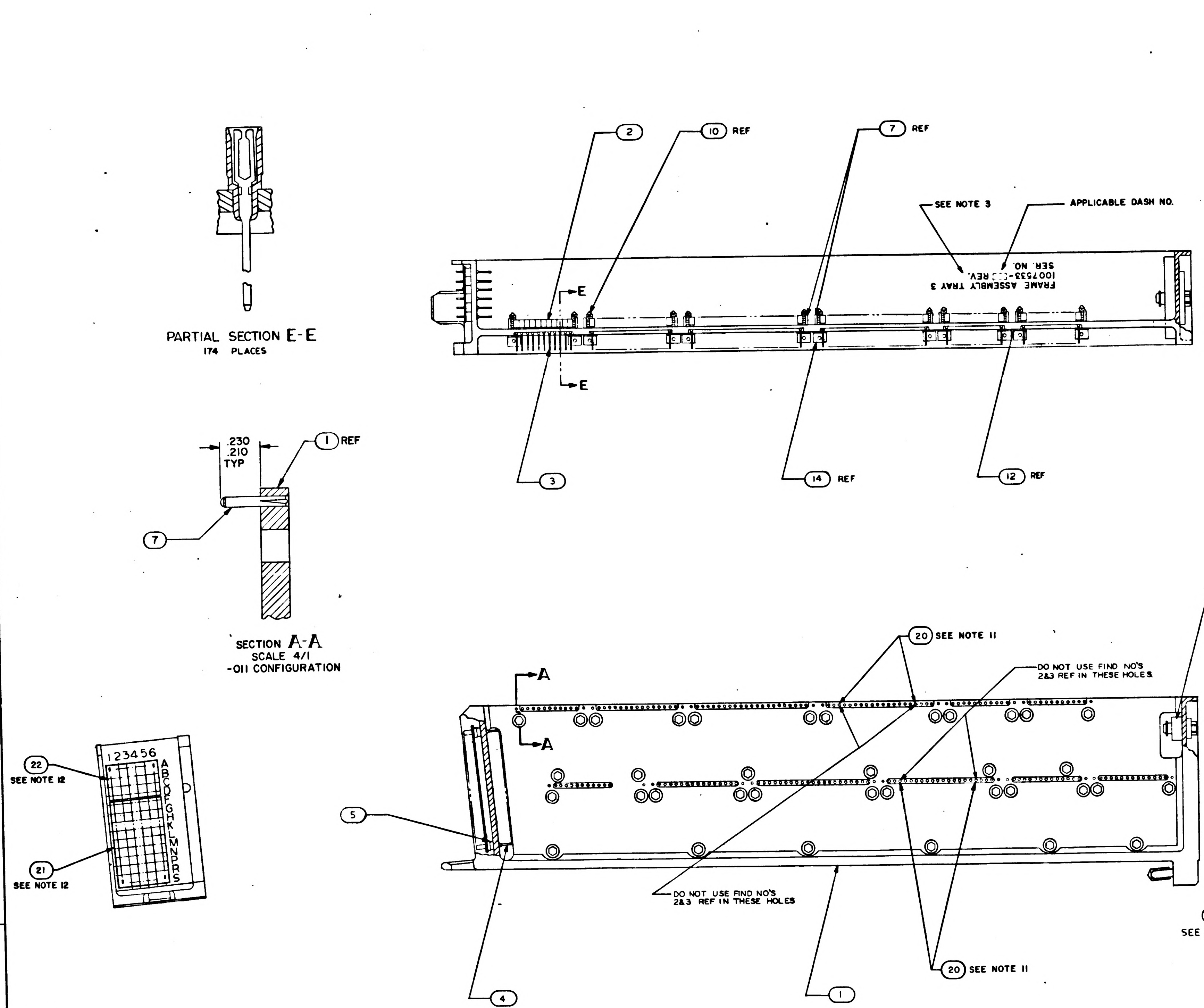
PARTIAL SECTION E-E
174 PLACES
SEE NOTE 3
APPLICABLE DASH NO.
FRAME ASSEMBLY TRAY 3
1007533-( ) REV.
SER. NO.
2
10 REF
7 REF
E
E
3
14 REF
12 REF
.230
.210
TYP
1 REF
7
SECTION A-A
SCALE 4/1
-011 CONFIGURATION
A
A
20 SEE NOTE 11
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
6 23 REF
123456
ABCDEFGHJKLMNPRS
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SEE NOTE 12
21
SEE NOTE 12
5
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
4
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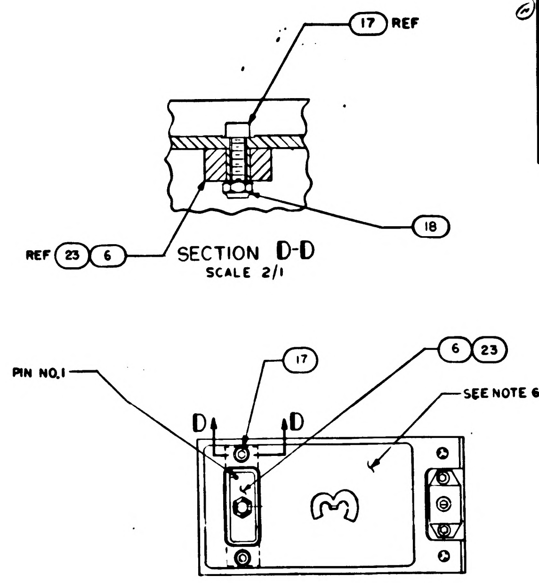
20 SEE NOTE 11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REF 23 6
SECTION D-D
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PIN NO.1
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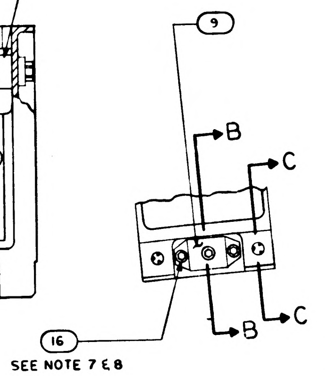
6 23
SEE NOTE 6
D
D
3



SEE NOTE 7 & 8

Ⓒ REPLACES WORPD DWG REV B

NOTES

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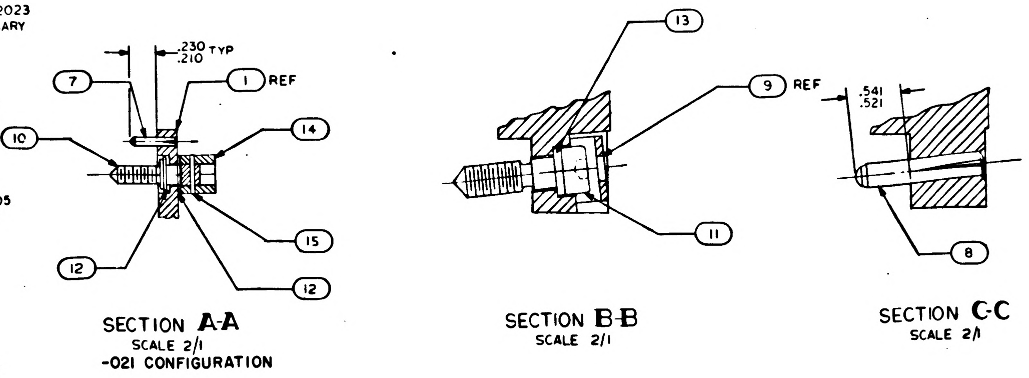
.230
.210 TYP
7
1 REF
10
14
15
12
12
SECTION A-A
SCALE 2/1
-021 CONFIGURATION
13
9 REF
11
SECTION B-B
SCALE 2/1
.541
.521
8
SECTION C-C
SCALE 2/1

		QUANTITY REQUIRED 021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		–	1		1008608	WIRE LIST A A	30
		–	1		1008607	WIRING HARNESS C	29
		–	1		1008606	WIRING HARNESS B	28
			1		1008605	WIRING HARNESS A	27
		1	–		1008270	WIRE LIST A–A	26
		AR	AR		MIL-I-15126	MYLAR TAPE TYPE MFT 2.5	25
		1	1		1006712–3	RESISTOR, TEMP. SENS.-WAFER	24
		—	1		1010821-1	CONNECTOR, RECEPTACLE	23
		1	1		1008551	GASKET, CONNECTOR, TRAY	22
		1	1		1008552	GASKET, CONNECTOR, TRAY	21
		—	☒		1009563	WIRING DIAGRAM	REF
		☒	—		1009553	WIRING DIAGRAM	REF
		4	4		1008256	PIN, POLARIZING	20
		1	—		1015735	WIRING HARNESS A	19
		2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS 16995-11	SCREW CAP SOCKET HEAD	17
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	16
		36	—		MS 171433	PIN, SPRING	15
		36	—		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		72	—		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		36	—		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		1010620-4	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		174	174		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		174	174		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	1		1008523	FRAME	1

LIST OF MATERIALS

1007573		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS - DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN [illegible] DATE 30 Sep 64
CHECKED [illegible] 7 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 3

CODE IDENT NO
SIZE E
NASA DRAWING NO 1007533
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
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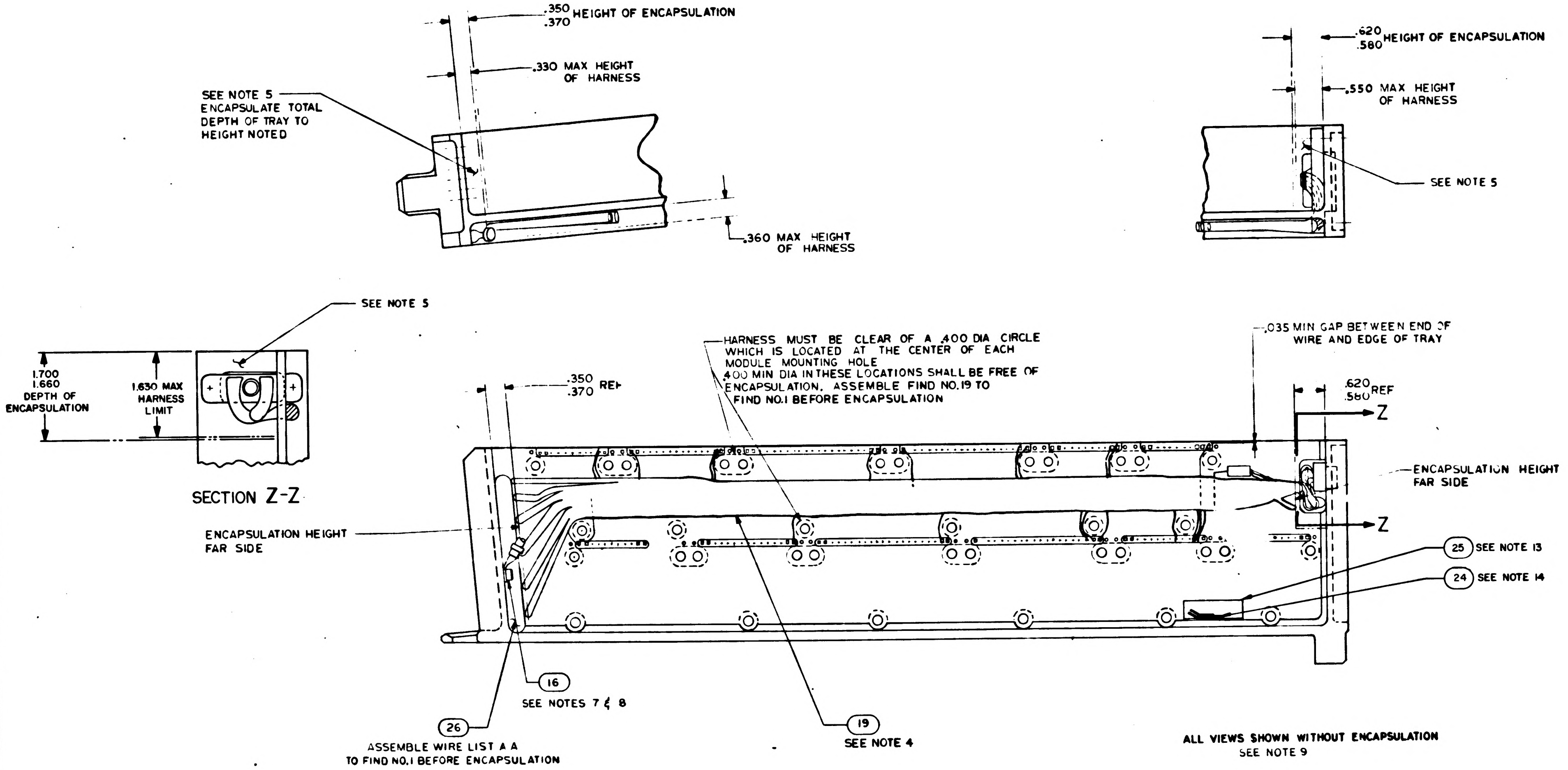
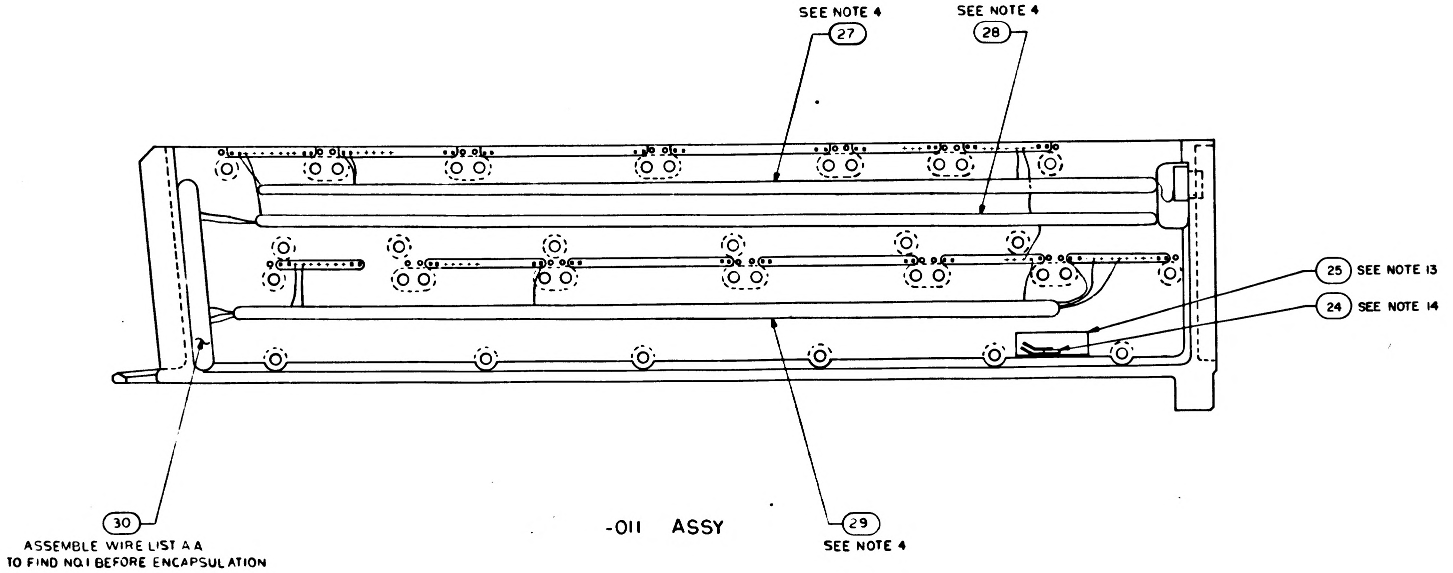
D		REVISED PER TDRR 15160			
E		REVISED PER TDRR 15948	—	11 FEB -65	


.350
.370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5
SEE NOTE 5
1.700
1.660
DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT
SECTION Z-Z
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO.19 TO FIND NO.1 BEFORE ENCAPSULATION
.350
.370 REF
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.620
.580 REF
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
25 SEE NOTE 13
24 SEE NOTE 14
16
SEE NOTES 7 & 8
26
ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
19
SEE NOTE 4

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9

-021 ASSY


SEE NOTE 4
27
SEE NOTE 4
28
25 SEE NOTE 13
24 SEE NOTE 14
30
ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
29
SEE NOTE 4

-011 ASSY

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — — ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-4065
DRAWN [illegible] DATE 30 Sep 64
CHECKED [illegible] 7 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible] 10-29-64
NASA APPROVAL [illegible] 11-4-64
MIT APPROVAL [illegible] 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

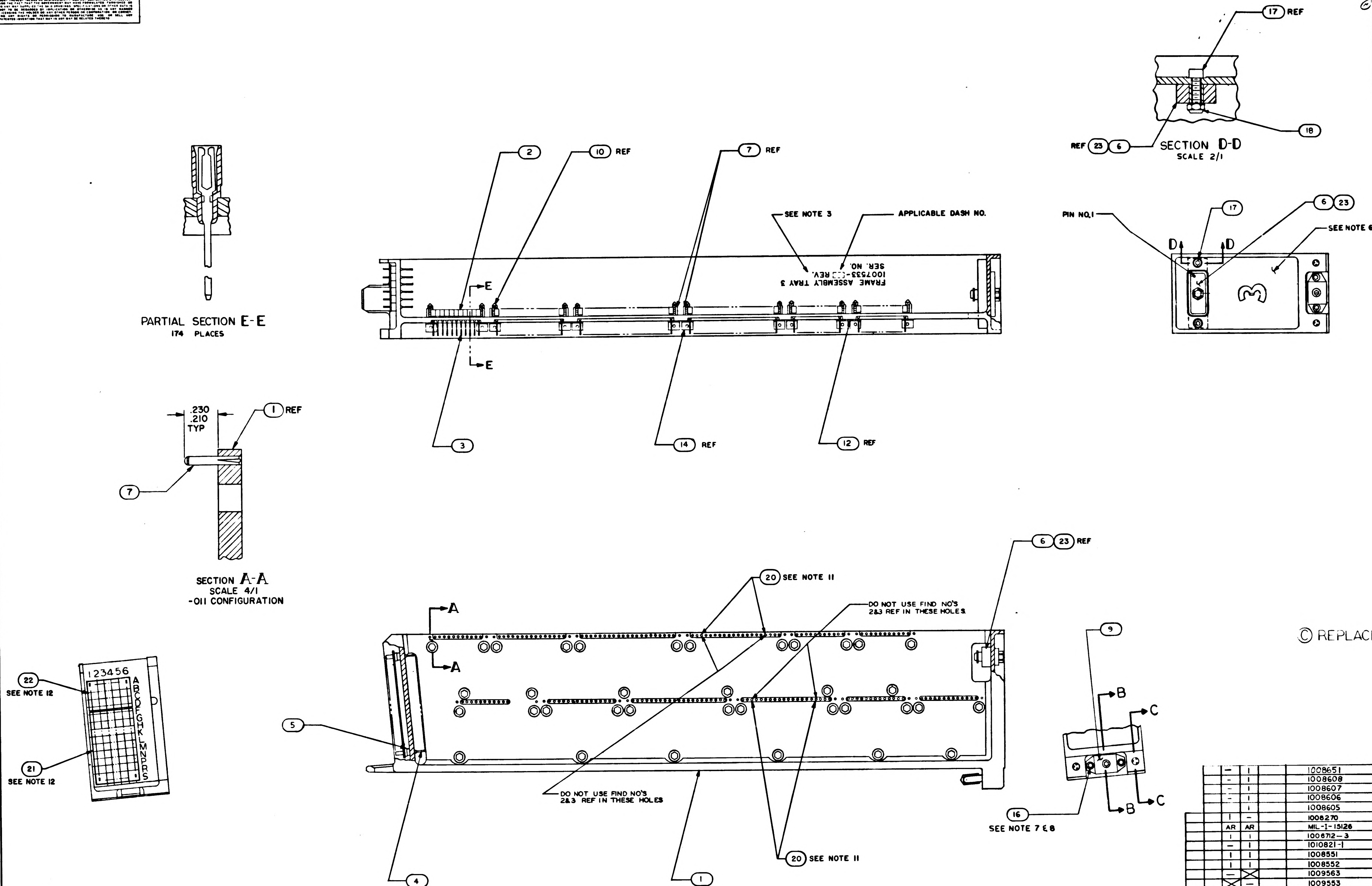
FRAME ASSEMBLY
TRAY 3

CODE IDENT NO
SIZE E
NASA DRAWING NO 1007533
SCALE 1/1
WT
SHEET 2 OF 2

1007533

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES [illegible] PER TDRR 3939	[illegible]	[illegible]
D	REVISED PER TDRR 15160	29 Jan '64	[illegible]
E	REVISED PER TDRR 5948	[illegible]	[illegible]
F	REVISED PER TDRR 16267	15 FEB 65	[illegible]



17 REF
18
REF 23 6
SECTION D-D
SCALE 2/1
PIN NO.1
17
6 23
SEE NOTE 6
D D
3
2
10 REF
7 REF
SEE NOTE 3
APPLICABLE DASH NO.
FRAME ASSEMBLY TRAY 3
1007533-☐☐ REV.
SER. NO.
E
E
3
14 REF
12 REF
PARTIAL SECTION E-E
174 PLACES
.230
.210
TYP
1 REF
7
SECTION A-A
SCALE 4/1
-011 CONFIGURATION
6 23 REF
20 SEE NOTE 11
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
A
A
123456
ABCDEFGHKLMNPRS
22
SEE NOTE 12
21
SEE NOTE 12
5
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
4
1
20 SEE NOTE 11
9
B
C
B
C
16
SEE NOTE 7 & 8

Ⓒ REPLACES WOPD DWG REV B

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL D 70327
2. ASSEMBLE FIND NUMBERS 2 3 4 AND 5 PER ND1002136
3. MARK PER ND1002019,(BLACK) .100/.140 HIGH AND SERIALIZE PER ND1002023
4. BOND FIND NOS. 19, 27, 28, & 29 TO FIND NO.1 PER ND 1002004 TYPE I AS NECESSARY
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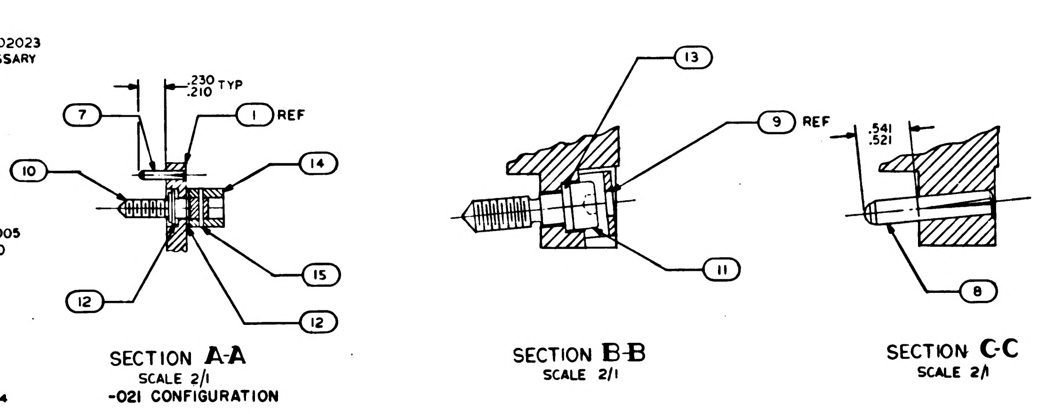
   ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS
10. PROCURE PER PS 1007143
11. BOND FIND NO.20 INTO HOLES FOR 45A3J4-3 AND -17, AND 45A3J10-3 AND -17 PER ND1002004, TYPE I.
12. BOND FIND NUMBERS 21 AND 22 TO FIND NO.5 PER ND1002237.
13. BOND FIND NUMBER 25 TO FIND NUMBER 1 AND APPLY A THIN COAT OF ADHESIVE PER ND 1002187 OVER FIND NUMBER 25 AND THE ADJOINING AREA.
14. BOND FIND NO.24 ONTO FIND NO. 25 AS PREPARED IN NOTE 13 PER ND 1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED)



.230
.210 TYP
7
1 REF
10
14
15
12
12
13
9 REF
11
.541
.521
8

SECTION A-A
SCALE 2/1
-021 CONFIGURATION

SECTION B-B
SCALE 2/1

SECTION C-C
SCALE 2/1

QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		021	011				
		—	1		1008651	FRAME	31
		-	1		1008608	WIRE LIST A A	30
		-	1		1008607	WIRING HARNESS C	29
		-	1		1008606	WIRING HARNESS B	28
			1		1008605	WIRING HARNESS A	27
		1	—		1008270	WIRE LIST A-A	26
		AR	AR		MIL-I-15126	MYLAR TAPE TYPE MFT 2.5	25
		1	1		1006712-3	RESISTOR, TEMP. SENS.-WAFER	24
		—	1		1010821-1	CONNECTOR, RECEPTACLE	23
		1	1		1008551	GASKET, CONNECTOR, TRAY	22
		1	1		1008552	GASKET, CONNECTOR, TRAY	21
		—	╳		1009563	WIRING DIAGRAM	REF
		╳	—		1009553	WIRING DIAGRAM	REF
		4	4		1008256	PIN, POLARIZING	20
		1	—		1015735	WIRING HARNESS A	19
		2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS 16995-11	SCREW CAP SOCKET HEAD	17
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	16
		36	—		MS 171433	PIN, SPRING	15
		36	—		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		72	—		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		36	—		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		1010620-4	PIN, GUIDE	7
		1	—		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		174	174		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		174	174		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	—		1008523	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-49
DRAWN [illegible] DATE 30 Sep 64
CHECKED [illegible] 7 Oct 64
APPROVAL [illegible] 8 Oct 64
APPROVAL [illegible]
NASA APPROVAL [illegible] 11-4-64
MIT APPROVAL [illegible] 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 3

CODE IDENT NO. | SIZE E | NASA DRAWING NO 1007533
SCALE 1/1 | WT | SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		REPLACES WORK DWG REV B PER TDRR 13739			
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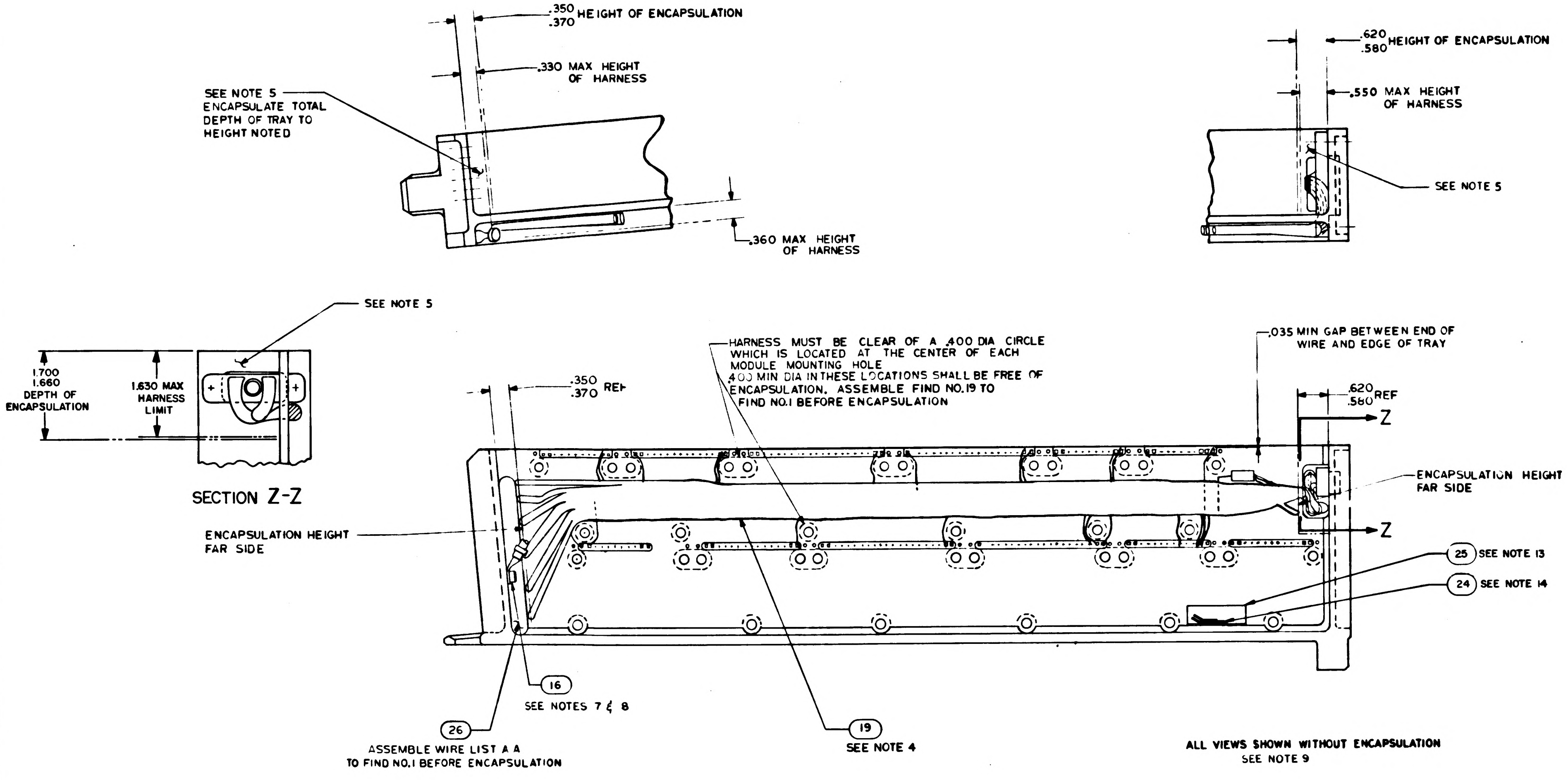
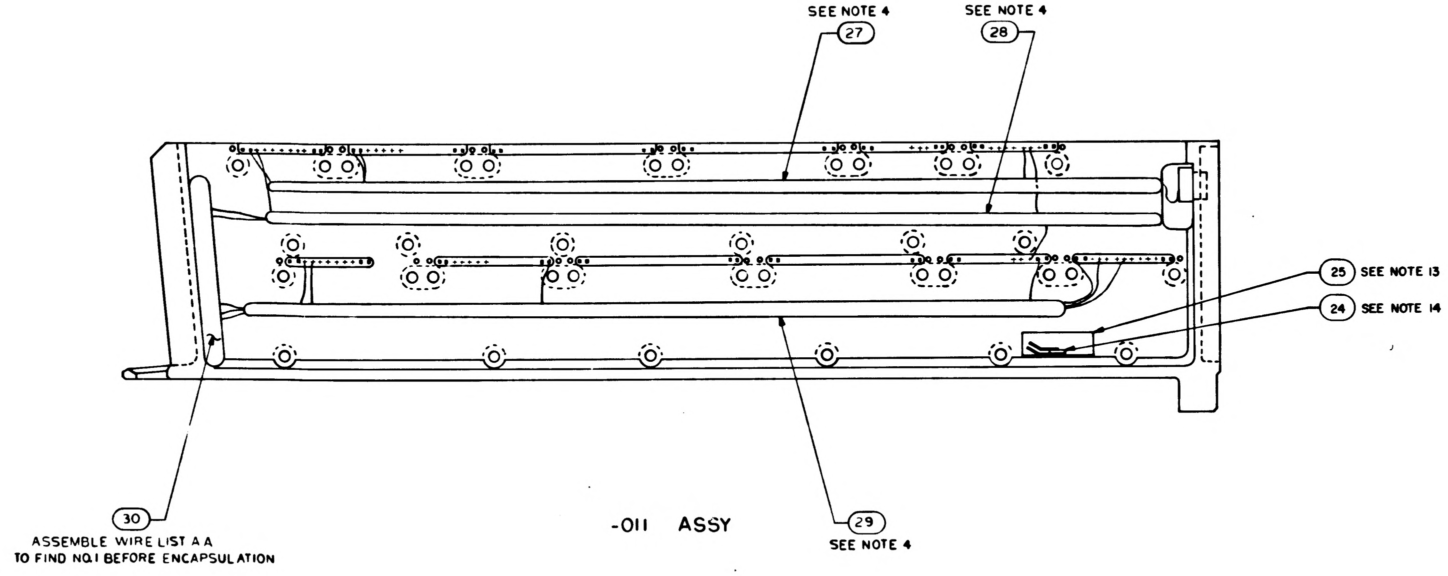
E		REVISED PER TDRR 5948	—	FEB -65	
F		REVISED PER TDRR 1626		5 FEB 65	


.350
.370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5
SEE NOTE 5
1.700
1.660
DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT
SECTION Z-Z
.350
.370 REF
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO.19 TO FIND NO.1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.620
.580 REF
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
25 SEE NOTE 13
24 SEE NOTE 14
16
SEE NOTES 7 & 8
26
ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
19
SEE NOTE 4
ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9

-021 ASSY


SEE NOTE 4
27
SEE NOTE 4
28
25 SEE NOTE 13
24 SEE NOTE 14
30
ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
29
SEE NOTE 4

-011 ASSY

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN DATE 30 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-30-64
NASA APPROVAL 11-4-64
MIT APPROVAL W Kupfer 4 May 64

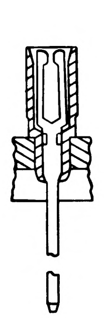
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

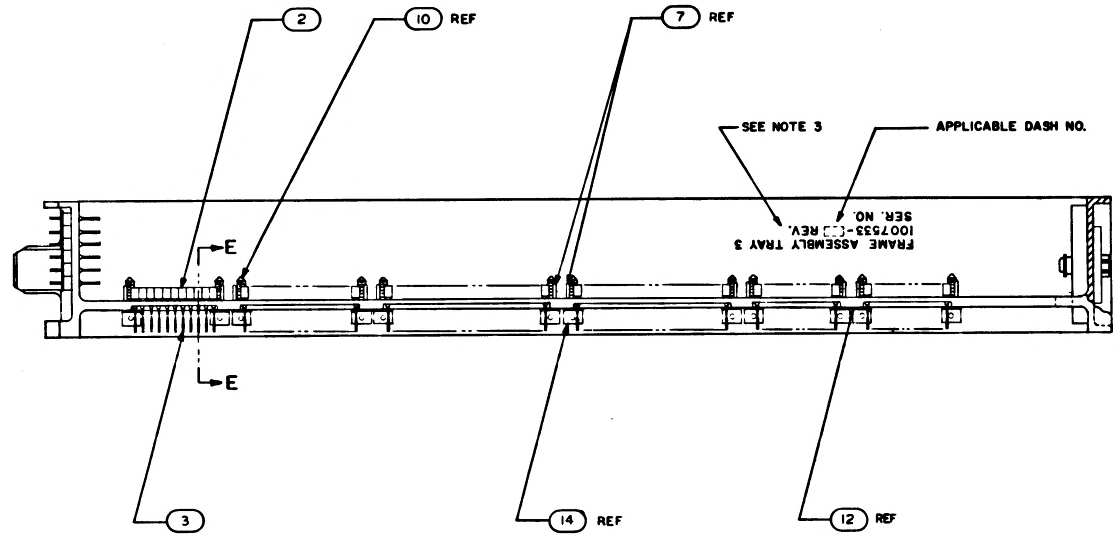
FRAME ASSEMBLY
TRAY 3

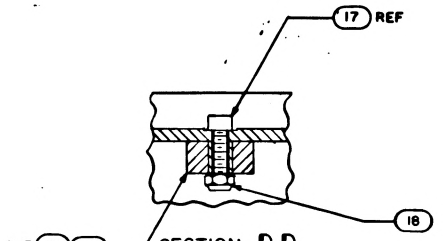
CODE IDENT NO
SIZE E
NASA DRAWING NO 1007533
SCALE 1/1
WT
SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

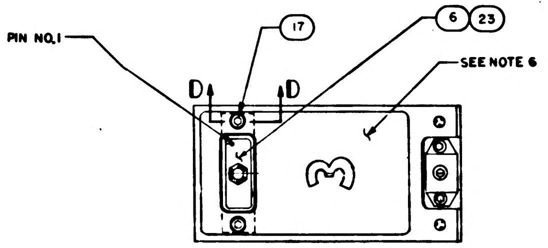
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939	4/[illegible]	WK
D	REVISED PER TDRR 15160	29 Dec 64	
E	REVISED PER TDRR 5948	[illegible] FEB 65	
F	REVISED PER TDRR 16267	15 FEB 65	
G	REVISED PER TDRR 17613	24 MAR 65	RJJ

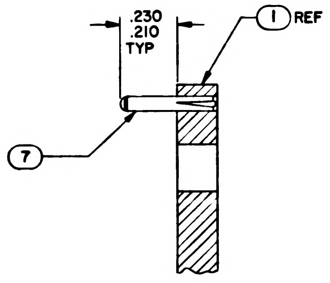

PARTIAL SECTION E-E
174 PLACES



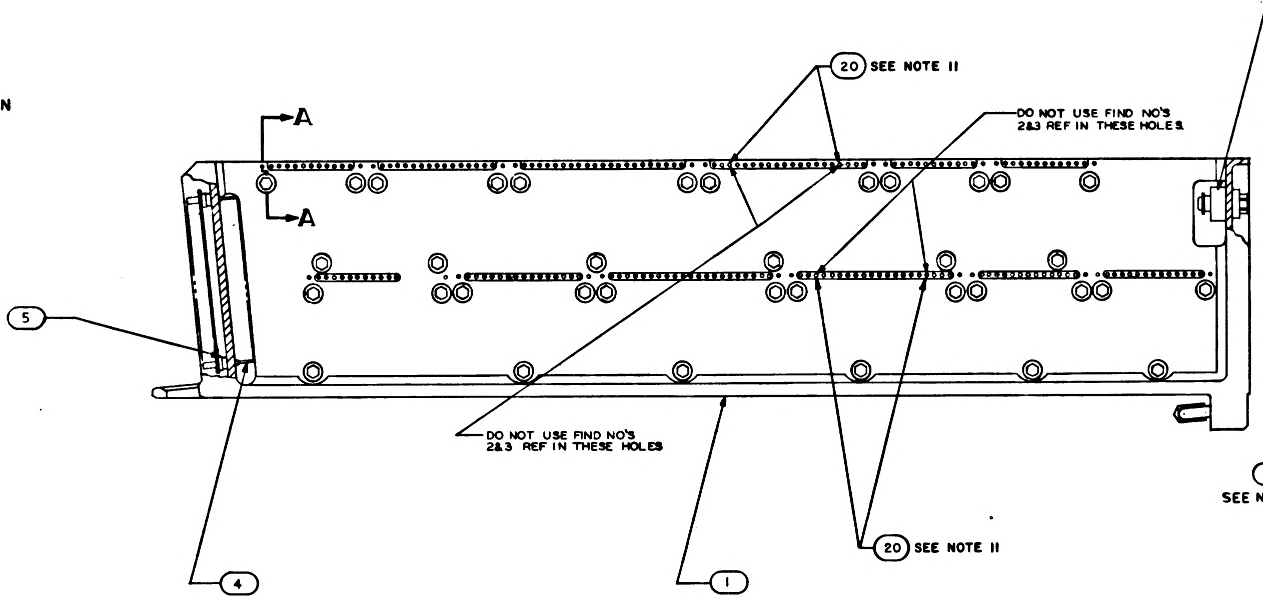


SECTION D-D
SCALE 2/1

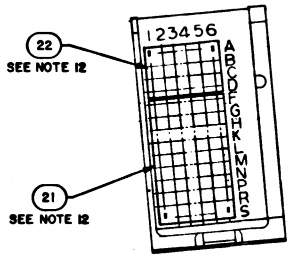


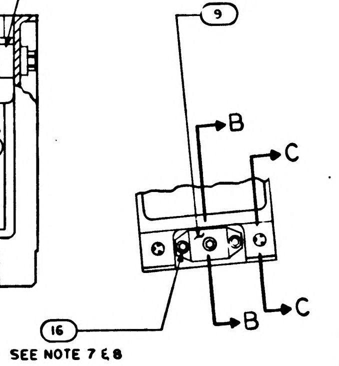


SECTION A-A
SCALE 4/1
-011 CONFIGURATION


6 23 REF
20 SEE NOTE 11
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
A
A
5
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
20 SEE NOTE 11
4
1

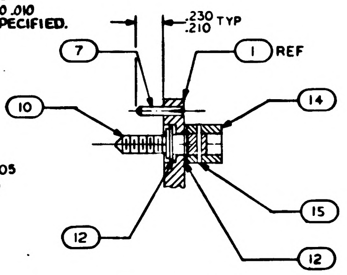
© REPLACES WORD DWG REV B



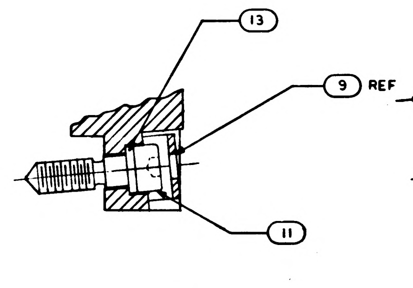


NOTES

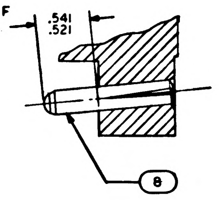
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL D 70327
2. ASSEMBLE FIND NUMBERS 2 3 4 AND 5 PER ND1002136
3. MARK PER ND1002019,(BLACK) .100/.140 HIGH AND SERIALIZE PER ND1002023
4. BOND FIND NOS. 19, 27, 28, & 29 TO FIND NO.1 PER ND 1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) .010 ABOVE TO .010 **BELOW PERIPHERAL SURFACES OF THE TRAY FRAME UNLESS OTHERWISE SPECIFIED.**
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION SEEPAGE NOT PERMISSIBLE.
7. COAT THREADS OF FIND NO.16 DURING FINAL ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NO'S. 16 & 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB.
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005
   ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071
   ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS
10. PROCURE PER PS 1007143
11. BOND FIND NO.20 INTO HOLES FOR 45A3J4-3 AND -17, AND 45A3J10-3 AND -17 PER ND1002004, TYPE I.
12. BOND FIND NUMBERS 21 AND 22 TO FIND NO.5 PER ND1002237.
13. BOND FIND NUMBER 25 TO FIND NUMBER 1 AND APPLY A THIN COAT OF ADHESIVE PER ND 1002187 OVER FIND NUMBER 25 AND THE ADJOINING AREA.
14. BOND FIND NO.24 ONTO FIND NO.25 AS PREPARED IN NOTE 13 PER ND 1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED)



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

		QUANTITY REQUIRED 021	QUANTITY REQUIRED 011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		–	1		1008651	FRAME	31
		–	1		1008608	WIRE LIST A A	30
		–	1		1008607	WIRING HARNESS C	29
		–	1		1008606	WIRING HARNESS B	28
		–	1		1008605	WIRING HARNESS A	27
		1	–		1008270	WIRE LIST A-A	26
		AR	AR		MIL-I-15126	MYLAR TAPE TYPE MFT 2.5	25
		1	1		1006712-3	RESISTOR, TEMP. SENS.-WAFER	24
		–	1		1010821-1	CONNECTOR, RECEPTACLE	23
		1	1		1008551	GASKET, CONNECTOR, TRAY	22
		1	1		1008552	GASKET, CONNECTOR, TRAY	21
		–	☒		1009563	WIRING DIAGRAM	REF
		☒	–		1009553	WIRING DIAGRAM	REF
		4	4		1008256	PIN, POLARIZING	20
		1	–		1015735	WIRING HARNESS A	19
		2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS 16995-11	SCREW CAP SOCKET HEAD	17
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	16
		36	–		MS171433	PIN, SPRING	15
		36	–		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		72	–		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		36	–		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		1010620-4	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		174	174		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		174	174		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	–		1008523	FRAME	1

LIST OF MATERIALS

1007573		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
Contract NAS 9-497
DRAWN DATE 30 Sep 64
CHECKED 7 Oct 64
APPROVAL 8 Oct 64
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 3

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007533
SCALE 1/1
WT
SHEET 1 OF 2

1007533 G

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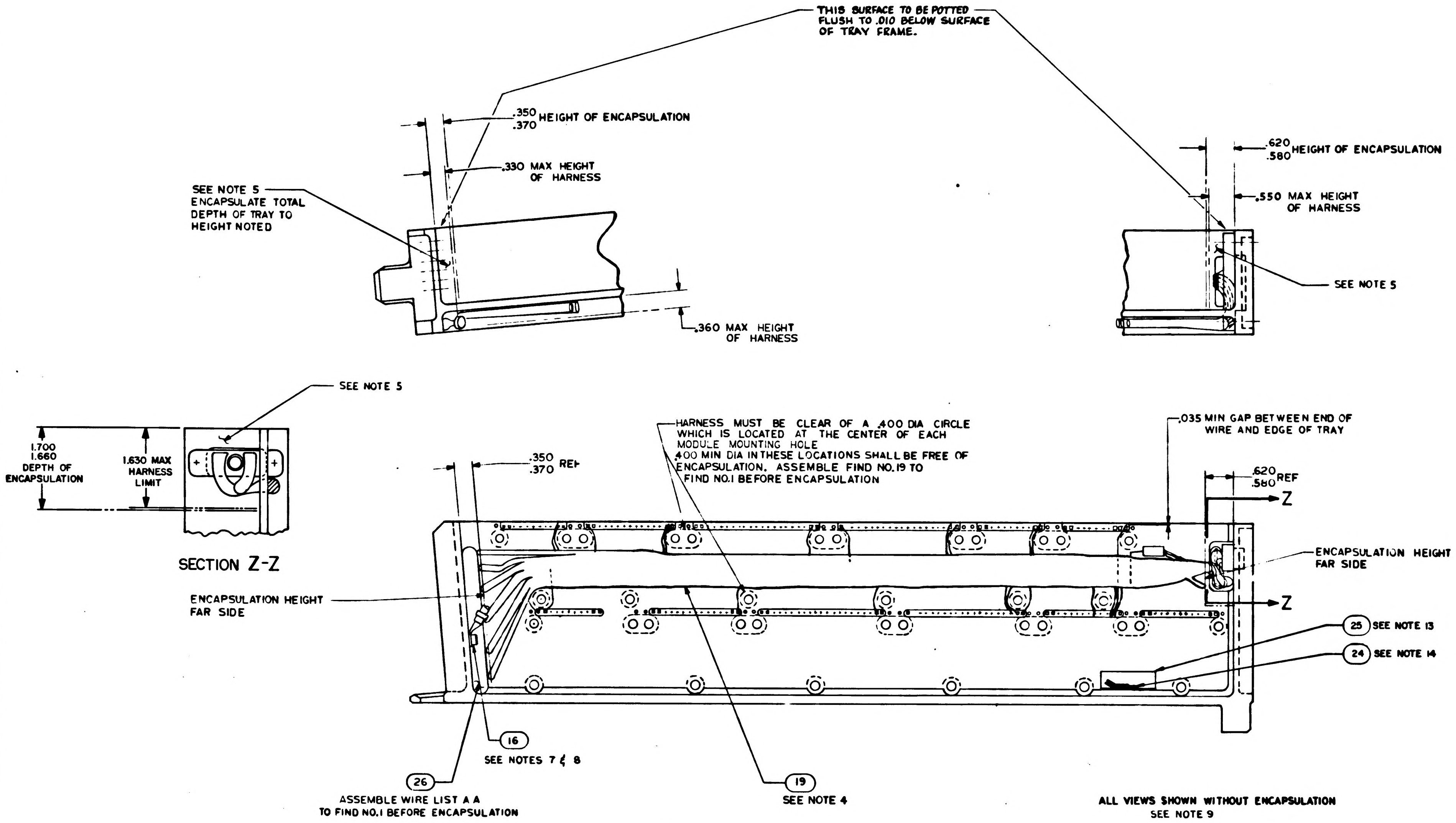
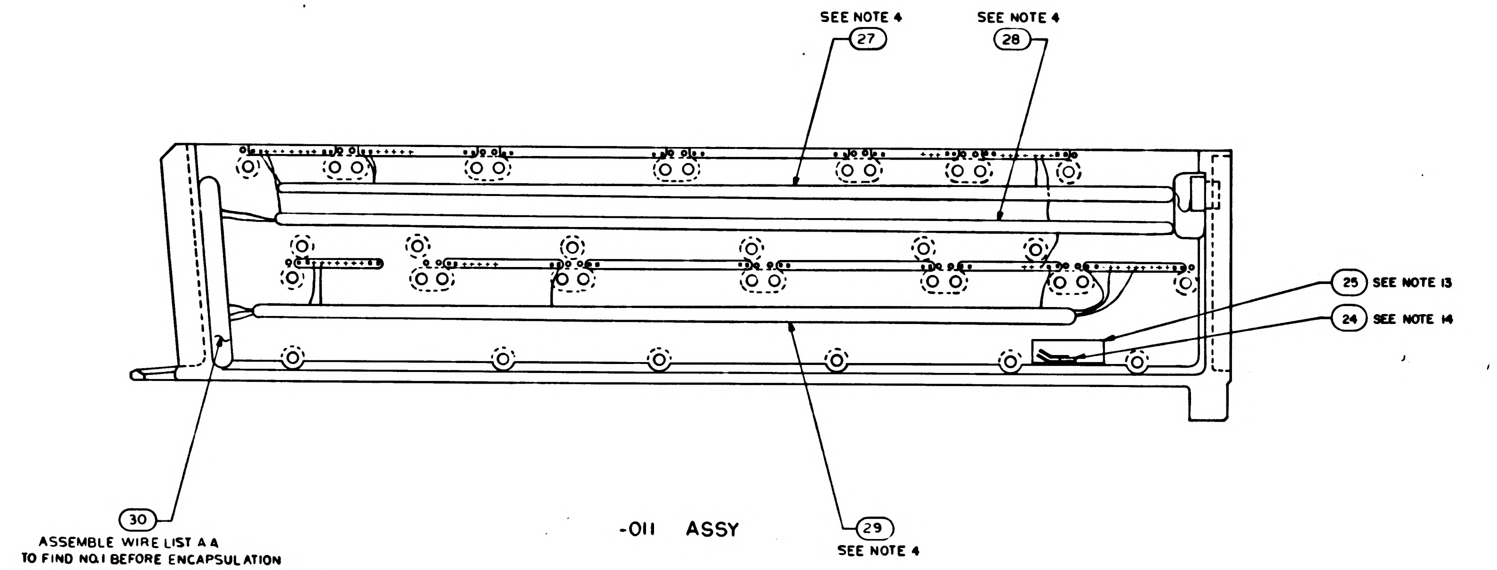
REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO	DATE	APPD
C		REPLACES WORL DWG REV B PER TDRR 3739			WK
D		REVISED PER TDRR 15160			
E		REVISED PER TDRR 5948	—	11 FEB 65	
F		REVISED PER TDRR 16267		15 FEB 65	WP
G		REVISED PER TDRR 17613		24 MAR 65	RJJ


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME.
.350
.370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5
SEE NOTE 5
1.700
1.660
DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT
SECTION Z-Z
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION, ASSEMBLE FIND NO.19 TO FIND NO.1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350
.370 REF
.620
.580 REF
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
25 SEE NOTE 13
24 SEE NOTE 14
16
SEE NOTES 7 & 8
26
ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
19
SEE NOTE 4

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9

-021 ASSY


SEE NOTE 4
27
SEE NOTE 4
28
25 SEE NOTE 13
24 SEE NOTE 14
30
ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
29
SEE NOTE 4

-011 ASSY

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN DATE
CHECKED 7 Oct 64
APPROVAL 8 OCT 64
APPROVAL 10-29-64
NASA APPROVAL 11-4-64
MIT APPROVAL 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 3

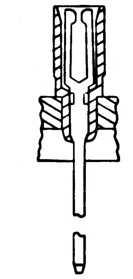
CODE IDENT NO
SIZE E
NASA DRAWING NO 1007533
SCALE 1/1
WT
SHEET 2 OF 2

1007533
G

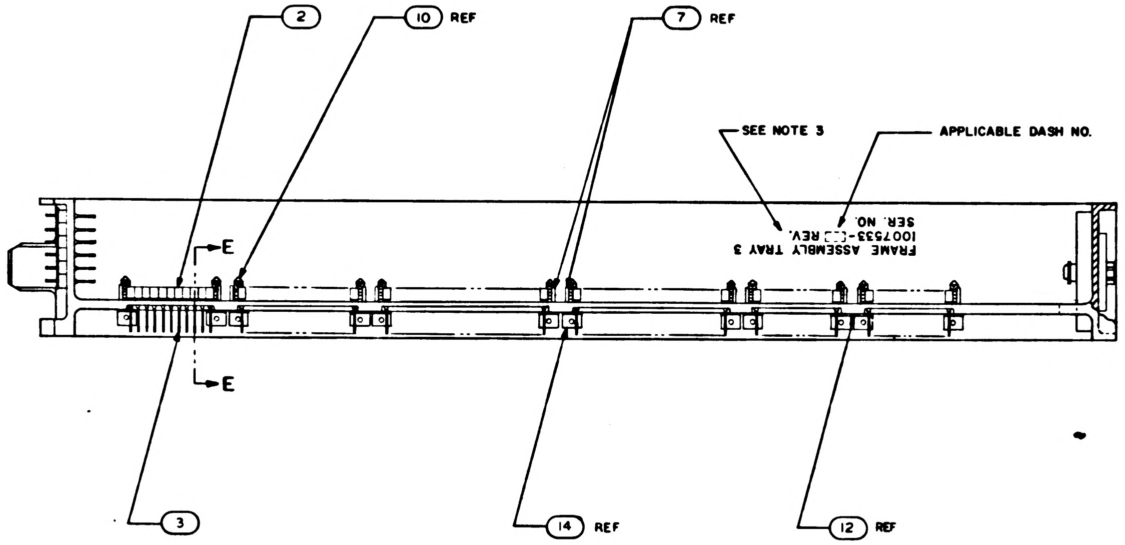
NOTICE – WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

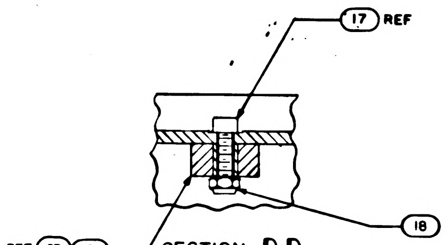
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
② C	REPLACES WORD DWG REV B PER TDRR 13939	11/9/64	WK
D	REVISED PER TDRR 15160	23 Dec 64	[illegible]
E	REVISED PER TDRR 15948	4-FEB-65	[illegible]
④ F	REVISED PER TDRR 16267	15 FEB 65	[illegible]
⑤ G	REVISED PER TDRR 17613	24 MAR 65	RJJ
H	REVISED PER TDRR 18690	4 MAY 65	[illegible]

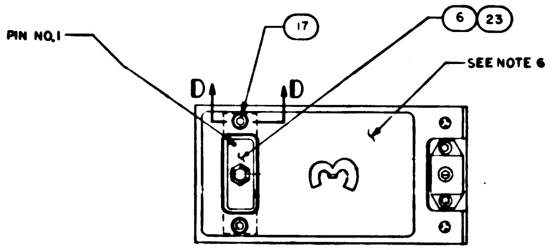


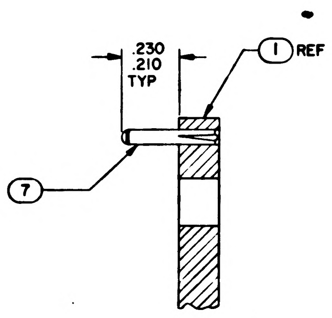
PARTIAL SECTION E-E
174 PLACES



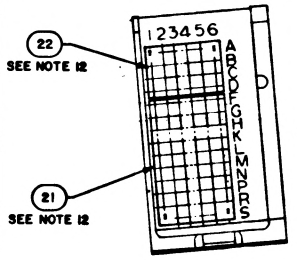


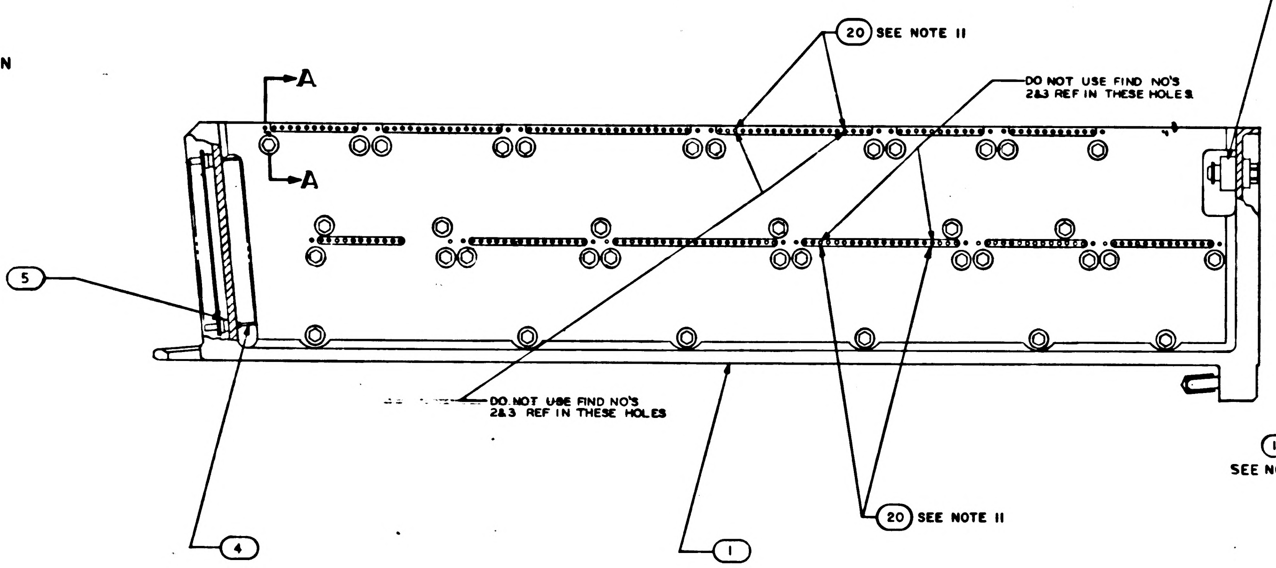
SECTION D-D
SCALE 2/1

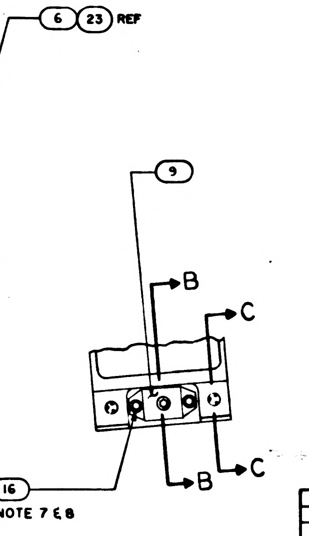




SECTION A-A
SCALE 4/1
-011 CONFIGURATION



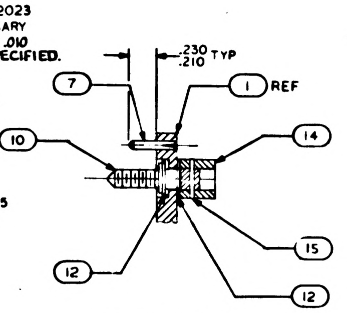

A
A
20 SEE NOTE 11
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES.
5
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
4
1
20 SEE NOTE 11



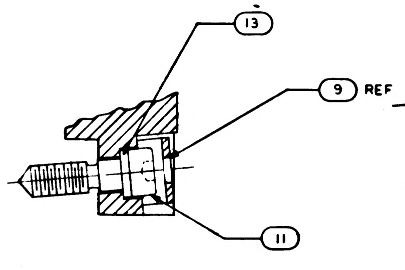
© REPLACES WORD DWG REV B

NOTES

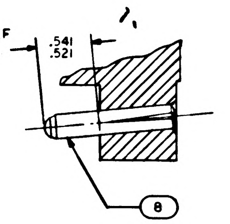
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL D 70327
2. ASSEMBLE FIND NUMBERS 2 3 4 AND 5 PER ND1002136
3. MARK PER ND1002019,(BLACK) .100/.140 HIGH AND SERIALIZE PER ND1002023
4. BOND FIND NOS. 19, 27, 28, & 29 TO FIND NO.1 PER ND 1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) .010 ABOVE TO .010 BELOW PERIPHERAL SURFACES OF THE TRAY FRAME UNLESS OTHERWISE SPECIFIED.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION SEEPAGE NOT PERMISSIBLE.
7. COAT THREADS OF FIND NO. 16 DURING FINAL ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NO'S. 16 & 17 TO FIND NO. 1 TO BE 5.0–5.5 IN. LB.
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005 ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071 ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS
10. PROCURE PER PS 1007143
11. BOND FIND NO.20 INTO HOLES FOR 45A3J4-3 AND -17, AND 45A3J10-3 AND -17 PER ND1002004, TYPE I.
12. BOND FIND NUMBERS 21 AND 22 TO FIND NO.5 PER ND1002237.
13. BOND FIND NUMBER 25 TO FIND NUMBER 1 AND APPLY A THIN COAT OF ADHESIVE PER ND 1002187 OVER FIND NUMBER 25 AND THE ADJOINING AREA.
14. BOND FIND NO. 24 ONTO FIND NO. 25 AS PREPARED IN NOTE 13 PER ND 1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED)



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

QUANTITY REQUIRED		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		–	1		1008651	FRAME	31
		–	1		1008608	WIRE LIST A A	30
		–	1		1008607	WIRING HARNESS C	29
		–	1		1008606	WIRING HARNESS B	28
		–	1		1008605	WIRING HARNESS A	27
		1	–		1008270	WIRE LIST A–A	26
		AR	AR		MIL-I-15126	MYLAR TAPE TYPE MFT 2.5	25
		1	1		1006712–3	RESISTOR, TEMP. SENS.–WAFER	24
		–	1		1010821-1	CONNECTOR, RECEPTACLE	23
		1	1		1008551	GASKET, CONNECTOR, TRAY	22
		1	1		1008552	GASKET, CONNECTOR, TRAY	21
		–	╳		1009563	WIRING DIAGRAM	REF
		╳	–		1009553	WIRING DIAGRAM	REF
		4	4		1008256	PIN, POLARIZING	20
		1	–		1015735	WIRING HARNESS A	19
		2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS 16995-11	SCREW CAP SOCKET HEAD	17
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	16
		36	–		MS 171433	PIN, SPRING	15
		36	–		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		72	–		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		36	–		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		MS 16556-604	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		174	174		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		174	174		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	–		1008523	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007573		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ±
DECIMALS ±.02
ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN DATE 30 Sep 64
CHECKED 7 Oct 64
APPROVAL 8 Oct 64
APPROVAL 11-20-64
NASA APPROVAL
MIT APPROVAL 4 Nov 64

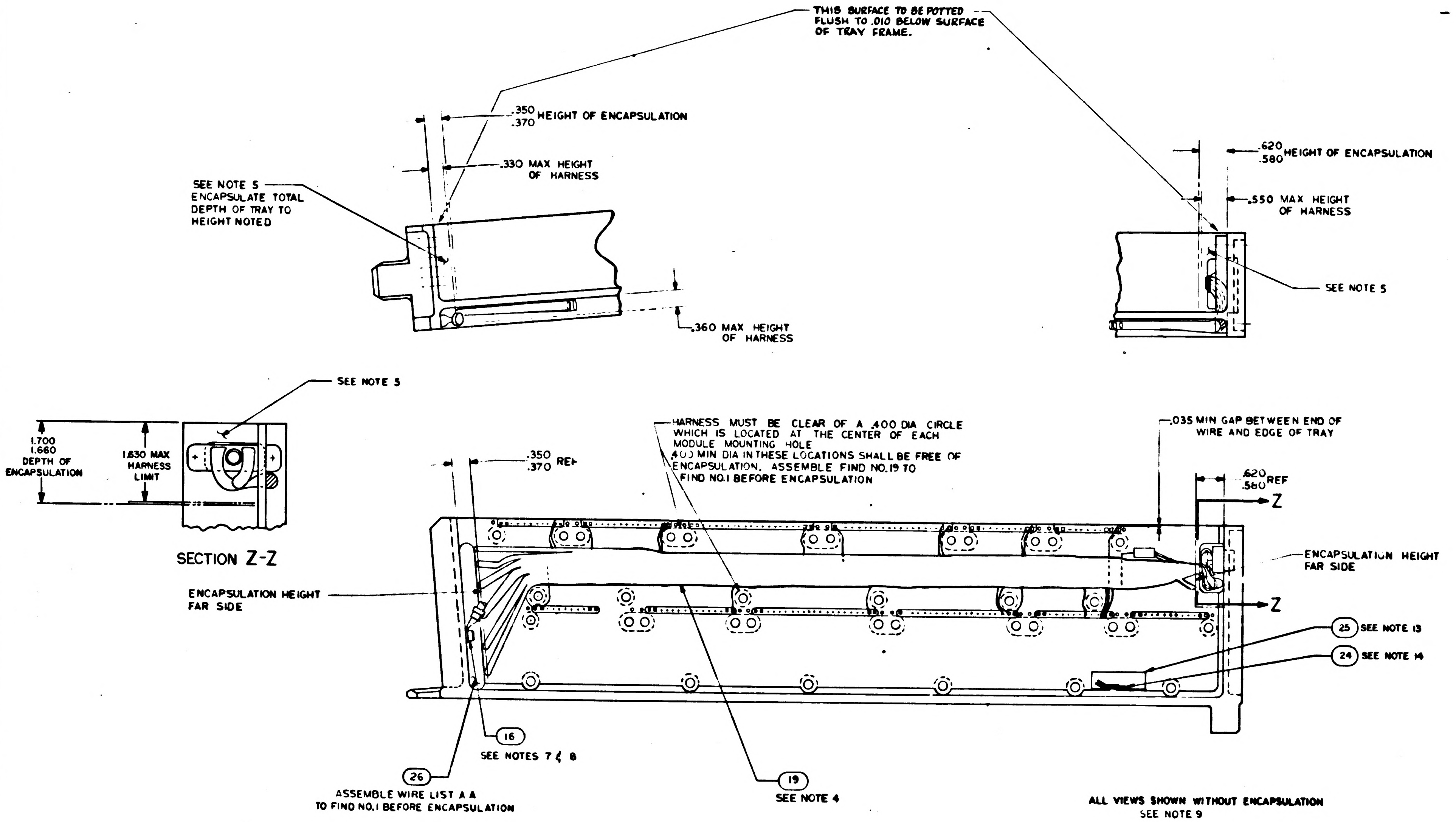
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 3

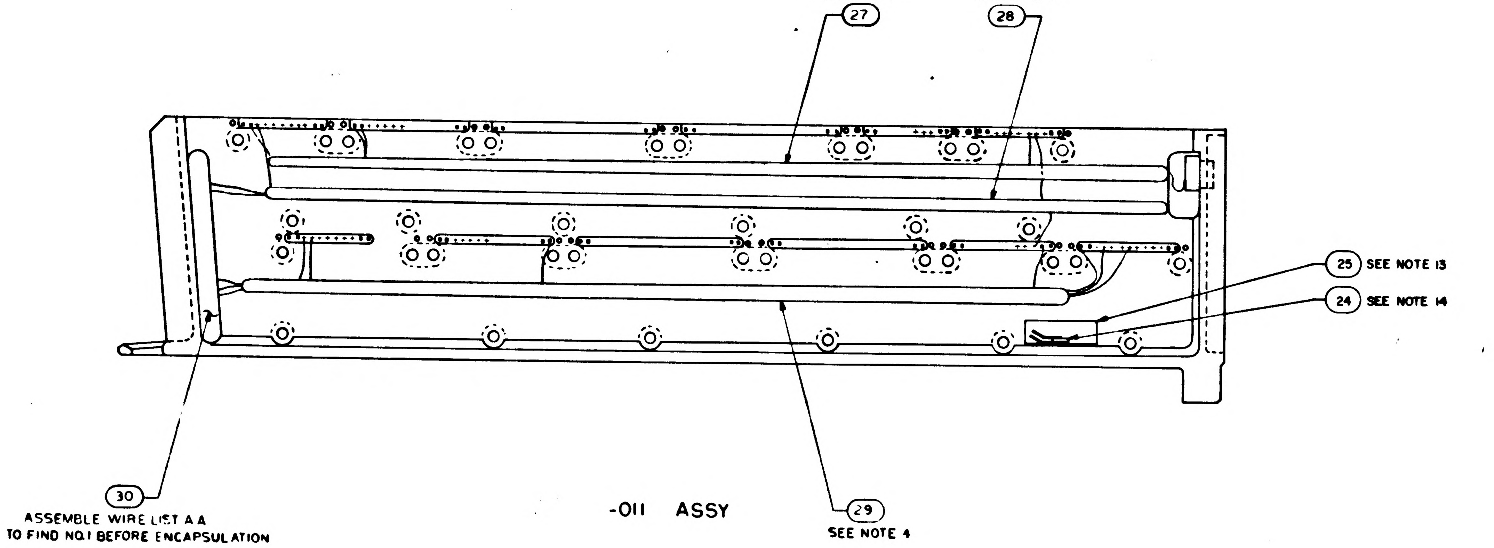
CODE IDENT NO
SIZE E
NASA DRAWING NO 1007533
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
C		REPLACES WORK DWG REV B PER TDRR 13739			
D		REVISED PER TDRR 15160			
E		REVISED PER TDRR 15948	—	11 FEB 65	
F		REVISED PER TDRR 16267		15 FEB 65	JWP
G		REVISED PER TDRR 17613		24 MAR 65	RJJ
H		REVISED PER TDRR 18690		4 MAY 65	W.T.


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME.
.350 .370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5
SEE NOTE 5
1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT
SECTION Z-Z
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO.19 TO FIND NO.1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350 .370 REF
.620 .580 REF
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
25 SEE NOTE 13
24 SEE NOTE 14
16 SEE NOTES 7 & 8
26 ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
19 SEE NOTE 4
ALL VIEWS SHOWN WITHOUT ENCAPSULATION SEE NOTE 9

-021 ASSY


SEE NOTE 4
27
SEE NOTE 4
28
25 SEE NOTE 13
24 SEE NOTE 14
30 ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
29 SEE NOTE 4

-011 ASSY

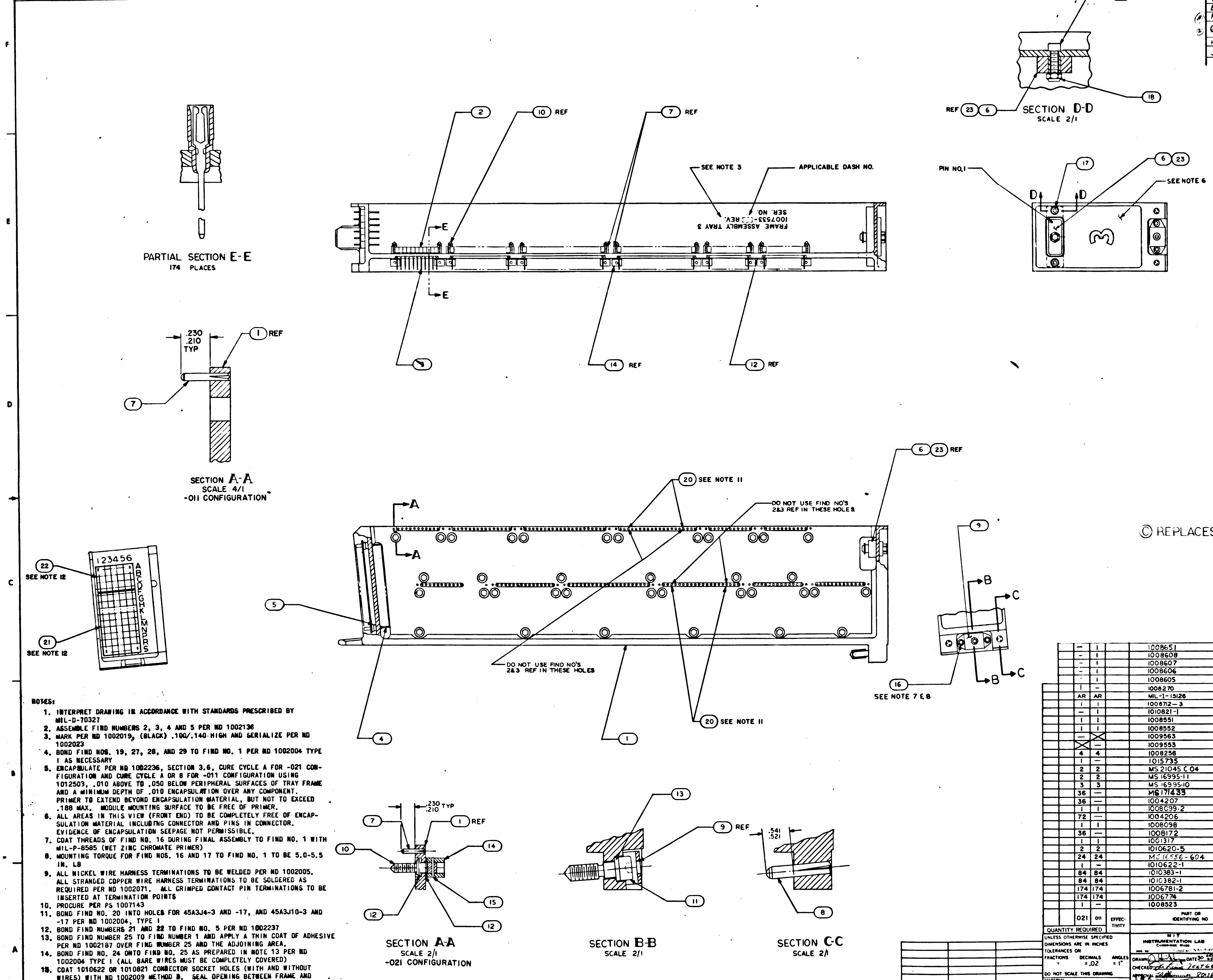
QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± — — ± — DO NOT SCALE THIS DRAWING	M I T INSTRUMENTATION LAB CAMBRIDGE MASS Contract NAS 9-4065	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
MATERIAL	DRAWN DATE CHECKED 7 OCT 64 APPROVAL 8 OCT 64 APPROVAL	FRAME ASSEMBLY TRAY 3
HEAT TREATMENT	NASA APPROVAL 11-4-64	CODE IDENT NO — SIZE E — NASA DRAWING NO. 1007533
FINAL FINISH	MIT APPROVAL W. Kuffer 4/14/64	SCALE 1/1 — WT — SHEET 2 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDPR 13939	11/10/64	WK
D	REVISED PER TDRR 15160	29 Dec '64	
E	REVISED PER TDRR 15948	11-FEB-65	CW
F	REVISED PER TDRR 16267	15 FEB 65	
G	REVISED PER TDRR 17613	24 MAR 65	RJJ WT
H	REVISED PER TDRR 18690	4 MAY 65	EF
J	REVISED PER TDRR 18691	6 MAY 65	JJJ EF


PARTIAL SECTION E-E
174 PLACES
2
10 REF
7 REF
SEE NOTE 3
APPLICABLE DASH NO.
FRAME ASSEMBLY TRAY 3
1007533-( ) REV.
SER. NO.
E
E
3
14 REF
12 REF
17 REF
18
REF 23 6
SECTION D-D
SCALE 2/1
PIN NO.1
17
6 23
SEE NOTE 6
D
D
.230
.210
TYP
1 REF
7
SECTION A-A
SCALE 4/1
-011 CONFIGURATION
22
SEE NOTE 12
21
SEE NOTE 12
123456
ABCDEFGHKLMNPRS
20 SEE NOTE 11
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
6 23 REF
A
A
5
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
4
1
20 SEE NOTE 11
9
B
C
B
C
16
SEE NOTE 7 & 8
© REPLACES WORD DWG REV B
7
.230
.210 TYP
1 REF
10
14
15
12
12
SECTION A-A
SCALE 2/1
-021 CONFIGURATION
13
9 REF
11
SECTION B-B
SCALE 2/1
.541
.521
8
SECTION C-C
SCALE 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND 1002136
3. MARK PER ND 1002019, (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023
4. BOND FIND NOS. 19, 27, 28, AND 29 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION SEEPAGE NOT PERMISSIBLE.
7. COAT THREADS OF FIND NO. 16 DURING FINAL ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NOS. 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS
10. PROCURE PER PS 1007143
11. BOND FIND NO. 20 INTO HOLES FOR 45A3J4-3 AND -17, AND 45A3J10-3 AND -17 PER ND 1002004, TYPE I
12. BOND FIND NUMBERS 21 AND 22 TO FIND NO. 5 PER ND 1002237
13. BOND FIND NUMBER 25 TO FIND NUMBER 1 AND APPLY A THIN COAT OF ADHESIVE PER ND 1002187 OVER FIND NUMBER 25 AND THE ADJOINING AREA.
14. BOND FIND NO. 24 ONTO FIND NO. 25 AS PREPARED IN NOTE 13 PER ND 1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED)
15. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD B. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.

		–	1		1008651	FRAME	31
		–	1		1008608	WIRE LIST AA	30
		–	1		1008607	WIRING HARNESS C	29
		–	1		1008606	WIRING HARNESS B	28
		–	1		1008605	WIRING HARNESS A	27
		1	–		1008270	WIRE LIST A–A	26
		AR	AR		MIL-I-15126	MYLAR TAPE TYPE MFT 2.5	25
		1	1		1006712–3	RESISTOR, TEMP SENS.–WAFER	24
		–	1		1010821-1	CONNECTOR, RECEPTACLE	23
		1	1		1008551	GASKET, CONNECTOR, TRAY	22
		1	1		1008552	GASKET, CONNECTOR, TRAY	21
		–	☒		1009563	WIRING DIAGRAM	REF
		☒	–		1009553	WIRING DIAGRAM	REF
		4	4		1008256	PIN, POLARIZING	20
		1	–		1015735	WIRING HARNESS A	19
		2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS 16995-11	SCREW CAP SOCKET HEAD	17
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	16
		36	–		MS171433	PIN, SPRING	15
		36	–		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		72	–		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		36	–		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		MS 16556-604	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		174	174		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		174	174		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	–		1008523	FRAME	1
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
QUANTITY REQUIRED					LIST OF MATERIALS		

1007573		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN DATE 30 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL
MIT APPROVAL 4 MAY 65

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

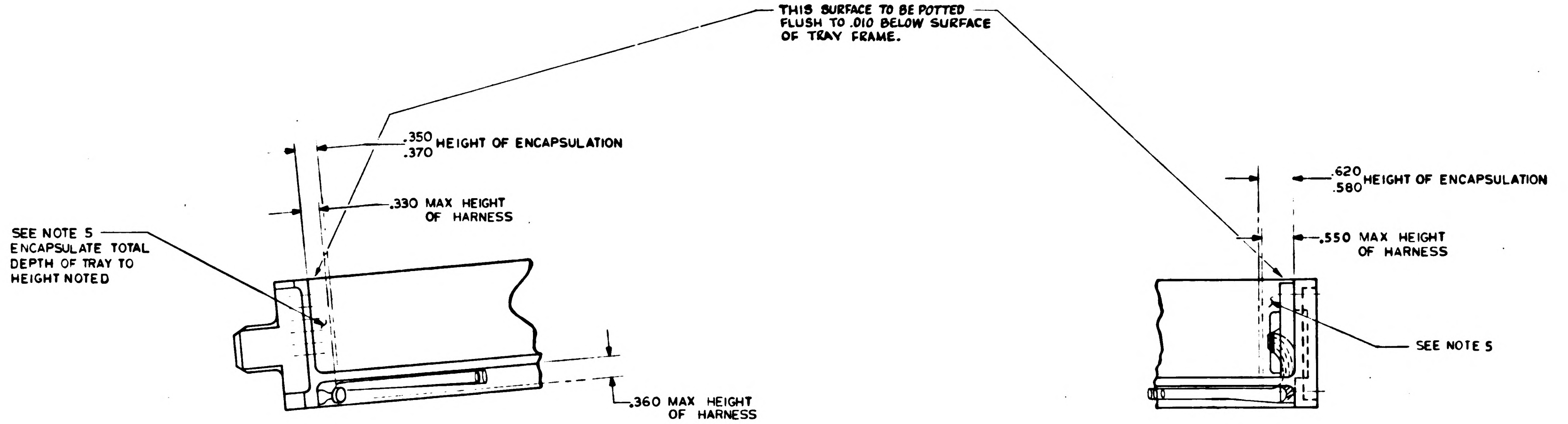
FRAME ASSEMBLY
TRAY 3

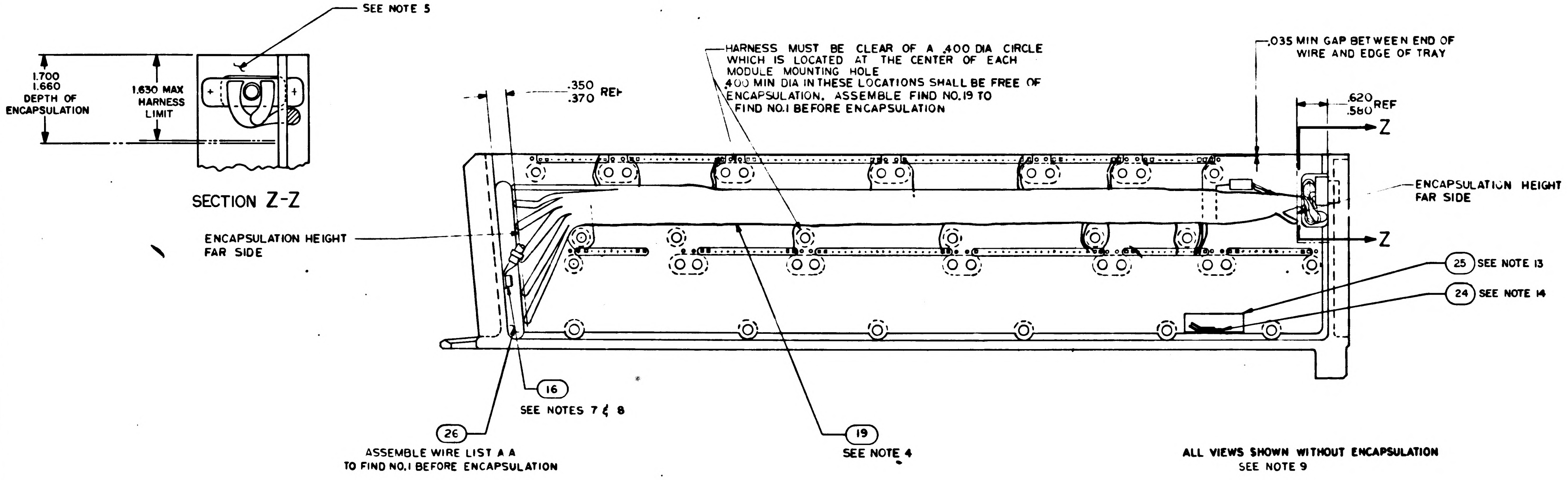
CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO 1007533
SCALE 1/1
WT
SHEET 1 OF 2

1007533 J

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		PEPLACES WORD DWG REV B PER TDRR 13739		11/4/64	WK
D		REVISED PER TDRR 15160			
E		REVISED PER TDRR 15948	—	11 FEB 65	CW
F		REVISED PER TDRR 16267		15 FEB 65	JWP
G		REVISED PER TDRR 17613		26 MAR 65	RJJ W.L.
H		REVISED PER TDRR 18690		4 MAY 65	W.B. E.F.
J		REVISED PER TDRR 18691		5 MAY 65	JJ E.F.

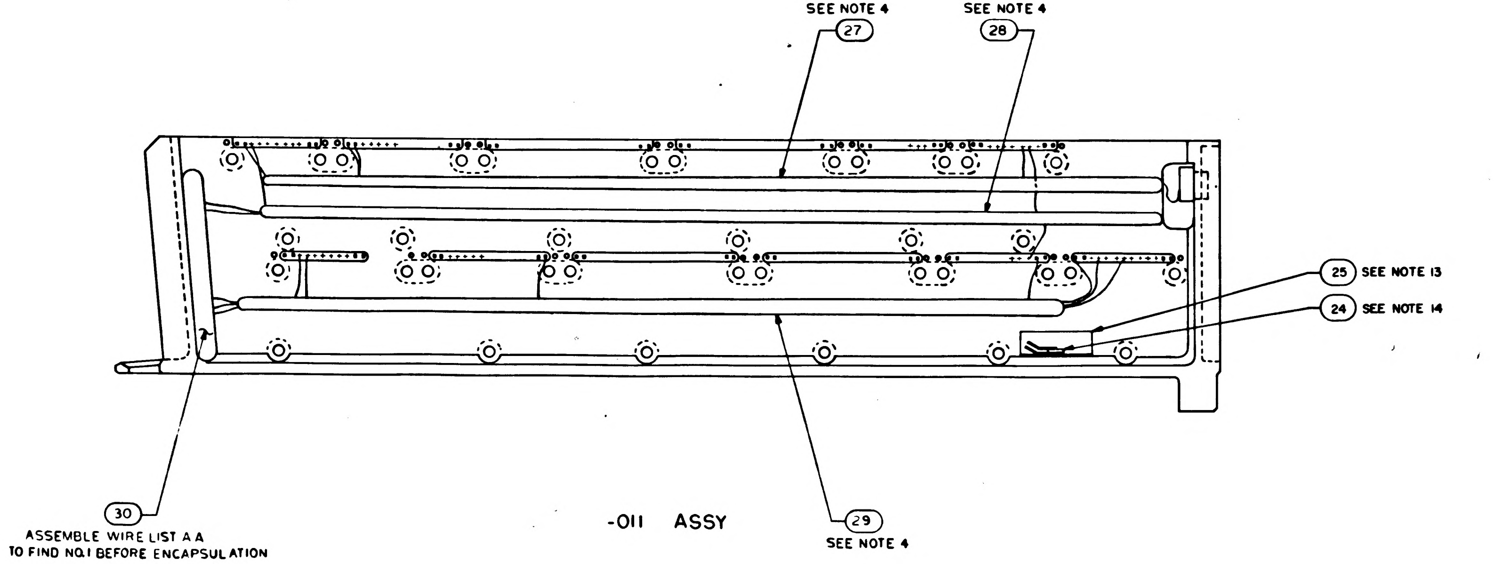

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME.
.350 .370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5


SEE NOTE 5
1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE .400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO.19 TO FIND NO.1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350 .370 REF
.620 .580 REF
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
25 SEE NOTE 13
24 SEE NOTE 14
16 SEE NOTES 7 & 8
26 ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
19 SEE NOTE 4

SECTION Z-Z

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9

-021 ASSY


SEE NOTE 4 27
SEE NOTE 4 28
25 SEE NOTE 13
24 SEE NOTE 14
30 ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
29 SEE NOTE 4

-011 ASSY

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
LIST OF MATERIALS			

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-4065
DRAWN DATE
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-29-64
NASA APPROVAL 11-4-64
MIT APPROVAL 4 NOV 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

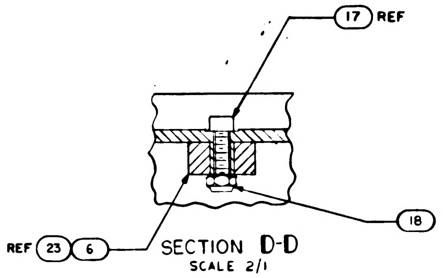
FRAME ASSEMBLY
TRAY 3

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1007533
SCALE 1/1
WT
SHEET 2 OF 2

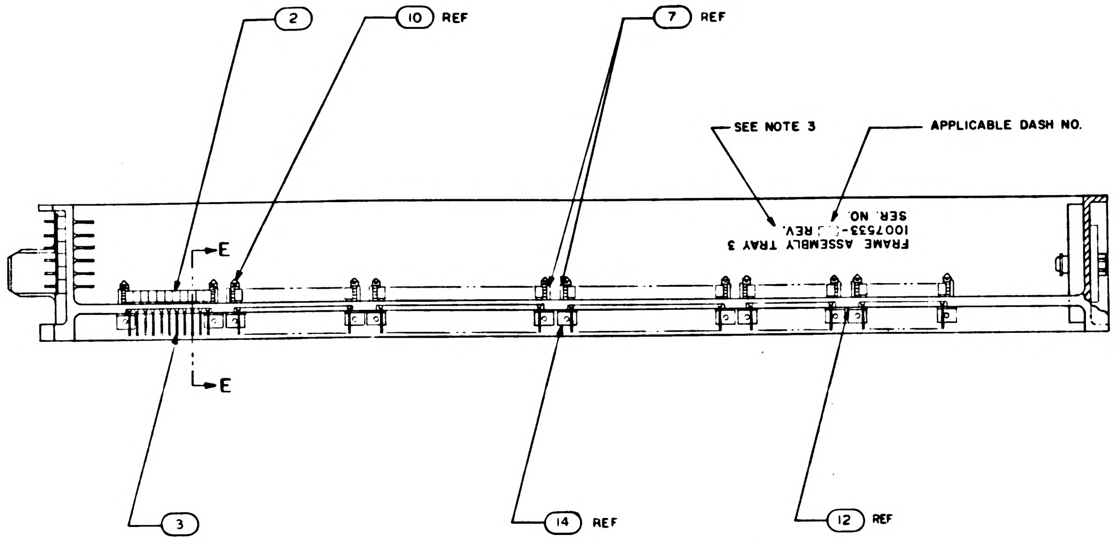
1007533

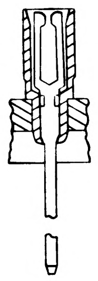
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939		WK
D	REVISED PER TDRR 15160	29 Dec 64	WK
E	REVISED PER TDRR 15948	11 FEB 65	
F	REVISED PER TDRR 16267	15 FEB 65	
G	REVISED PER TDRR 17613	24 MAR 65	RJJ
H	REVISED PER TDRR 18690	4 MAY 65	
J	REVISED PER TDRR 18691	65	
K	REVISED PER TDRR 18695	11 MAY 65	A.H.

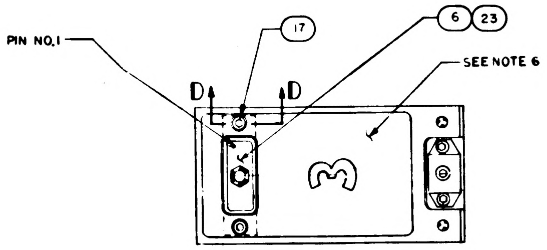


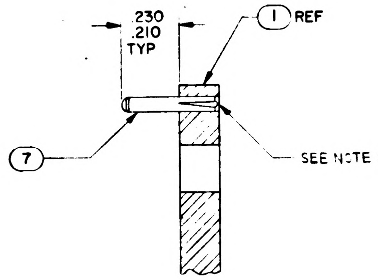
SECTION D-D
SCALE 2/1



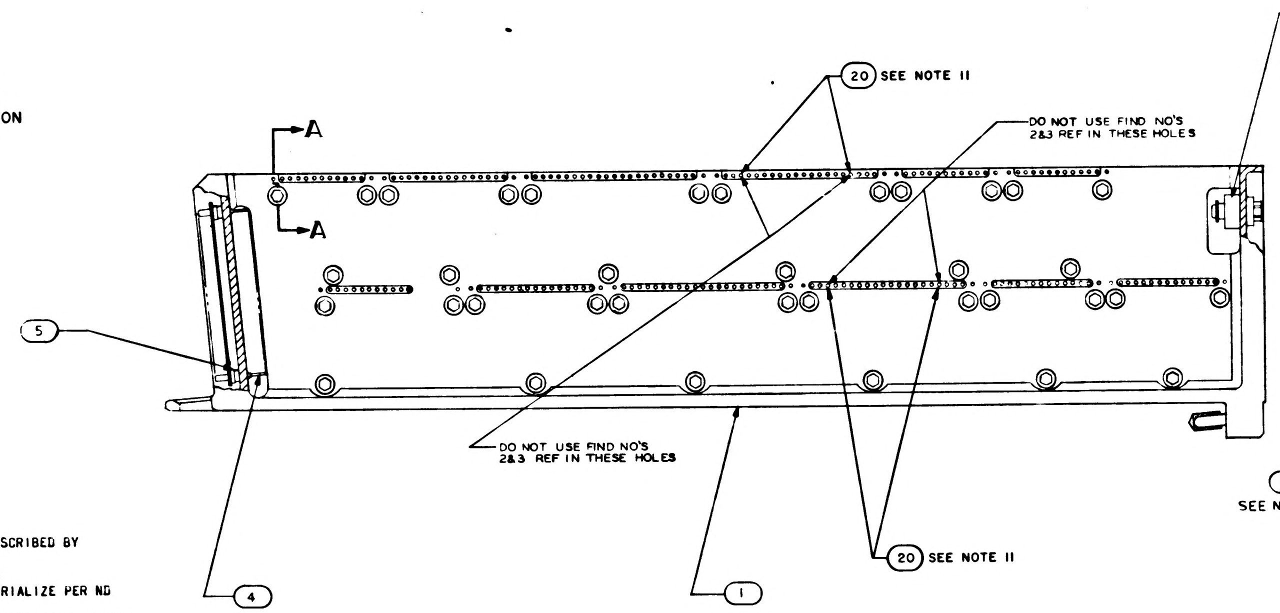


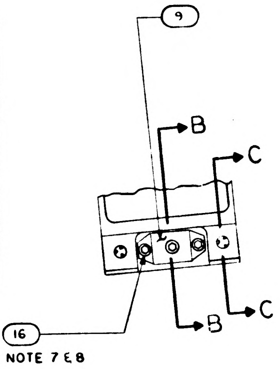
PARTIAL SECTION E-E
174 PLACES



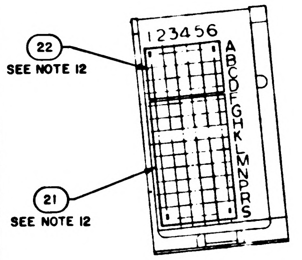


SECTION A-A
SCALE 4/1
-011 CONFIGURATION


20 SEE NOTE 11
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
A
A
5
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
4
1
20 SEE NOTE 11

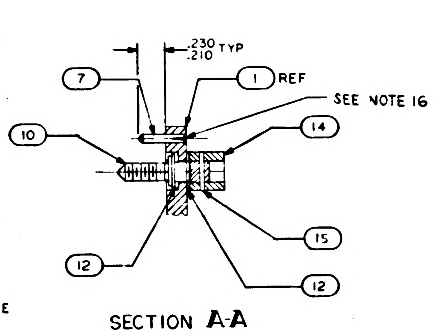


C REPLACES WORD DWG REV B

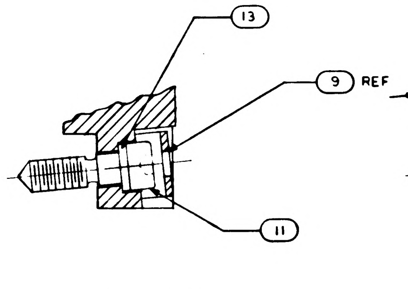


NOTES:

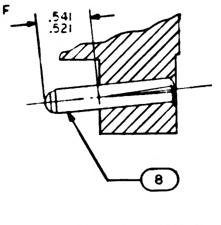
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND 1002136
3. MARK PER ND 1002019, (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023
4. BOND FIND NOS. 19, 27, 28, AND 29 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION SEEPAGE NOT PERMISSIBLE.
7. COAT THREADS OF FIND NO. 16 DURING FINAL ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NOS. 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS
10. PROCURE PER PS 1007143
11. BOND FIND NO. 20 INTO HOLES FOR 45A3J4-3 AND -17, AND 45A3J10-3 AND -17 PER ND 1002004, TYPE I
12. BOND FIND NUMBERS 21 AND 22 TO FIND NO. 5 PER ND 1002237
13. BOND FIND NUMBER 25 TO FIND NUMBER 1 AND APPLY A THIN COAT OF ADHESIVE PER ND 1002187 OVER FIND NUMBER 25 AND THE ADJOINING AREA.
14. BOND FIND NO. 24 ONTO FIND NO. 25 AS PREPARED IN NOTE 13 PER ND 1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED)
15. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.
16. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

QUANTITY REQUIRED 021	QUANTITY REQUIRED 011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
—	1		1008651	FRAME	31
—	1		1008608	WIRE LIST AA	30
—	1		1008607	WIRING HARNESS C	29
—	1		1008606	WIRING HARNESS B	28
—	1		1008605	WIRING HARNESS A	27
1	—		1008270	WIRE LIST A-A	26
AR	AR		MIL-I-15126	MYLAR TAPE TYPE MFT 2.5	25
1	1		1006712-3	RESISTOR, TEMP SENS.-WAFER	24
—	1		1010821-1	CONNECTOR, RECEPTACLE	23
1	1		1008551	GASKET, CONNECTOR, TRAY	22
1	1		1008552	GASKET, CONNECTOR, TRAY	21
—	X		1009563	WIRING DIAGRAM	REF
X	—		1009553	WIRING DIAGRAM	REF
4	4		1008256	PIN, POLARIZING	20
1	—		1015735	WIRING HARNESS A	19
2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	18
2	2		MS 16995-11	SCREW CAP SOCKET HEAD	17
3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	16
36	—		MS 171433	PIN, SPRING	15
36	—		1004207	DRIVE CYLINDER	14
1	1		1008099-2	WASHER	13
72	—		1004206	WASHER, THRUST	12
1	1		1008098	SCREW, SOCKET HEAD	11
36	—		1008172	SCREW, JACK	10
1	1		1001317	RETAINER, JACK SCREW	9
2	2		1010620-5	PIN, GUIDE	8
24	24		MS 16556-604	PIN, GUIDE	7
1	—		1010622-1	CONNECTOR, RECEPTACLE	6
84	84		1010383-1	INSULATOR, WRAPOST MALE	5
84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
174	174		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
174	174		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
1	—		1008523	FRAME	1

LIST OF MATERIALS

K
1007533

1007573		
NEXT ASSY	USED ON	APPLICABLE DASH NO
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN DATE 30 64
CHECKED 7 OCT 64
APPROVAL 20 OCT 64
APPROVAL
NASA APPROVAL
MIT APPROVAL

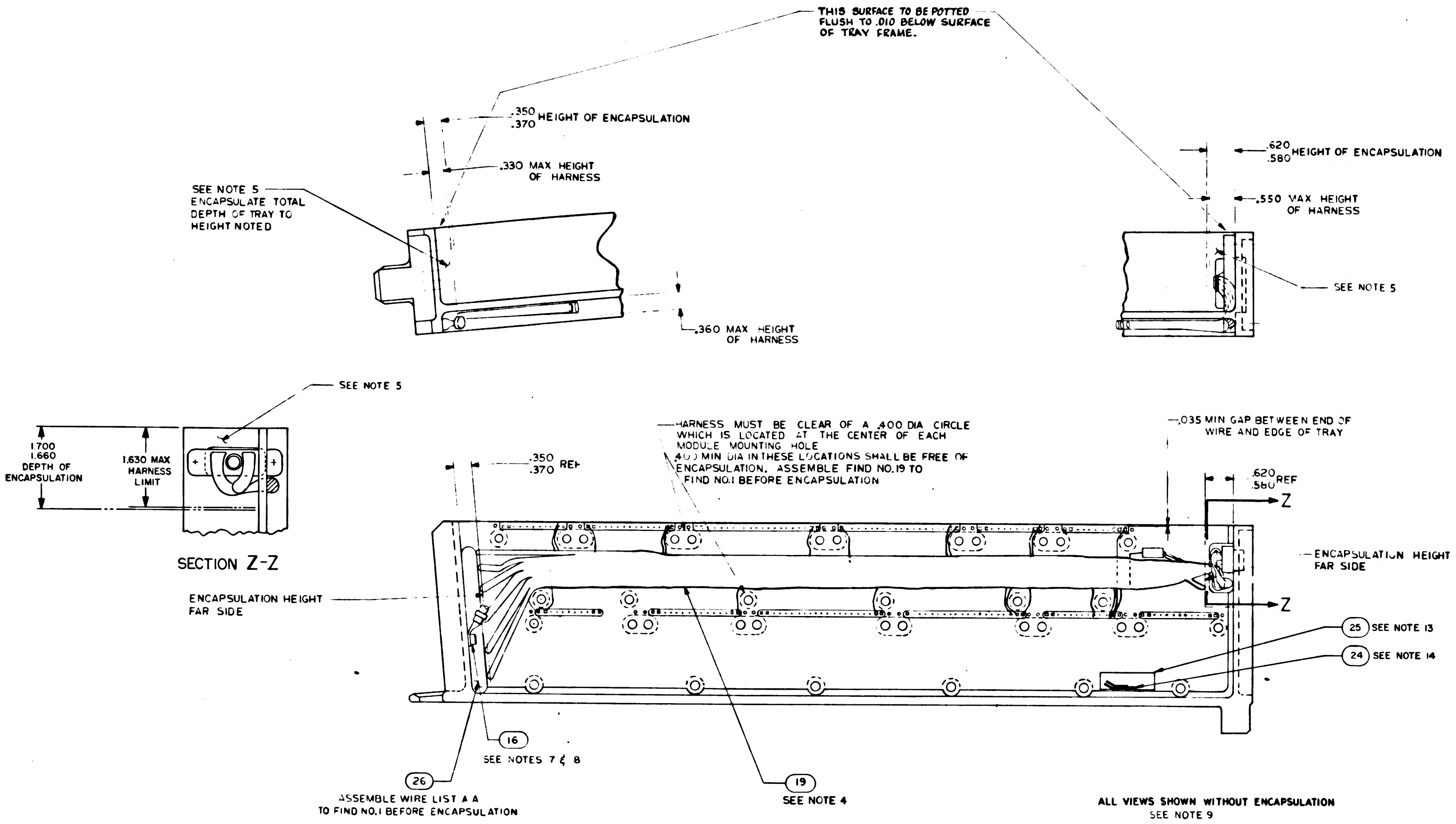
MANNED SPACECRAFT CENTER
HOUSTON TEXAS

FRAME ASSEMBLY
TRAY 3

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007533
SCALE 1/1
WT
SHEET 1 OF 2

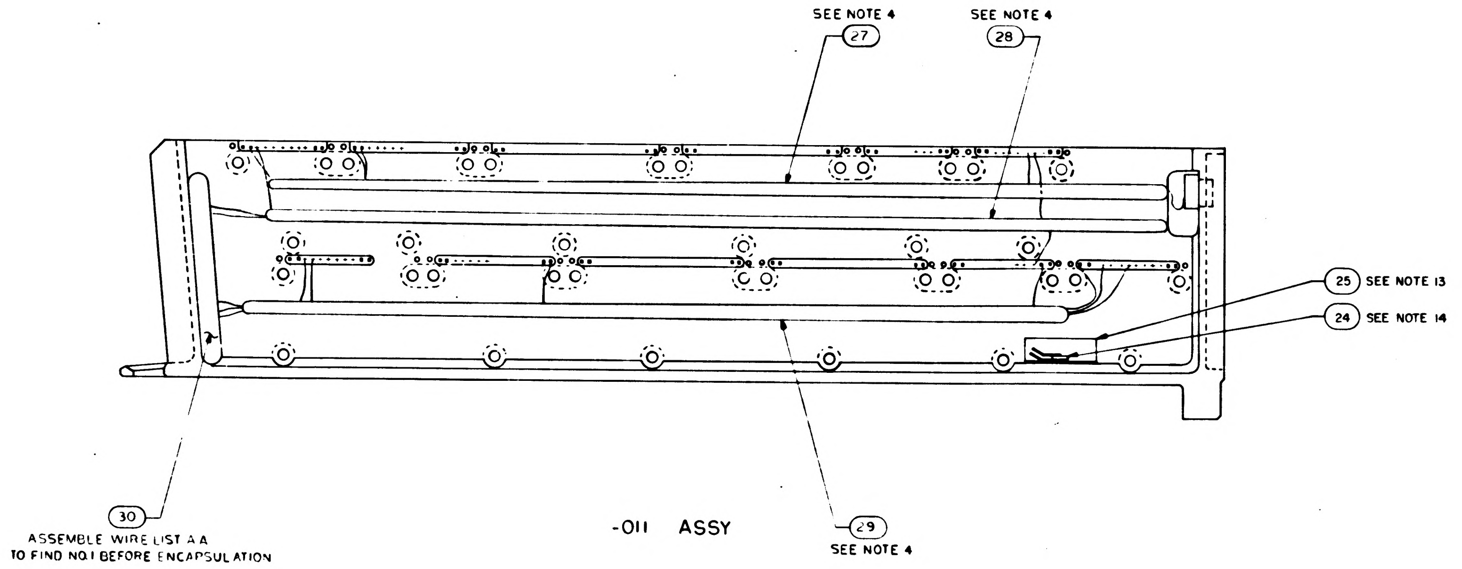
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO	DATE	APPD
C		REPLACES WORK DWG REV B PER TDRR 12739			
D		REVISED PER TDRR 15160			
E		REVISED PER TDRR 15948	—	11 FEB 65	
F		REVISED PER TDRR 16267		15 FEB 65	
G		REVISED PER TDRR 17613		24 MAR 65	RJJ
H		REVISED PER TDRR 18690		4 MAY 65	
J		REVISED PER TDRR 18691		5 MAY 65	
K		REVISED PER TDRR 18695		11 MAY 65	A N.


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME.
.350 .370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5
SEE NOTE 5
1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT
SECTION Z-Z
.350 .370 REF
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE .400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO.19 TO FIND NO.1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.620 .580 REF
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
25 SEE NOTE 13
24 SEE NOTE 14
16 SEE NOTES 7 & 8
26 ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
19 SEE NOTE 4

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9

-021 ASSY


SEE NOTE 4 27
SEE NOTE 4 28
25 SEE NOTE 13
24 SEE NOTE 14
30 ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
29 SEE NOTE 4

-011 ASSY

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
LIST OF MATERIALS			

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

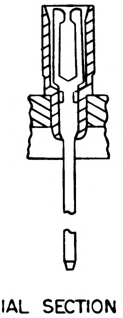
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

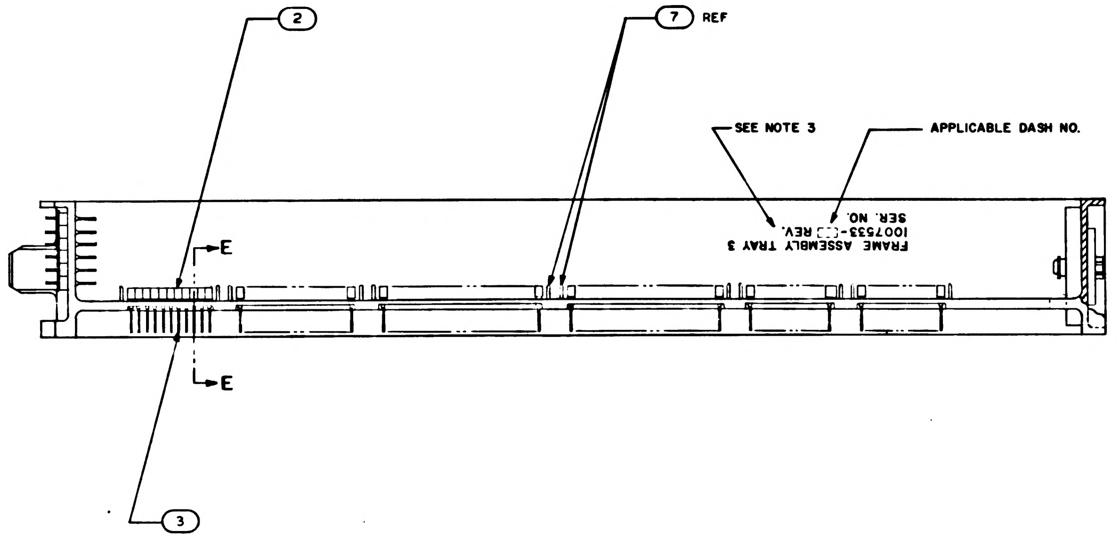
FRAME ASSEMBLY
TRAY 3

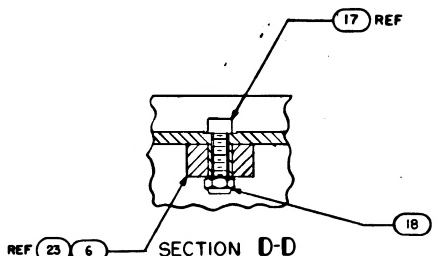
CODE IDENT NO	SIZE	NASA DRAWING NO
80230	E	1007533
SCALE 1/1	WT	SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

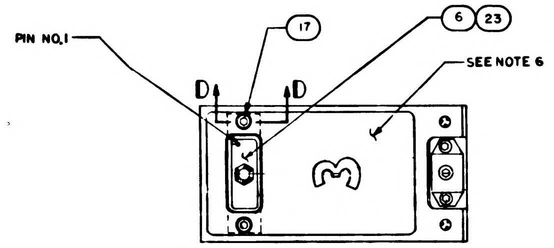
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES W[illegible] PER TDRR 13739	[illegible]	[illegible]
D	REVISED PER TDRR 15160	29 Dec '64	[illegible]
E	REVISED PER TDRR 5948	[illegible]	[illegible]
F	REVISED PER TDRR 16267	5 FEB 65	[illegible]
G	REVISED PER TDRR 17613	24 MAR 65	RJJ
H	REVISED PER TDRR 18690	[illegible]	[illegible]
J	REVISED PER TDRR 18691	[illegible]	[illegible]
K	REVISED PER TDRR 18695	[illegible] 65	[illegible]
L	REVISED PER TDRR 20[illegible]9	9 [illegible] 65	[illegible]

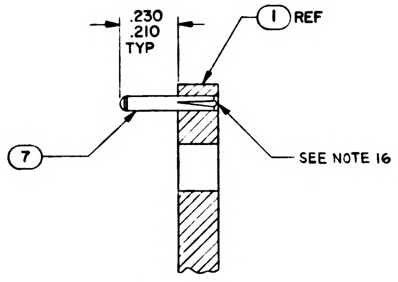

PARTIAL SECTION E-E
174 PLACES



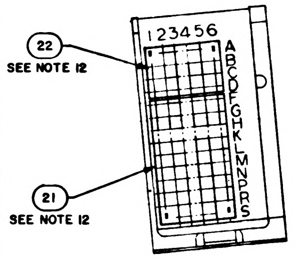


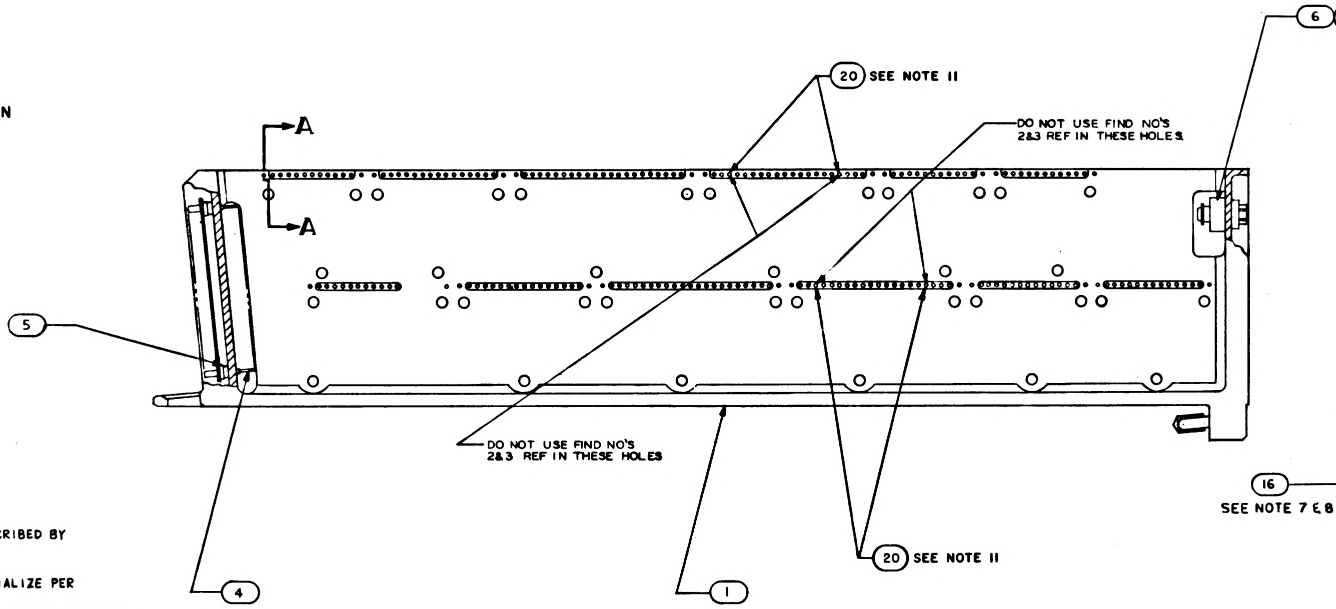
SECTION D-D
SCALE 2/1

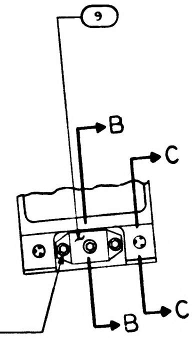




SECTION A-A
SCALE 4/1
-011 CONFIGURATION




6 23 REF
20 SEE NOTE 11
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
A
A
5
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
20 SEE NOTE 11
4
1

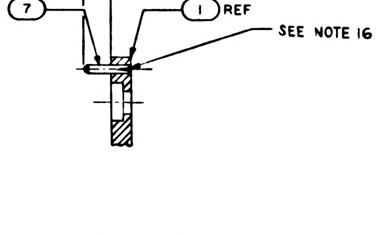


SEE NOTE 7 & 8

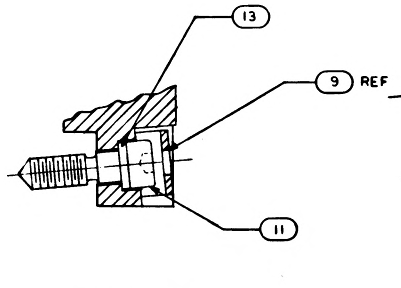
© REPLACES WORD DWG REV B

NOTES:

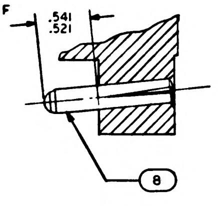
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND1002136.
3. MARK PER ND1002019, (BLACK) .100/.140 HIGH AND SERIALIZE PER ND1002023.
4. BOND FIND NUMBERS 19, 27, 28 AND 29 TO FIND NO. 1 PER ND1002004 TYPE I AS NECESSARY.
5. ENCAPSULATE PER ND1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012563, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION SEEPAGE NOT PERMISSIBLE.
7. COAT THREADS OF FIND NO. 16 DURING FINAL ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER).
8. MOUNTING TORQUE FOR FIND NUMBERS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB.
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
10. PROCURE PER PS1007143.
11. BOND FIND NO. 20 INTO HOLES FOR 45A3J4-3 AND -17, AND 45A3J10-3 AND -17 PER ND1002004, TYPE I.
12. BOND FIND NUMBERS 21 AND 22 TO FIND NO. 5 PER ND1002237.
13. BOND FIND NUMBER 25 TO FIND NUMBER 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NUMBER 25 AND THE ADJOINING AREA.
14. BOND FIND NO. 24 ONTO FIND NO. 25 AS PREPARED IN NOTE 13 PER ND1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED).
15. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND1002004 TYPE I.
16. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

QUANTITY REQUIRED					PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		021	011	EFFECTIVITY			
		—	1		1008651	FRAME	31
		—	1		1008608	WIRE LIST AA	30
		—	1		1008607	WIRING HARNESS C	29
		—	1		1008606	WIRING HARNESS B	28
		—	1		1008605	WIRING HARNESS A	27
		1	—		1008270	WIRE LIST A—A	26
		AR	AR		MIL-I-15126	MYLAR TAPE TYPE MFT 2.5	25
		1	1		1006712—3	RESISTOR, TEMP. SENS.—WAFER	24
		—	1		1010821-1	CONNECTOR, RECEPTACLE	23
		1	1		1008551	GASKET, CONNECTOR, TRAY	22
		1	1		1008552	GASKET, CONNECTOR, TRAY	21
		—	╳		1009563	WIRING DIAGRAM	REF
		╳	—		1009553	WIRING DIAGRAM	REF
		4	4		1008256	PIN, POLARIZING	20
		1	—		1015735	WIRING HARNESS A	19
		2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS 16995-11	SCREW CAP SOCKET HEAD	17
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	16
		~~36~~	—		~~MS171435~~	~~PIN, SPRING~~	~~15~~
		~~36~~	—		~~1004207~~	~~DRIVE CYLINDER~~	~~14~~
		1	1		1008099-2	WASHER	13
		~~72~~	—		~~1004206~~	~~WASHER, THRUST~~	~~12~~
		1	1		1008098	SCREW, SOCKET HEAD	11
		~~36~~	—		~~1008172~~	~~SCREW, JACK~~	~~10~~
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		MS 16556-604	PIN, GUIDE	7
		1	—		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		174	174		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		174	174		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	—		1008523	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007573		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN DATE 30 [illegible] 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

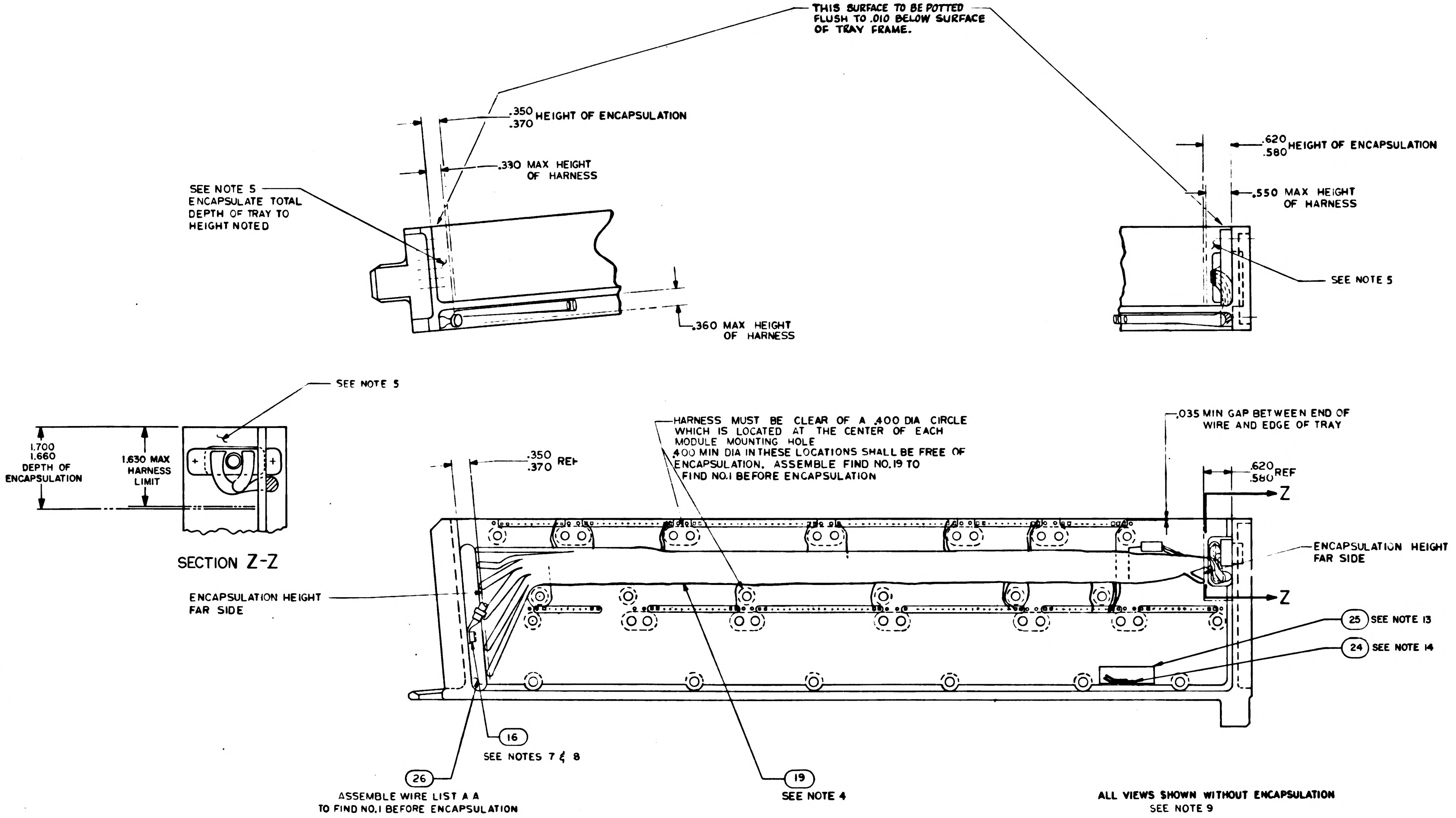
FRAME ASSEMBLY
TRAY 3

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007533
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

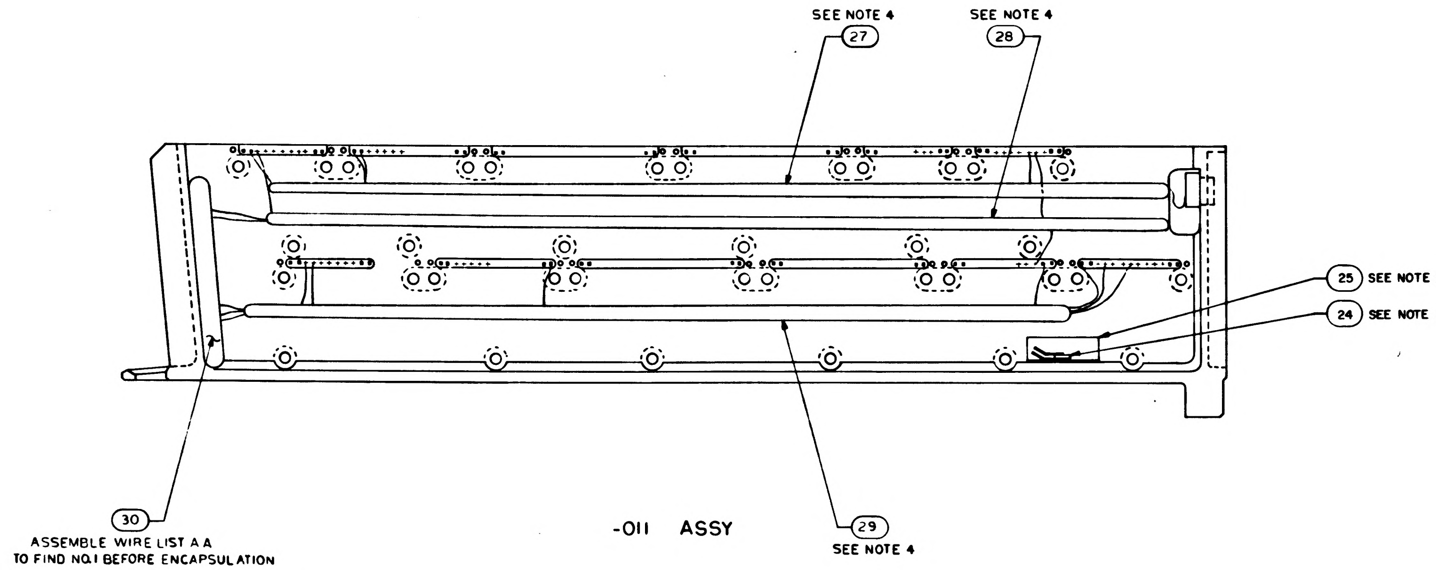
REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		REPLACES WORK DWG REV B PER TDRR 13739			
D		REVISED PER TDRR 15160		29 Jul 64	
E		REVISED PER TDRR 15948	—		
F		REVISED PER TDRR 16267			JWK
G		REVISED PER TDRR 17613		24 MAR 65	RJJ
H		REVISED PER TDRR 18690			
J		REVISED PER TDRR 18691		65	
K		REVISED PER TDRR 18695		65	
L		REVISED PER TDRR 20119		65	


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME.
.350 .370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5
SEE NOTE 5
1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT
SECTION Z-Z
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO.19 TO FIND NO.1 BEFORE ENCAPSULATION
.350 .370 REF
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.620 .580 REF
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
25 SEE NOTE 13
24 SEE NOTE 14
16
SEE NOTES 7 & 8
26
ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
19
SEE NOTE 4

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9

-021 ASSY


SEE NOTE 4
27
SEE NOTE 4
28
25 SEE NOTE 13
24 SEE NOTE 14
30
ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
29
SEE NOTE 4

-011 ASSY

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — — ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN [illegible] DATE [illegible]
CHECKED [illegible] 7 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible] 10-29-64
NASA APPROVAL [illegible] 11-4-64
MIT APPROVAL [illegible] 4 May 64

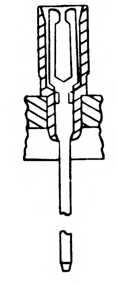
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 3

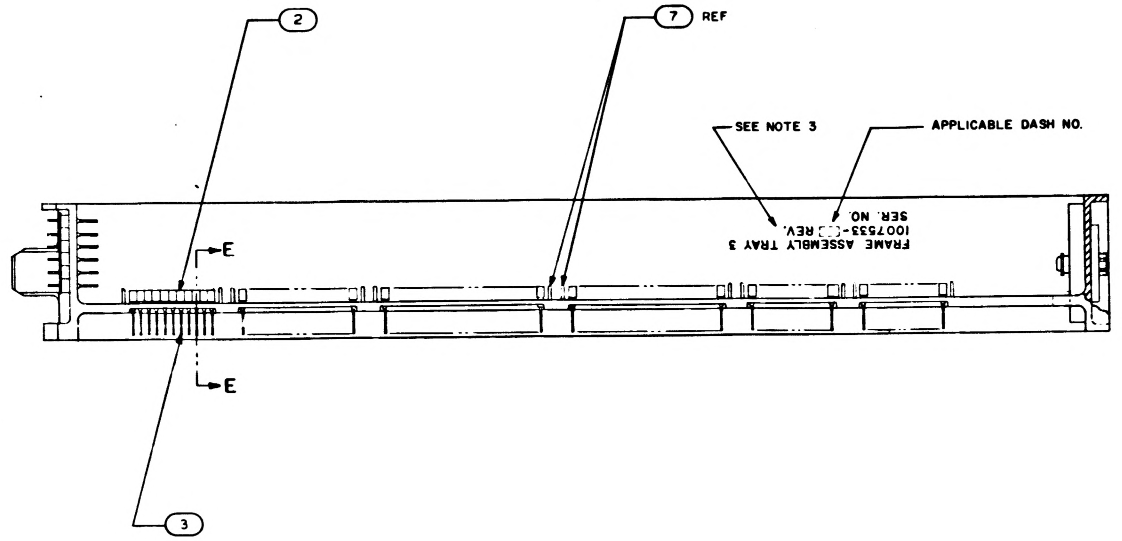
CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO 1007533
SCALE 1/1
WT
SHEET 2 OF 2

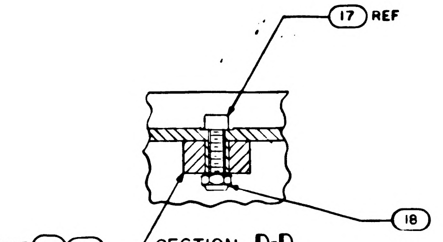
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939	[illegible]	WK
D	REVISED PER TDRR 15160	29 Dec 64	WK
E	REVISED PER TDRR 15948	11-FEB-65	[illegible]
F	REVISED PER TDRR 16267	15 FEB 65	[illegible]
G	REVISED PER TDRR 17613	24 MAR 65	RJJ
H	REVISED PER TDRR 18690	4 May 65	[illegible]
J	REVISED PER TDRR 18691	6 MAY 65	JJJ EF
K	REVISED PER TDRR 18695	11 MAY 65	A.N.
L	REVISED PER TDRR 20119	19 JUN 65	A.N. mcm
M	REVISED PER TDRR 20687	12 JUL 65	RP

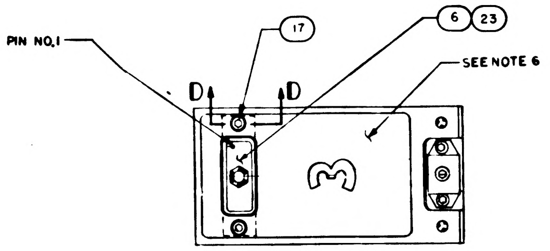


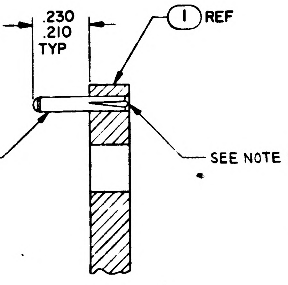
PARTIAL SECTION E-E
174 PLACES



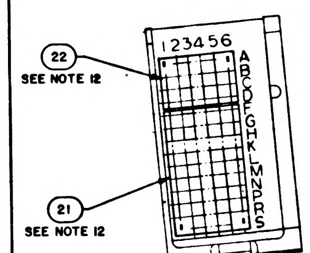


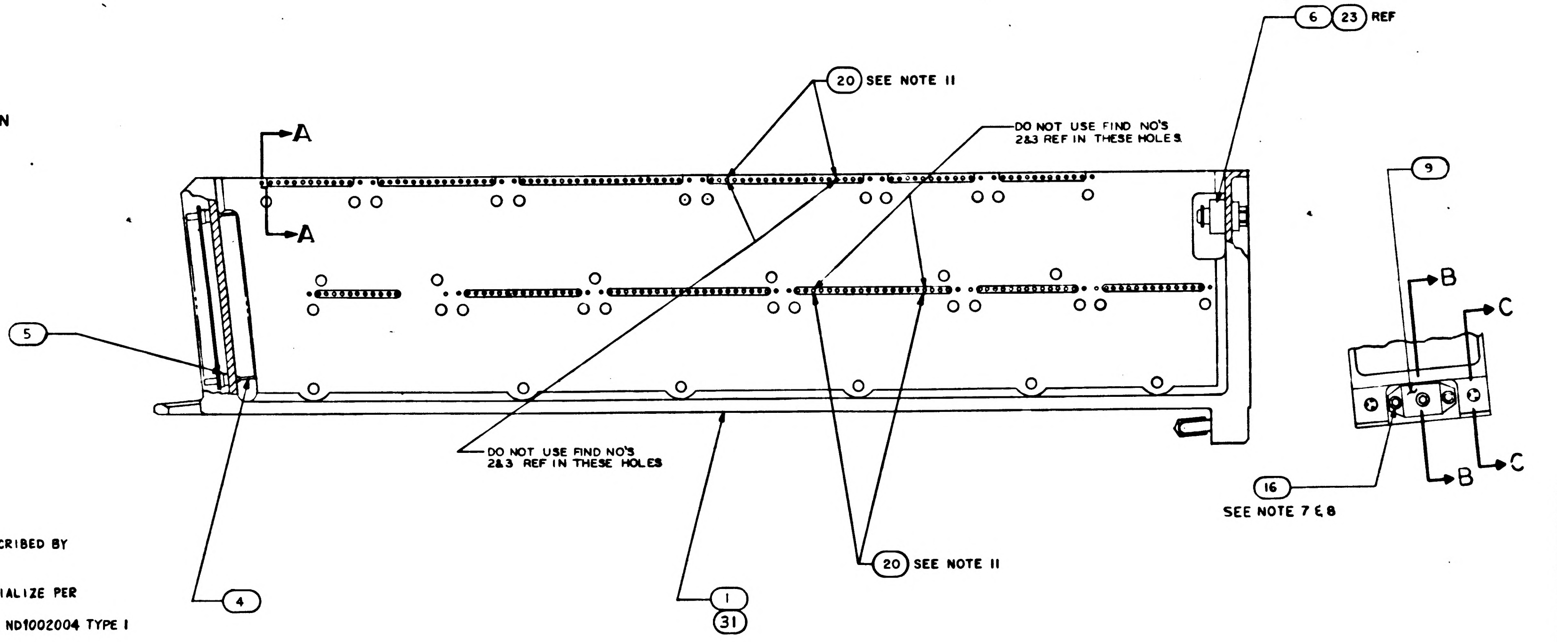
SECTION D-D
SCALE 2/1



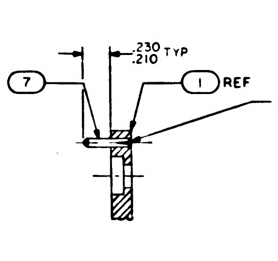


SECTION A-A
SCALE 4/1
-011 CONFIGURATION

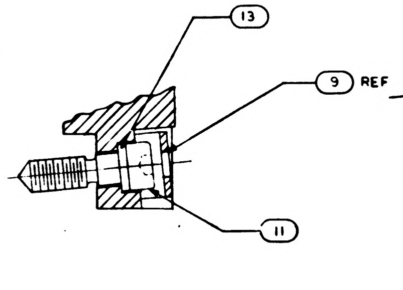



A
A
20 SEE NOTE 11
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
6 23 REF
5
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
4
1
31
20 SEE NOTE 11
9
B
C
B
C
16
SEE NOTE 7 & 8

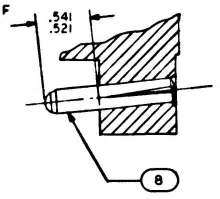
© REPLACES WORD DWG REV B



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND1002136.
3. MARK PER ND1002019, (BLACK) .100/.140 HIGH AND SERIALIZE PER ND1002023.
4. BOND FIND NUMBERS 19, 27, 28 AND 29 TO FIND NO. 1 PER ND1002004 TYPE I AS NECESSARY.
5. ENCAPSULATE PER ND1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION SEEPAGE NOT PERMISSIBLE.
7. COAT THREADS OF FIND NO. 16 DURING FINAL ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER).
8. MOUNTING TORQUE FOR FIND NUMBERS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB.
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
10. PROCURE PER PS1007143.
11. BOND FIND NO. 20 INTO HOLES FOR 45A3J4-3 AND -17, AND 45A3J10-3 AND -17 PER ND1002004, TYPE I.
12. BOND FIND NUMBERS 21 AND 22 TO FIND NO. 5 PER ND1002237.
13. BOND FIND NUMBER 25 TO FIND NUMBER 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NUMBER 25 AND THE ADJOINING AREA.
14. BOND FIND NO. 24 ONTO FIND NO. 25 AS PREPARED IN NOTE 13 PER ND1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED).
15. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND1002004 TYPE I.
16. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.

		QUANTITY REQUIRED			LIST OF MATERIALS		
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		—	1		1008651	FRAME	31
		—	1		1008608	WIRE LIST A A	30
		—	1		1008607	WIRING HARNESS C	29
		—	1		1008606	WIRING HARNESS B	28
		—	1		1008605	WIRING HARNESS A	27
		1	—		1008270	WIRE LIST A—A	26
		AR	AR		MIL-I-15126	MYLAR TAPE TYPE MFT 2.5	25
		1	1		1006712—3	RESISTOR, TEMP. SENS.-WAFER	24
		—	1		1010821-1	CONNECTOR, RECEPTACLE	23
		1	1		1008551	GASKET, CONNECTOR, TRAY	22
		1	1		1008552	GASKET, CONNECTOR, TRAY	21
		—	☒		1009563	WIRING DIAGRAM	REF
		☒	—		1009553	WIRING DIAGRAM	REF
		4	4		1008256	PIN, POLARIZING	20
		1	—		1015735	WIRING HARNESS A	19
		2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS 16995-11	SCREW CAP SOCKET HEAD	17
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	16
		~~36~~	—		~~MS 171485~~	~~PIN, SPRING~~	~~15~~
		~~36~~	—		~~1004207~~	~~DRIVE CYLINDER~~	~~14~~
		1	1		1008099-2	WASHER	13
		~~72~~	—		~~1004206~~	~~WASHER, THRUST~~	~~12~~
		1	1		1008098	SCREW, SOCKET HEAD	11
		~~36~~	—		~~1008172~~	~~SCREW, JACK~~	~~10~~
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		MS 16556-604	PIN, GUIDE	7
		1	—		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		174	174		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		174	174		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	—		1008523	FRAME	1

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007573		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN DATE 30 SEP 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 3

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1007533
SCALE 1/1
WT
SHEET 1 OF 2

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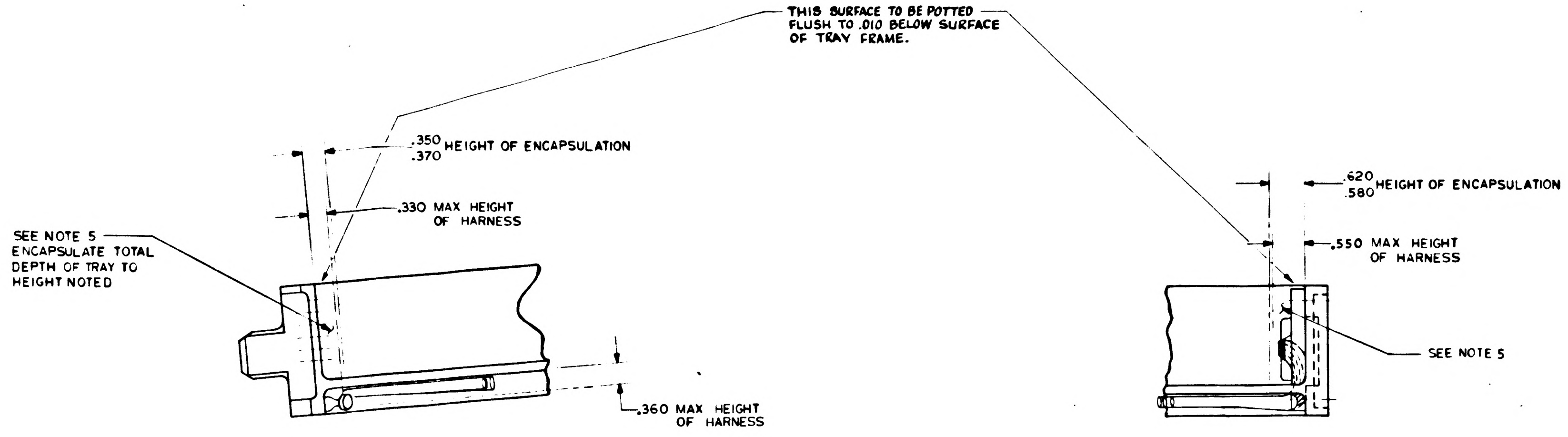
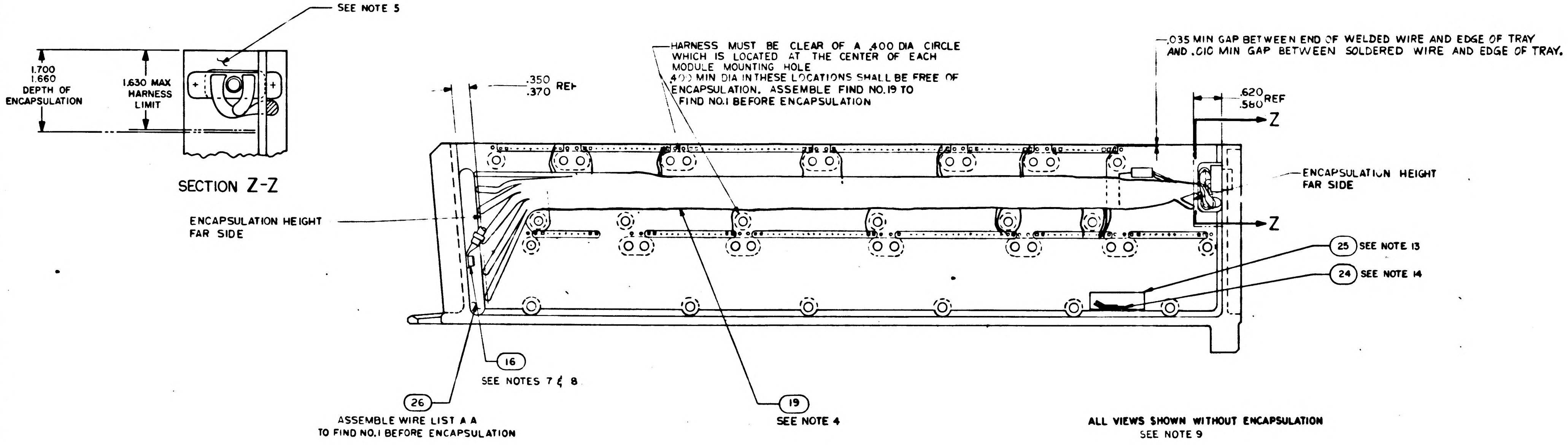
REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO	DATE	APPD
C		REPLACES WORK DWG REV B PER TDRR 13739			
D		REVISED PER TDRR 15160			
E		REVISED PER TDRR 15948	—	11 FEB 65	
F		REVISED PER TDRR 16267		15 FEB 65	JWP
G		REVISED PER TDRR 17613		26 MAR 65	RJJ
H		REVISED PER TDRR 18690		65	
J		REVISED PER TDRR 18691		5 MAY 65	
K		REVISED PER TDRR 18695		11 MAY 65	A.N.
L		REVISED PER TDRR 20119		19 JUN 65	A.N. McM
M		REVISED PER TDRR 20687		12 JUL 65	RLP

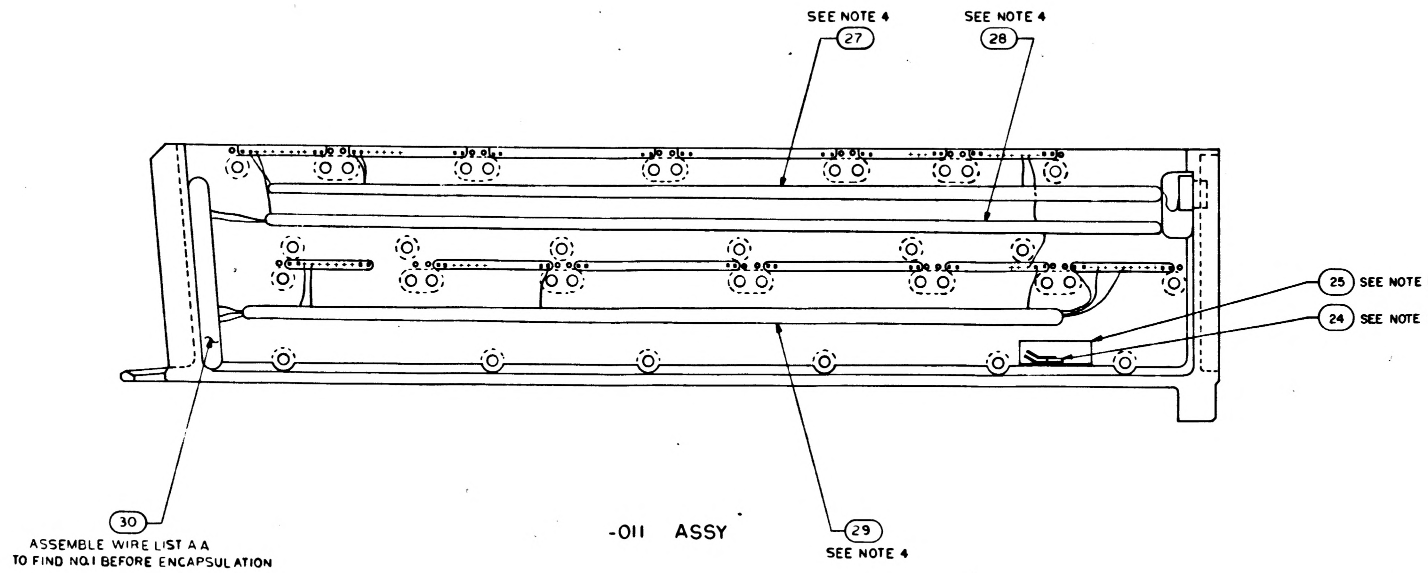

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME.
.350 .370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5


SEE NOTE 5
1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT
.350 .370 REF
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO. 19 TO FIND NO. 1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WELDED WIRE AND EDGE OF TRAY AND .010 MIN GAP BETWEEN SOLDERED WIRE AND EDGE OF TRAY.
.620 .580 REF
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
25 SEE NOTE 13
24 SEE NOTE 14
16 SEE NOTES 7 & 8
26 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
19 SEE NOTE 4

SECTION Z-Z

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9

-021 ASSY


SEE NOTE 4 27
SEE NOTE 4 28
25 SEE NOTE 13
24 SEE NOTE 14
30 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
29 SEE NOTE 4

-011 ASSY

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN DATE
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-29-64
NASA APPROVAL R. Kline 11-4-64
MIT APPROVAL 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

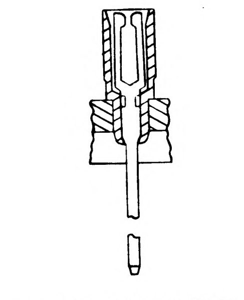
FRAME ASSEMBLY
TRAY 3

CODE IDENT. NO. 80230
SIZE E
NASA DRAWING NO. 1007533
SCALE 1/1
WT
SHEET 2 OF 2

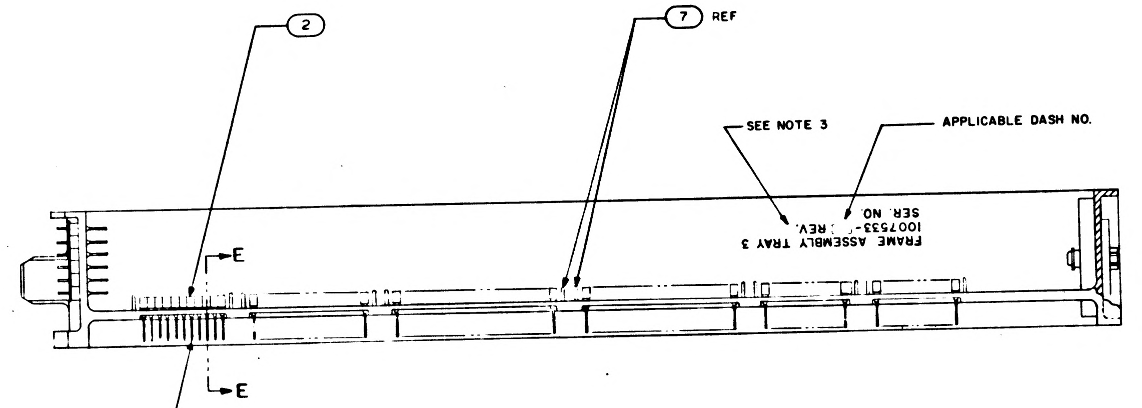
NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

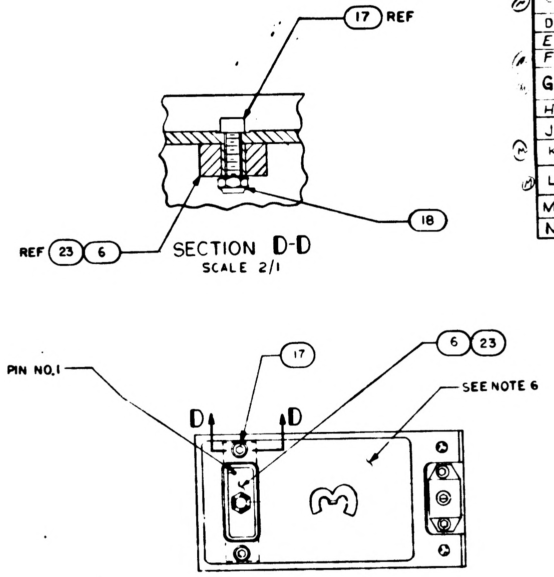
REVISIONS

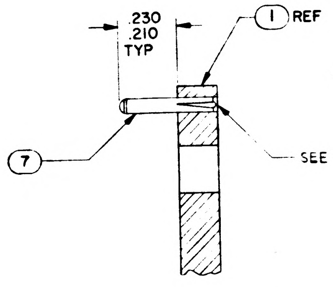
SYM	DESCRIPTION	DATE	APPROVAL
C	[illegible]PLACES W[illegible] DWG REV B PER TDRR 13939	[illegible]	W.K.
D	REVISED PER TDRR 15160	29 [illegible] 64	WK
E	REVISED PER TDRR 15948	11-FEB-65	[illegible]
F	REVISED PER TDRR 16267	15 FEB 65	[illegible]
G	REVISED PER TDRR 17613	24 MAR 65	RJJ
H	REVISED PER TDRR 18690	4 MAY 65	[illegible]
J	REVISED PER TDRR 18691	6 MAY 65	[illegible]
K	REVISED PER TDRR 18695	11 MAY 65	A.N.
L	REVISED PER TDRR 20119	19 JUN 65	A.N.
M	REVISED PER TDRR 20687	12 JUL 65	RLP
N	REVISED PER TDRR 20686	14 JUL 65	MCR



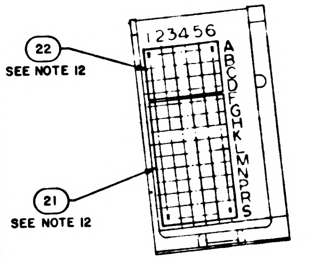
PARTIAL SECTION E-E
174 PLACES

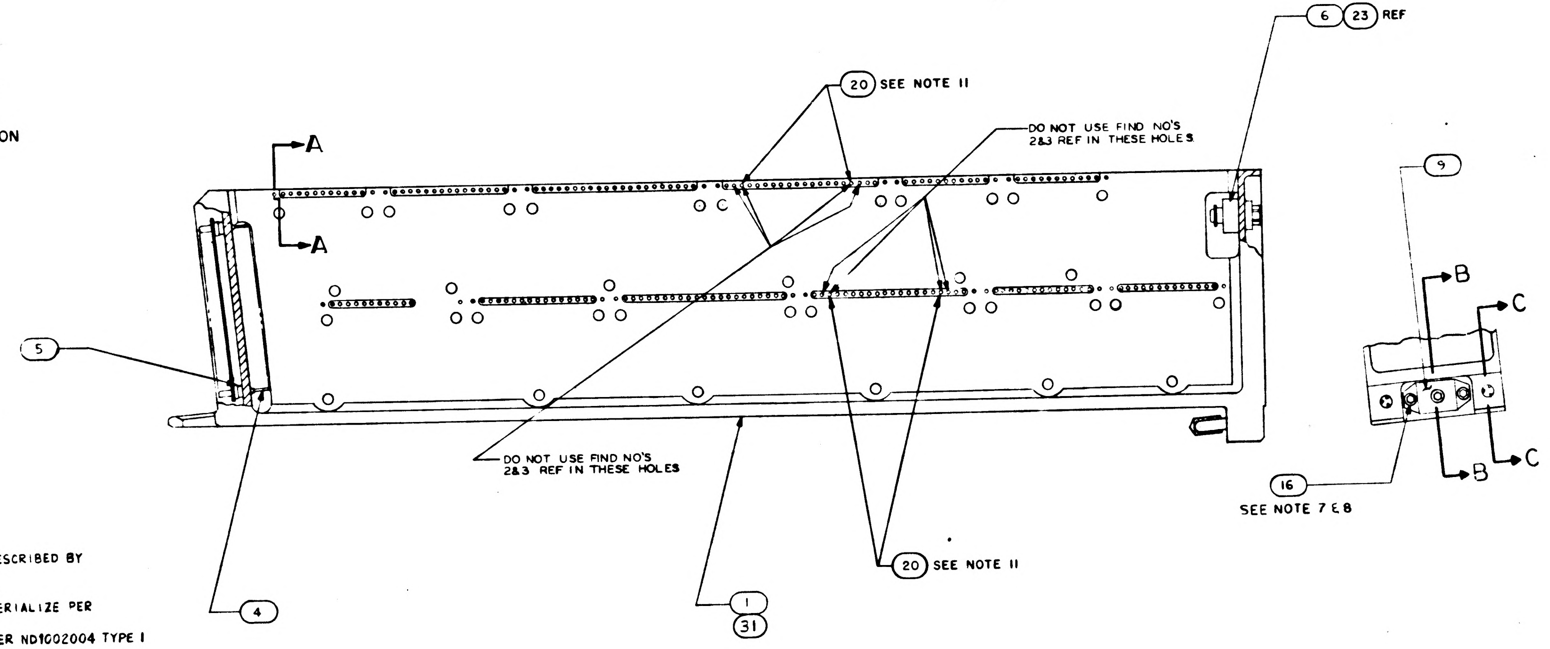






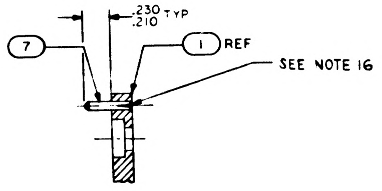
SECTION A-A
SCALE 4/1
-011 CONFIGURATION



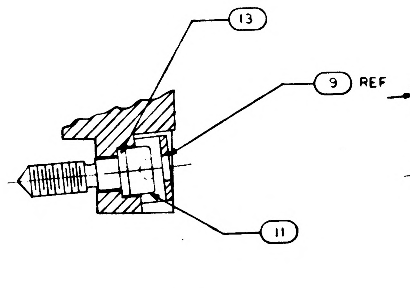


20 SEE NOTE 11
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
6 23 REF
A
A
5
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
4
1
31
20 SEE NOTE 11
9
B
C
C
B
16
SEE NOTE 7 & 8

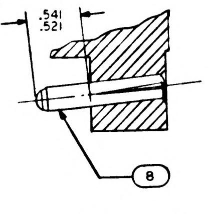
REPLACES WORD DWG REV B



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND1002136.
3. MARK PER ND1002019, (BLACK) .100/.140 HIGH AND SERIALIZE PER ND1002023.
4. BOND FIND NUMBERS 19, 27, 28 AND 29 TO FIND NO. 1 PER ND1002004 TYPE I AS NECESSARY.
5. ENCAPSULATE PER ND1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION SEEPAGE NOT PERMISSIBLE.
7. COAT THREADS OF FIND NO. 16 DURING FINAL ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER).
8. MOUNTING TORQUE FOR FIND NUMBERS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB.
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
10. PROCURE PER PS1007143.
11. BOND FIND NO. 20 INTO HOLES FOR 45A3J4-3 AND -17, AND 45A3J10-3 AND -17 PER ND1002004, TYPE I. COVER EMPTY CONNECTOR HOLE WITH ND1002004 TYPE I.
12. BOND FIND NUMBERS 21 AND 22 TO FIND NO. 5 PER ND1002237.
13. BOND FIND NUMBER 25 TO FIND NUMBER 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NUMBER 25 AND THE ADJOINING AREA.
14. BOND FIND NO. 24 ONTO FIND NO. 25 AS PREPARED IN NOTE 13 PER ND1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED).
15. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND1002004 TYPE I.
16. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.

QUANTITY REQUIRED 021	QUANTITY REQUIRED 011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
—	1		1008651	FRAME	31
-	1		1008608	WIRE LIST A A	30
	1		1008607	WIRING HARNESS C	29
	1		1008606	WIRING HARNESS B	28
	1		1008605	WIRING HARNESS A	27
1	—		1008270	WIRE LIST A-A	26
AR	AR		MIL-I-15126	MYLAR TAPE TYPE MFT 2.5	25
1	1		1006712-3	RESISTOR, TEMP SENS.-WAFER	24
—	1		1010821-1	CONNECTOR, RECEPTACLE	23
1	1		1008551	GASKET, CONNECTOR, TRAY.	22
1	1		1008552	GASKET, CONNECTOR, TRAY	21
—	X		1009563	WIRING DIAGRAM	REF
X	—		1009553	WIRING DIAGRAM	REF
4	4		1008256	PIN, POLARIZING	20
1	—		1015735	WIRING HARNESS A	19
2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	18
2	2		MS 16995-11	SCREW CAP SOCKET HEAD	17
3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	16
~~36~~	—		~~MS 171483~~	~~PIN, SPRING~~	~~15~~
36	—		~~1004207~~	~~DRIVE CYLINDER~~	~~14~~
1	1		1008099-2	WASHER	13
~~72~~	—		~~1004206~~	~~WASHER, THRUST~~	~~12~~
1	1		1008098	SCREW, SOCKET HEAD	11
~~36~~	—		~~1008172~~	~~SCREW, JACK~~	~~10~~
1	1		1001317	RETAINER, JACK SCREW	9
2	2		1010620-5	PIN, GUIDE	8
24	24		MS 16556-604	PIN, GUIDE	7
1	—		1010622-1	CONNECTOR, RECEPTACLE	6
84	84		1010383-1	INSULATOR, WRAPOST MALE	5
84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
174	174		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
174	174		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
1	—		1008523	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN [illegible] DATE 30 SEP 64
CHECKED [illegible] 7 OCT 64
APPROVAL [illegible] 20 OCT 64
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

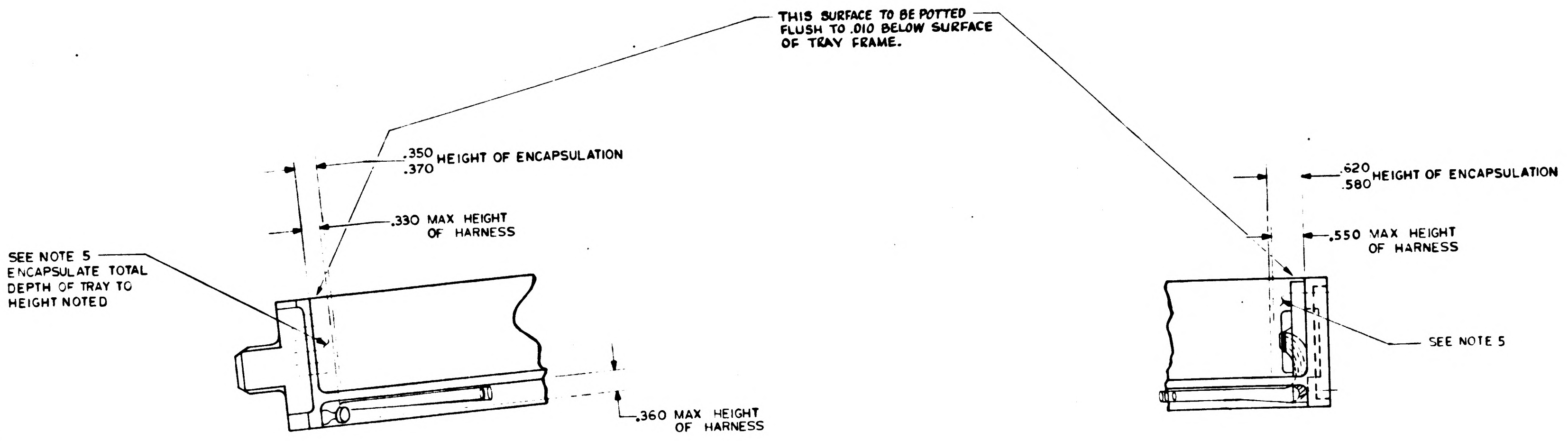
FRAME ASSEMBLY TRAY 3

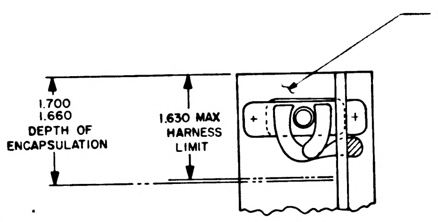
CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007533
SCALE 1/1
WT
SHEET 1 OF 2

1007533 N

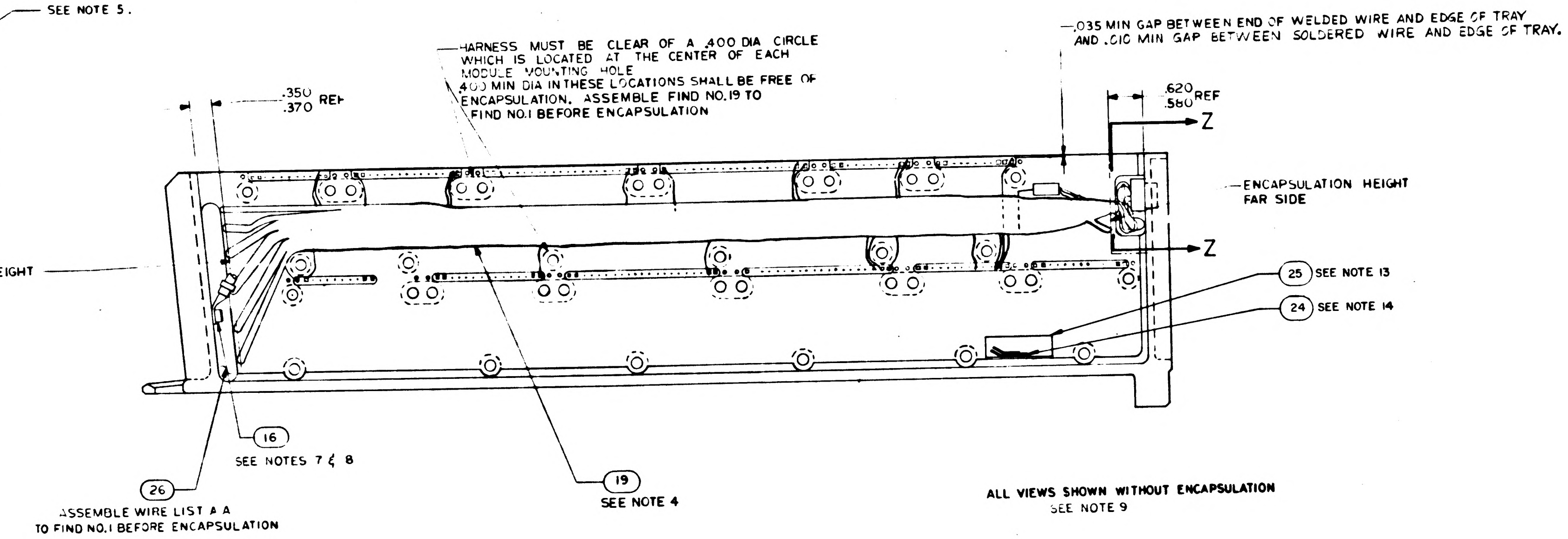
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
C		REPLACES WORL DWG REV B REF [illegible] 3739		[illegible]	[illegible]
D		REVISED PER TDRR 15160		[illegible]	[illegible]
E		REVISED PER TDRR 15948	—	11 FEB 65	[illegible]
F		REVISED PER TDRR 16267		15 FEB 65	JWP
G		REVISED PER TDRR 17613		26 MAR 65	RJJ W.T.
H		REVISED PER TDRR 18690		4 MAY 65	W.T.
J		REVISED PER TDRR 18691		5 MAY 65	[illegible]
K		REVISED PER TDRR 18695		11 MAY 65	A.N.
L		REVISED PER TDRR 20119		19 JUN 65	A.N. MCR
M		REVISED PER TDRR 20687		12 JUL 65	RLP
N		REVISION STATUS CHANGED		14 JUL 65	MCR


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME.
.350
.370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5

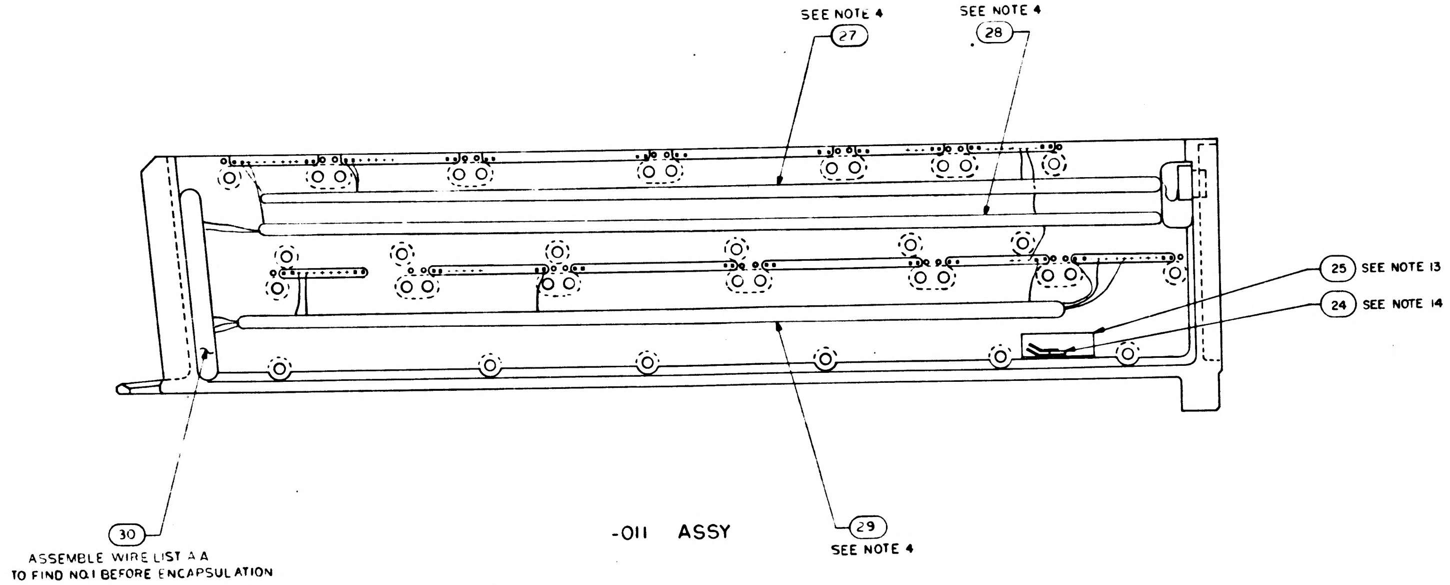

SEE NOTE 5.
1.700
1.660
DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT

SECTION Z-Z


HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO.19 TO FIND NO.1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WELDED WIRE AND EDGE OF TRAY AND .010 MIN GAP BETWEEN SOLDERED WIRE AND EDGE OF TRAY.
.350
.370 REF
.620
.580 REF
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
25 SEE NOTE 13
24 SEE NOTE 14
16
SEE NOTES 7 & 8
26
ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
19
SEE NOTE 4

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9

-021 ASSY


SEE NOTE 4
27
SEE NOTE 4
28
25 SEE NOTE 13
24 SEE NOTE 14
30
ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
29
SEE NOTE 4

-011 ASSY

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
DRAWN [illegible] DATE [illegible]
CHECKED [illegible] 7 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible]
NASA APPROVAL [illegible] 11-4-64
MIT APPROVAL [illegible] 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 3

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO 1007533
SCALE 1/1
WT
SHEET 2 OF 2

N

1007533

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
Ⓒ	REPLACES WORD DWG REV B PER TDRR 13739	[illegible]	[illegible]
D	REVISED PER TDRR 15160	29 Dec '64	[illegible]
E	REVISED PER TDRR 5948	[illegible]	[illegible]
F	REVISED PER TDRR 16267	15 FEB 65	[illegible]
G	REVISED PER TDRR 17613	24 MAR 65	RJJ
H	REVISED PER TDRR 18690	[illegible]	[illegible]
J	REVISED PER TDRR 18691	[illegible]	[illegible]
K	REVISED PER TDRR 18695	[illegible] 65	[illegible]
L	REVISED PER TDRR 20019	[illegible] 65	[illegible]
M	REVISED PER TDRR 20687	12 [illegible] 65	[illegible]
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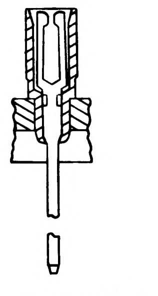
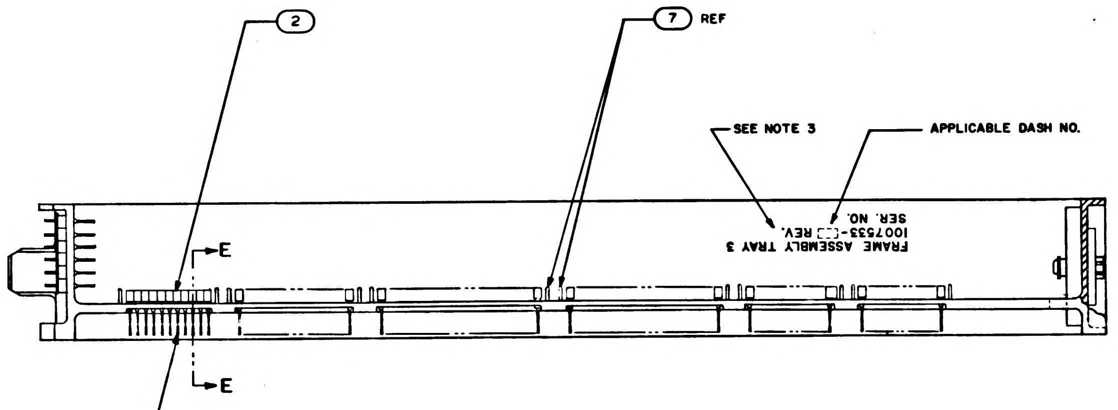
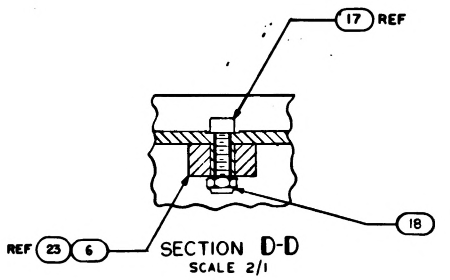
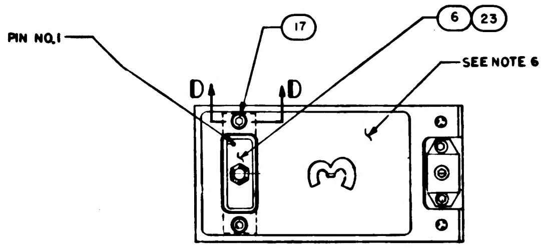


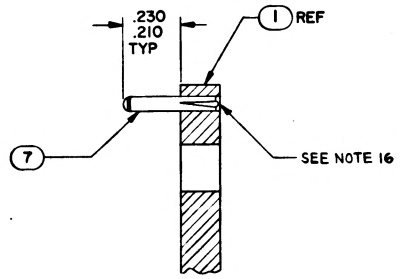
PARTIAL SECTION E-E
174 PLACES



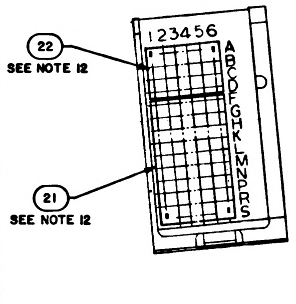


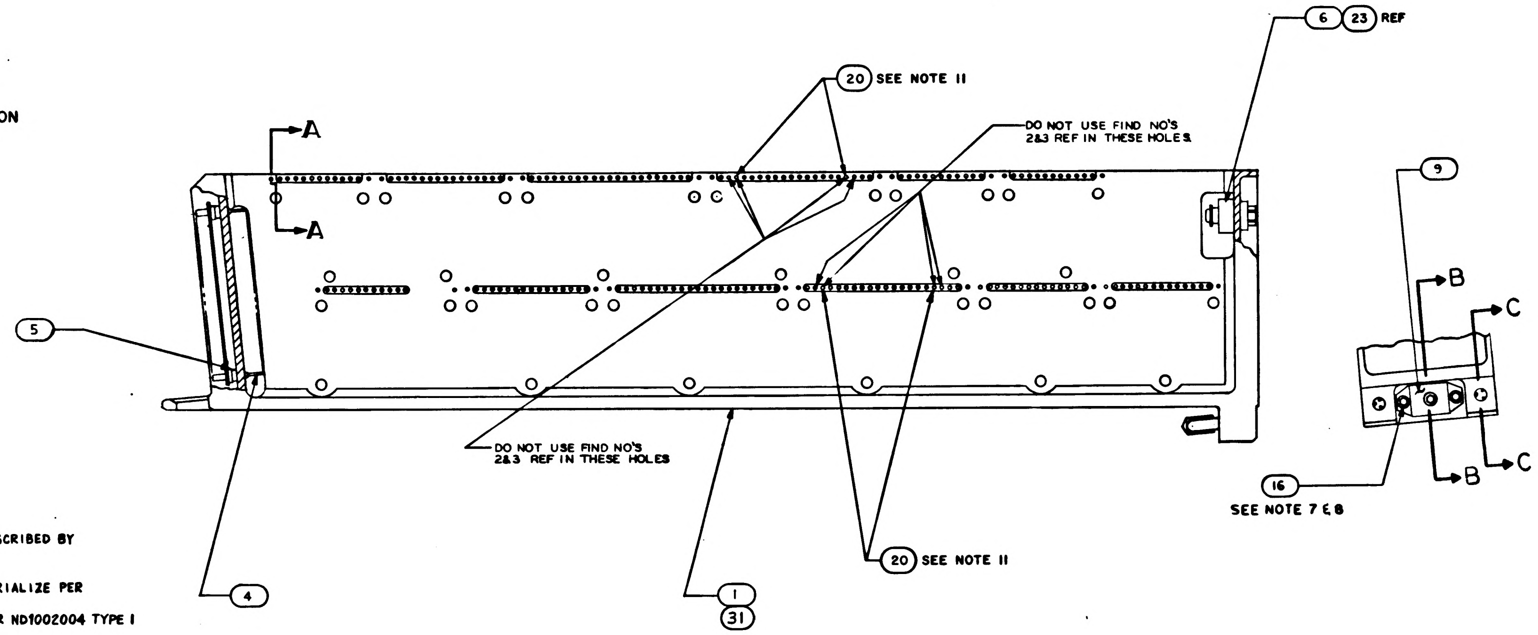
SECTION D-D
SCALE 2/1



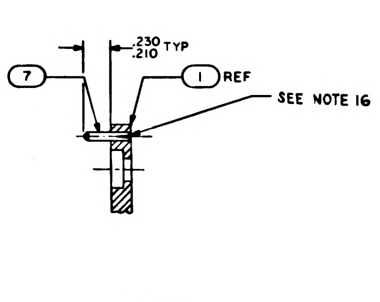


SECTION A-A
SCALE 4/1
-011 CONFIGURATION

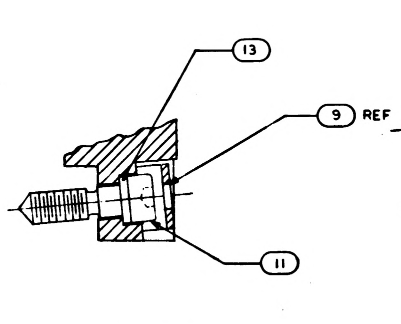



6 23 REF
20 SEE NOTE 11
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
A
A
5
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
4
1
31
20 SEE NOTE 11
9
B
C
B
C
16
SEE NOTE 7 & 8

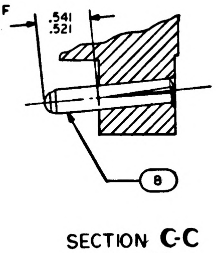
Ⓒ REPLACES WORD DWG REV B



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND1002136.
3. MARK PER ND1002019, (BLACK) .100/.140 HIGH AND SERIALIZE PER ND1002023.
4. BOND FIND NUMBERS 19, 27, 28 AND 29 TO FIND NO. 1 PER ND1002004 TYPE I AS NECESSARY.
5. ENCAPSULATE PER ND1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION SEEPAGE NOT PERMISSIBLE.
7. COAT THREADS OF FIND NO. 16 DURING FINAL ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER).
8. MOUNTING TORQUE FOR FIND NUMBERS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB.
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
10. PROCURE PER PS1007143.
11. BOND FIND NO. 20 INTO HOLES FOR 45A3J4-3 AND -17, AND 45A3J10-3 AND -17 PER ND1002004, TYPE I. COVER EMPTY CONNECTOR HOLE WITH ND1002004 TYPE I.
12. BOND FIND NUMBERS 21 AND 22 TO FIND NO. 5 PER ND1002237.
13. BOND FIND NUMBER 25 TO FIND NUMBER 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NUMBER 25 AND THE ADJOINING AREA.
14. BOND FIND NO. 24 ONTO FIND NO. 25 AS PREPARED IN NOTE 13 PER ND1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED).
15. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A FORMULATION CONSISTING OF 40 PARTS BY WT. 1010959-1, 100 PARTS BY WT. 1010959-2, AND 7 PARTS BY WT. 1006277 AND CURE AT ROOM TEMPERATURE FOR THREE HOURS OR ONE HOUR AT 140°F. LIMITED AMOUNT ALLOWED TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004, TYPE I.
16. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND 1002004, POTTING SIDE ONLY.

QUANTITY REQUIRED 021	QUANTITY REQUIRED 011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
—	1		1008651	FRAME	31
-	1		1008608	WIRE LIST A A	30
—	1		1008607	WIRING HARNESS C	29
—	1		1008606	WIRING HARNESS B	28
—	1		1008605	WIRING HARNESS A	27
1	—		1008270	WIRE LIST A—A	26
AR	AR		MIL-I-15126	MYLAR TAPE TYPE MFT 2.5	25
1	1		1006712—3	RESISTOR, TEMP. SENS.—WAFER	24
—	1		1010821-1	CONNECTOR, RECEPTACLE	23
1	1		1008551	GASKET, CONNECTOR, TRAY	22
1	1		1008552	GASKET, CONNECTOR, TRAY	21
—	☒		1009563	WIRING DIAGRAM	REF
☒	—		1009553	WIRING DIAGRAM	REF
4	4		1008256	PIN, POLARIZING	20
1	—		1015735	WIRING HARNESS A	19
2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	18
2	2		MS 16995-11	SCREW CAP SOCKET HEAD	17
3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	16
~~36~~	—		~~MS 171435~~	~~PIN, SPRING~~	~~15~~
~~36~~	—		~~1004207~~	~~DRIVE CYLINDER~~	~~14~~
1	1		1008099-2	WASHER	13
~~72~~	—		~~1004206~~	~~WASHER, THRUST~~	~~12~~
1	1		1008098	SCREW, SOCKET HEAD	11
~~36~~	—		~~1008172~~	~~SCREW, JACK~~	~~10~~
1	1		1001317	RETAINER, JACK SCREW	9
2	2		1010620-5	PIN, GUIDE	8
24	24		MS16556-604	PIN, GUIDE	7
1	—		1010622-1	CONNECTOR, RECEPTACLE	6
84	84		1010383-1	INSULATOR, WRAPOST MALE	5
84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
174	174		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
174	174		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
1	—		1008523	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007573		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ±
DECIMALS ±.02
ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN DATE 30 [illegible] 64
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

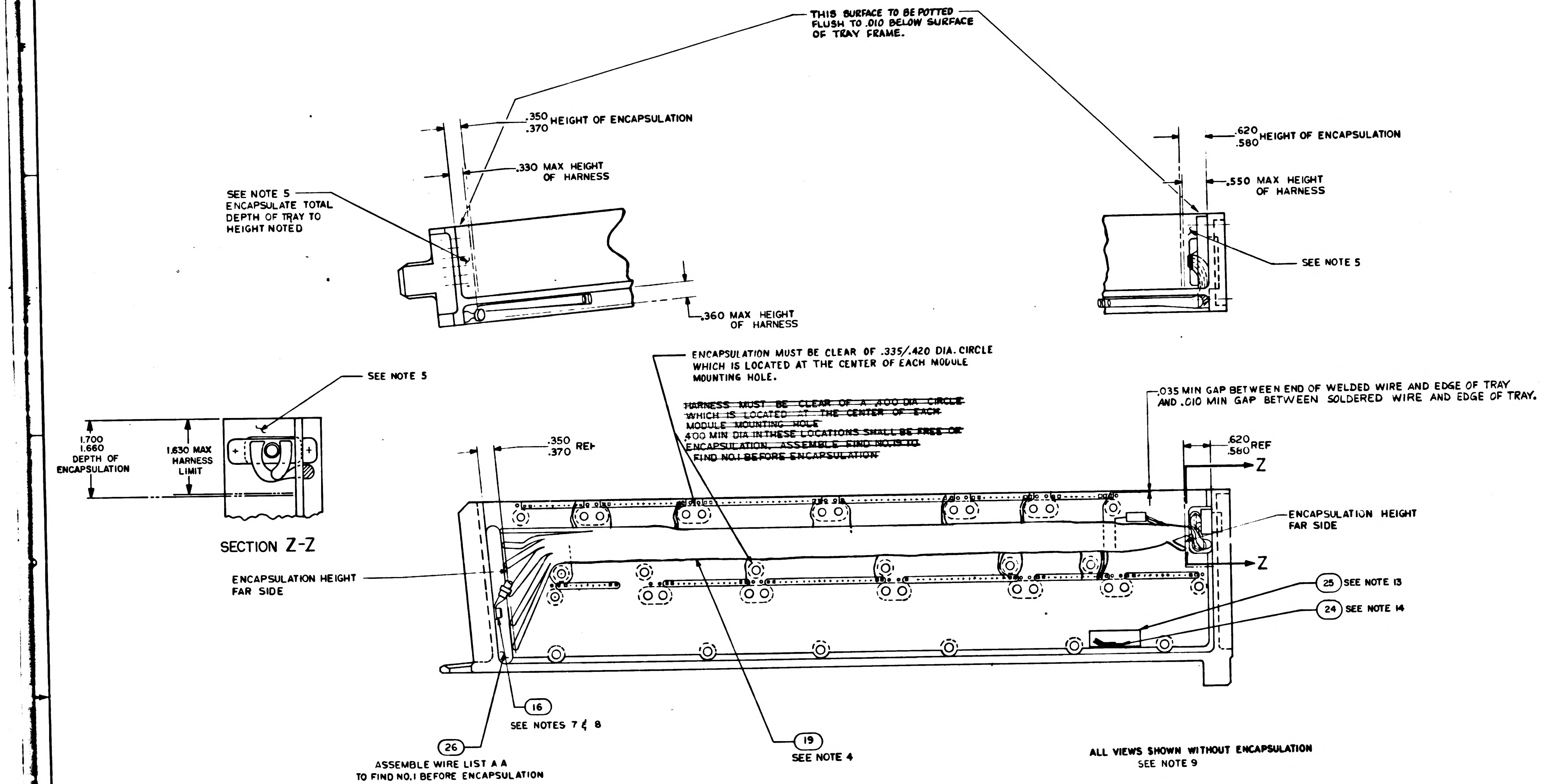
FRAME ASSEMBLY
TRAY 3

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1007533
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

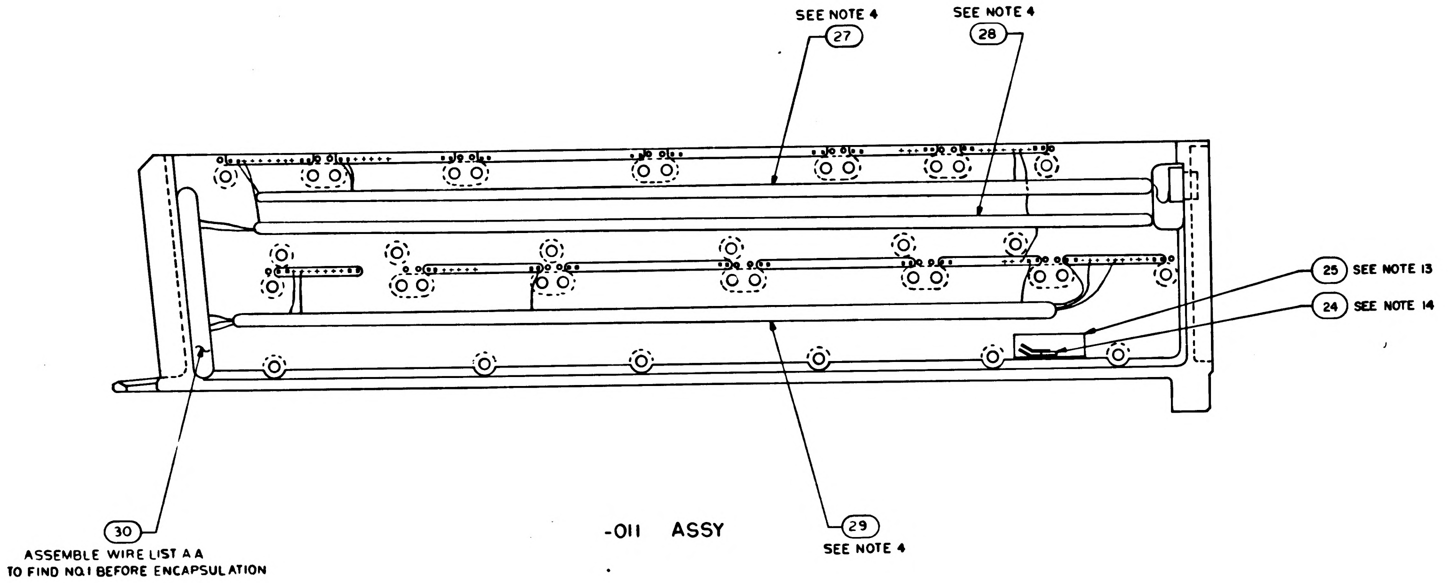
REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		REPLACES WORD DWG REV B PER TDRR 13939	—	[illegible]	[illegible]
D		REVISED PER TDRR 15160		[illegible]	[illegible]
E		REVISED PER TDRR 5945	—	1 FEB 65	[illegible]
F		REVISED PER TDRR 16267		17 FEB 65	WP
G		REVISED PER TDRR 17613		26 MAR 65	RJJ
H		REVISED PER TDRR 18690		MAY 65	J.B.
J		REVISED PER TDRR 18691		5 MAY 65	[illegible]
K		REVISED PER TDRR 18695		MAY 65	A N
L		REVISED PER TDRR 20119		[illegible]	A N
M		REVISED PER TDRR 20687		[illegible]	[illegible]
N		REVISION STATUS CHANGED		[illegible]	[illegible]
P		REVISED PER TDRR 20785		[illegible]	W R



THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME.
.350
.370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5
SEE NOTE 5
1.700
1.660
DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT
SECTION Z-Z
ENCAPSULATION MUST BE CLEAR OF .335/.420 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
~~HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE~~
~~.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO.15 TO FIND NO.1 BEFORE ENCAPSULATION~~
.350
.370 REF
.035 MIN GAP BETWEEN END OF WELDED WIRE AND EDGE OF TRAY AND .010 MIN GAP BETWEEN SOLDERED WIRE AND EDGE OF TRAY.
.620
.580 REF
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
25 SEE NOTE 13
24 SEE NOTE 14
16
SEE NOTES 7 & 8
26
ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
19
SEE NOTE 4
ALL VIEWS SHOWN WITHOUT ENCAPSULATION SEE NOTE 9

-021 ASSY



SEE NOTE 4
27
SEE NOTE 4
28
25 SEE NOTE 13
24 SEE NOTE 14
30
ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
29
SEE NOTE 4

-011 ASSY

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — — ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN [illegible] DATE [illegible]
CHECKED [illegible] 7 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible] 10-23-64
NASA APPROVAL [illegible] 11-4-64
MIT APPROVAL [illegible]

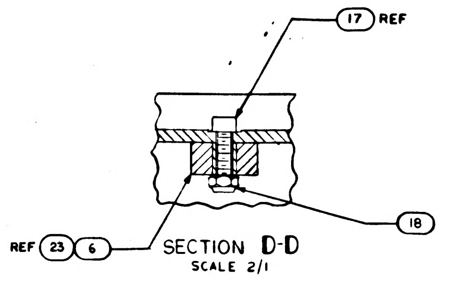
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 3

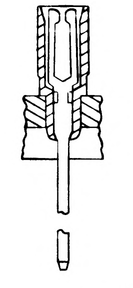
CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO 1007533
SCALE 1/1
WT
SHEET 2 OF 2

[illegible]

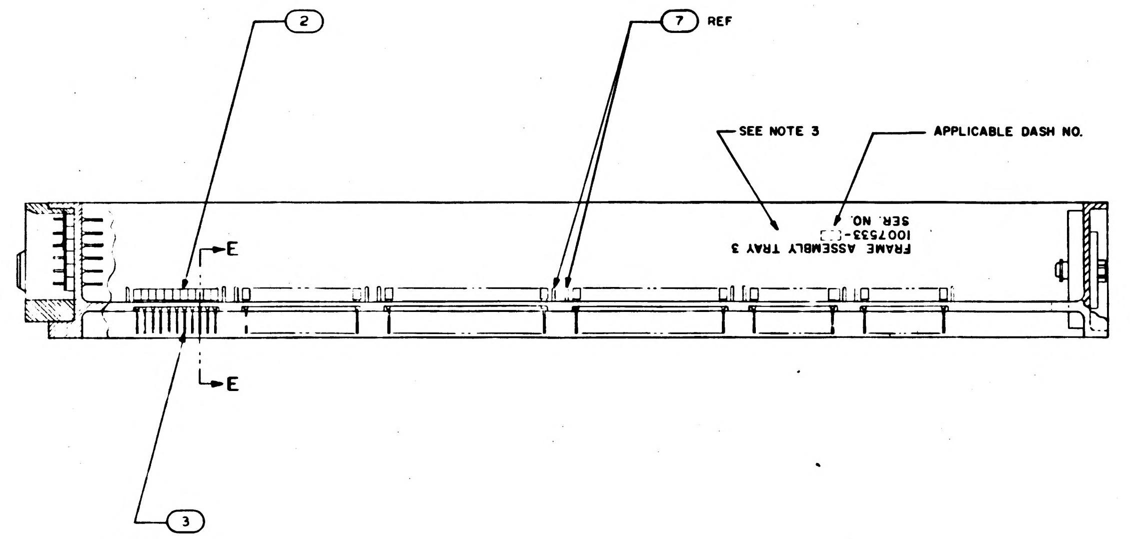
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES [illegible] PER TDRR 13939	[illegible]	WK
D	REVISED PER TDRR 15160	[illegible] 64	WK
E	REVISED PER TDRR 15948	FEB 65	[illegible]
F	REVISED PER TDRR 16267	15 FEB 65	WNP
G	REVISED PER TDRR 17613	24 MAR 65	RJJ
H	REVISED PER TDRR 18690	4 MAY 65	[illegible]
J	REVISED PER TDRR 18691	[illegible] 65	[illegible]
K	REVISED PER TDRR 18695	11 MAY 65	A.N.
L	REVISED PER TDRR 20119	19 JUN 65	A.N.
M	REVISED PER TDRR 20687	12 JUL 65	RLP
N	REVISED PER TDRR 20686	14 JUL 65	MCR
P	REVISED PER TDRR 20785	20 JUL 65	WJR RWH
R	REVISED PER TDRR 26406	23 FEB 66	JMP

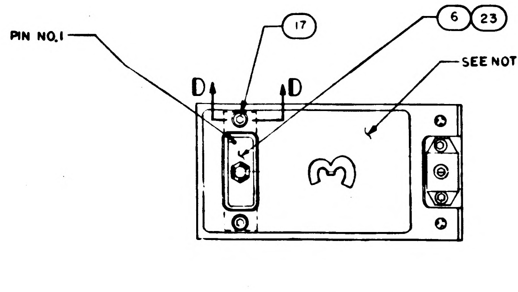


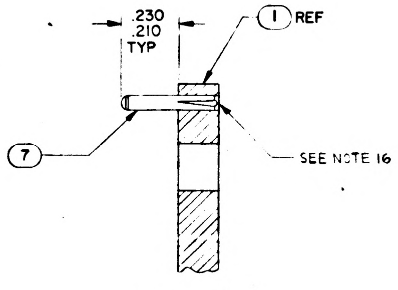
SECTION D-D
SCALE 2/1



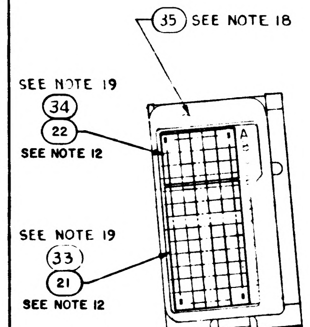
PARTIAL SECTION E-E
174 PLACES

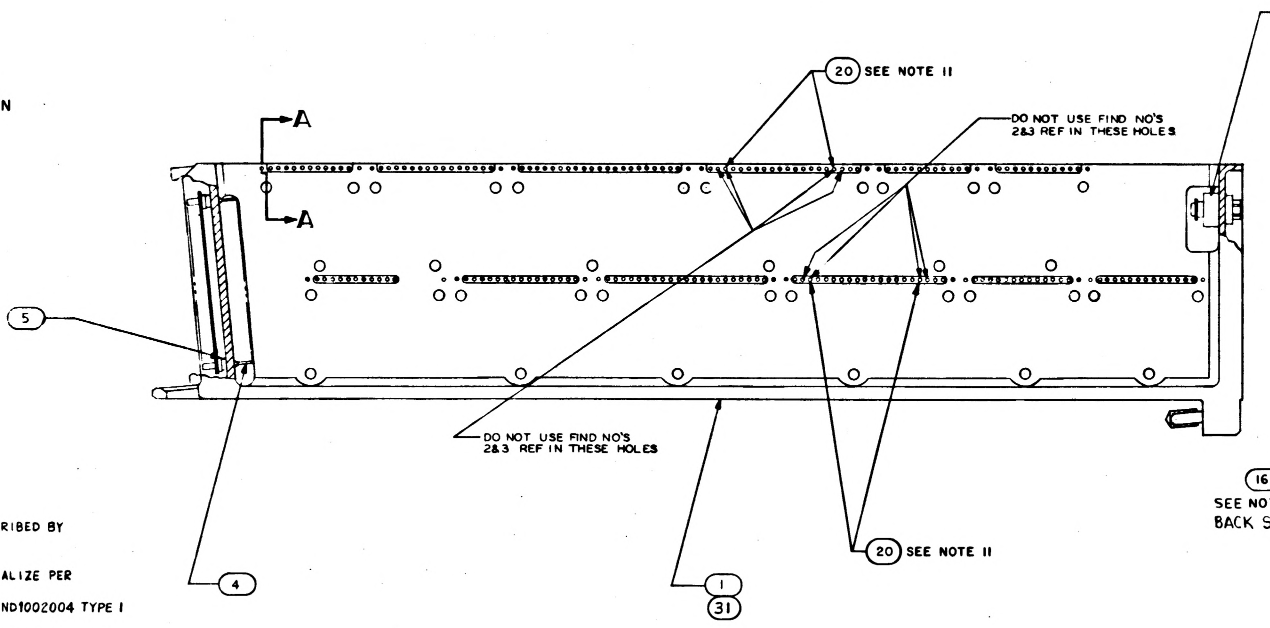


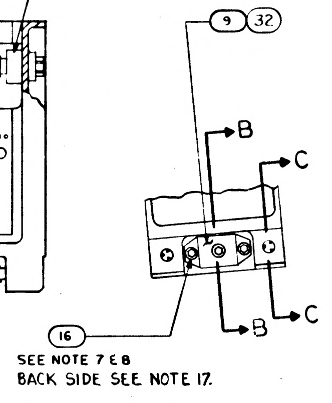




SECTION A-A
SCALE 4/1
-011 CONFIGURATION



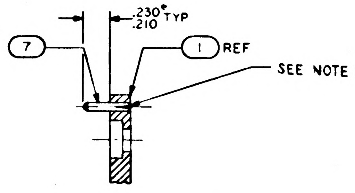

6 23 REF
20 SEE NOTE 11
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
A
A
5
DO NOT USE FIND NO'S 2&3 REF IN THESE HOLES
4
1
31
20 SEE NOTE 11



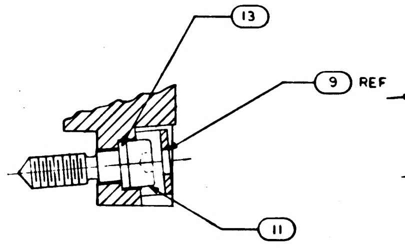
Ⓜ REPLACES WORD DWG REV B

NOTES:

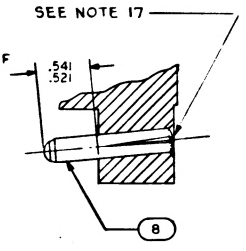
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND1002136.
3. MARK PER ND1002019, (BLACK) .100/.140 HIGH AND SERIALIZE PER ND1002023.
4. BOND FIND NUMBERS 19, 27, 28 AND 29 TO FIND NO. 1 PER ND1002004 TYPE I AS NECESSARY.
5. ENCAPSULATE PER ND1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION SEEPAGE NOT PERMISSIBLE.
7. COAT THREADS OF FIND NO. 16 DURING FINAL ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER).
8. MOUNTING TORQUE FOR FIND NUMBERS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB.
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
10. PROCURE PER PS1007143.
11. BOND FIND NO. 20 INTO HOLES FOR 45A3J4-3 AND -17, AND 45A3J10-3 AND -17 PER ND1002004, TYPE I. COVER EMPTY CONNECTOR HOLE WITH ND1002004 TYPE I.
12. BOND FIND NUMBERS 21 AND 22 TO FIND NO. 5 PER ND1002237.
13. BOND FIND NUMBER 25 TO FIND NUMBER 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NUMBER 25 AND THE ADJOINING AREA.
14. BOND FIND NO. 24 ONTO FIND NO. 25 AS PREPARED IN NOTE 13 PER ND1002004 TYPE I (ALL BARE WIRES MUST BE COMPLETELY COVERED).
15. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A FORMULATION CONSISTING OF 40 PARTS BY WT. 1010959-1, 100 PARTS BY WT. 1010959-2, AND 7 PARTS BY WT. 1006277 AND CURE AT ROOM TEMPERATURE FOR [illegible] HOURS OR ONE HOUR AT 140°F. LIMITED AMOUNT ALLOWED TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004, TYPE I.



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

16. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND 1002004, POTTING SIDE ONLY.

(CONTINUED ON SHEET 2)

QUANTITY REQUIRED			EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
031	021	011				
AR				SEE NOTE 20	MOISTURE-PROOFING	36
1				1008335	GASKET, WASP	35
1				1008337	GASKET, CONNECTOR TRAY	34
1				1008338	GASKET, CONNECTOR TRAY	33
1				1008333	RETAINER, JACK SCREW	32
	–	1		1008651	FRAME	31
1	–	1		1008608	WIRE LIST A A	30
1	–	1		1008607	WIRING HARNESS C	29
1	–	1		1008606	WIRING HARNESS B	28
1		1		1008605	WIRING HARNESS A	27
–	1	–		1008270	WIRE LIST A–A	26
AR	AR	AR		MIL-I-15126	MYLAR TAPE TYPE MFT 2.5	25
1	1	1		1006712–3	RESISTOR, TEMP SENS.–WAFER	24
1	–	1		1010821-1	CONNECTOR, RECEPTACLE	23
–	1	1		1008551	GASKET, CONNECTOR, TRAY	22
–	1	1		1008552	GASKET, CONNECTOR, TRAY	21
╳	—	╳		1009563	WIRING DIAGRAM	REF
–	╳	—		1009553	WIRING DIAGRAM	REF
4	4	4		1008256	PIN, POLARIZING	20
—	1	—		1015735	WIRING HARNESS A	19
2	2	2		MS 21045 C 04	NUT, SELF-LOCKING HEX	18
2	2	2		MS 16995-11	SCREW CAP SOCKET HEAD	17
3	3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	16
	~~36~~	—		~~MS 171433~~	~~PIN, SPRING~~	~~15~~
	~~36~~	—		~~1004207~~	~~DRIVE CYLINDER~~	~~14~~
1	1	1		1008099-2	WASHER	13
	~~72~~	—		~~1004206~~	~~WASHER, THRUST~~	~~12~~
1	1	1		1008098	SCREW, SOCKET HEAD	11
	~~36~~	—		~~1008172~~	~~SCREW, JACK~~	~~10~~
—	1	1		1001317	RETAINER, JACK SCREW	9
2	2	2		1010620-5	PIN, GUIDE	8
24	24	24		MS 16555-604	PIN, GUIDE	7
–	1	–		1010622-1	CONNECTOR, RECEPTACLE	6
84	84	84		1010383-1	INSULATOR, WRAPOST MALE	5
84	84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
84	174	174		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
174	174	174		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
–	1	–		1008523	FRAME	1

LIST OF MATERIALS

1007573		
NEXT ASSY	USED ON	APPLICABLE DASH NO
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS · DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN DATE 30 [illegible] 64
CHECKED [illegible] 7 OCT 64
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

FRAME ASSEMBLY
TRAY 3

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007533
SCALE 1/1
WT
SHEET 1 OF 2

R
1007533

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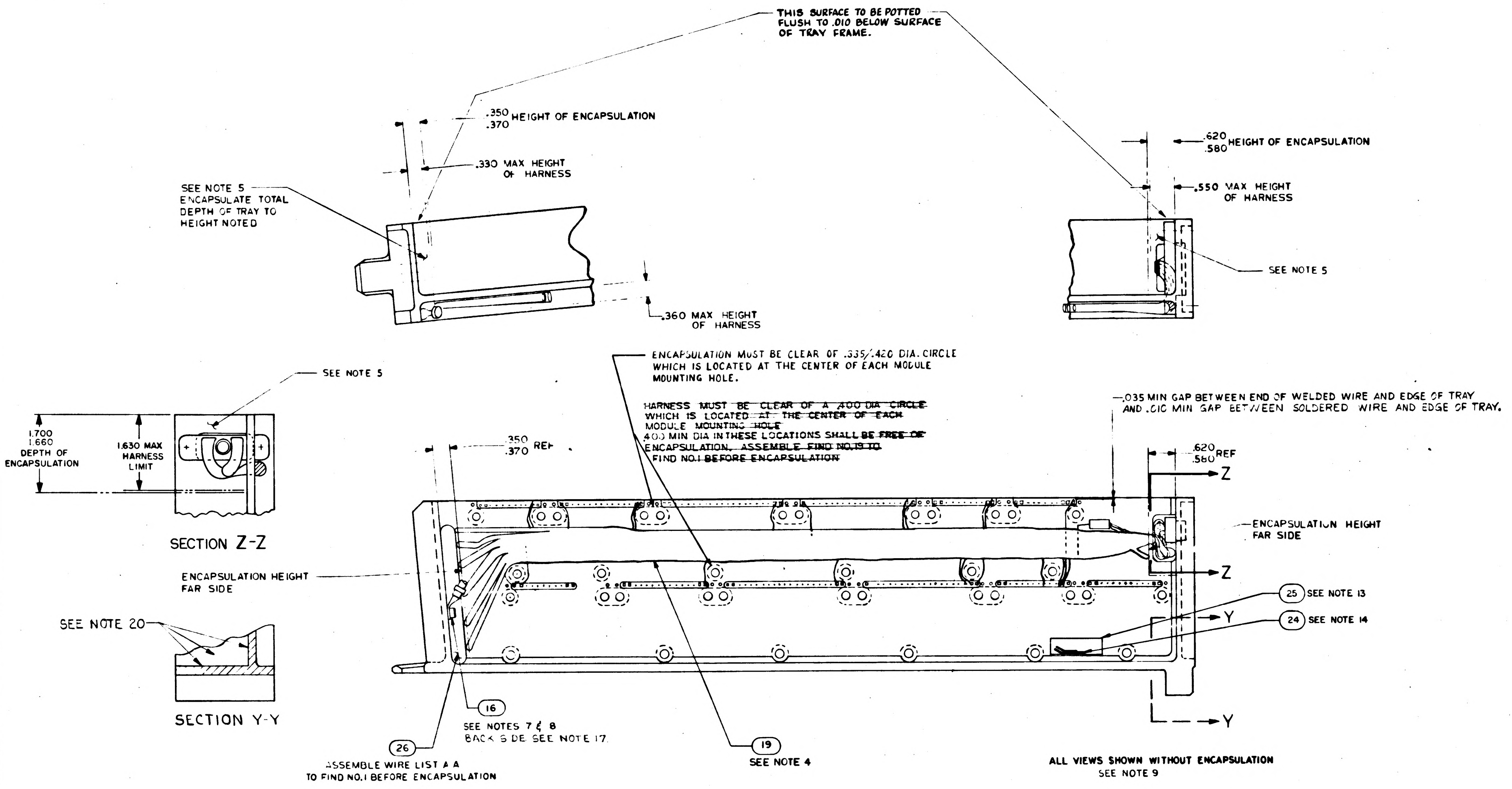
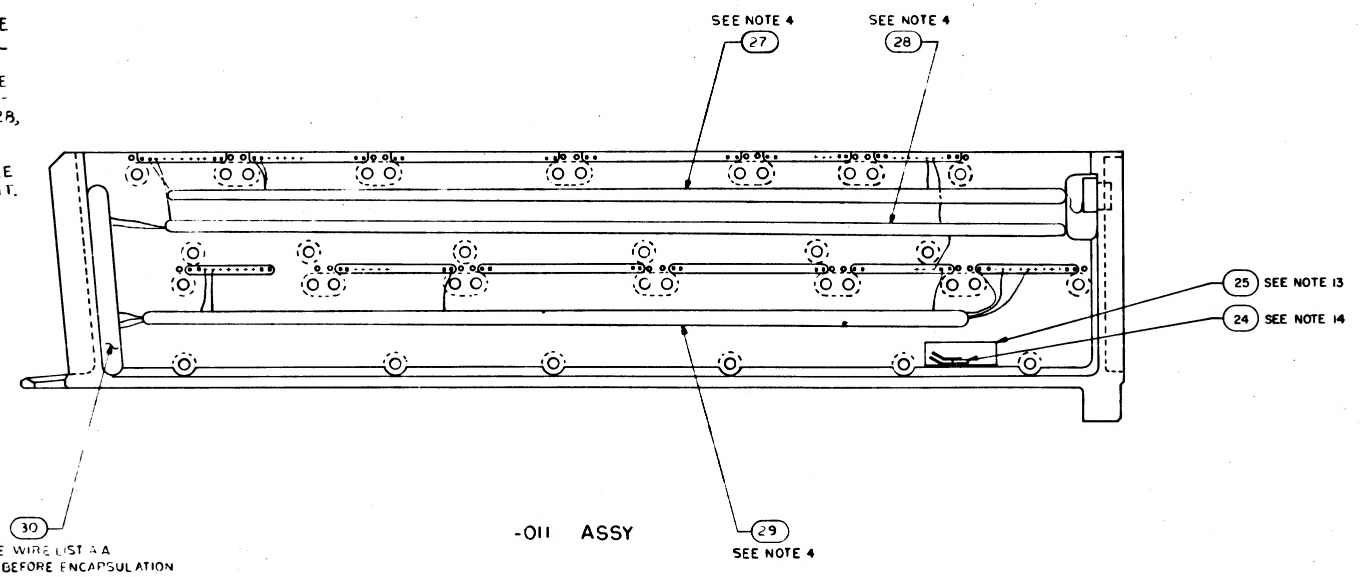

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME.
.350 .370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5
ENCAPSULATION MUST BE CLEAR OF .335/.420 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
~~HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE~~
.400 MIN DIA IN THESE LOCATIONS SHALL ~~BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO.19 TO FIND NO.1 BEFORE ENCAPSULATION~~
.035 MIN GAP BETWEEN END OF WELDED WIRE AND EDGE OF TRAY AND .010 MIN GAP BETWEEN SOLDERED WIRE AND EDGE OF TRAY.
SEE NOTE 5
1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT
SECTION Z-Z
.350 .370 REF
.620 .580 REF
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
SEE NOTE 20
SECTION Y-Y
25 SEE NOTE 13
24 SEE NOTE 14
Y
Y
16
SEE NOTES 7 & 8 BACK SIDE SEE NOTE 17
26
ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
19
SEE NOTE 4
ALL VIEWS SHOWN WITHOUT ENCAPSULATION SEE NOTE 9

-021 ASSY

NOTES: (CONTINUED FROM SHEET 1)

17. FILL CAVITY PER ND 1002009, METHOD J.
18. BOND FIND NO. 35 TO FIND NO. 31 PER ND1002151, USING ADHESIVE PER MIL-A-254-57.
19. APPLY A BEAD OF SILICONE GREASE MIL-S-8660 BETWEEN THE ROWS OF MALE MALCO PINS IN BOTH DIRECTIONS AND AROUND THE PERIMETER OF THE GASKETS ON THE MALCO CONNECTOR. NOMINAL BEAD DIAMETER SHALL BE 1/8 INCH.
20. PAINT THE MODULE MOUNTING SURFACE AND THE SURFACE PERPENDICULAR TO THE MODULE MOUNTING SURFACE PER ND 1002292, USING MIL-C-15328, WASH PRIMER FOLLOWED BY MIL-P-8585 ZINC CHROMATE PRIMER FOLLOWED BY 1012543-003 PAINT. MODULE GUIDE PINS, CONNECTOR FEMALE PINS AND INSULATORS ARE TO BE FREE OF PAINT. SEE FIND NO. 36


SEE NOTE 4
27
SEE NOTE 4
28
25 SEE NOTE 13
24 SEE NOTE 14
30
ASSEMBLE WIRE LIST A A TO FIND NO.1 BEFORE ENCAPSULATION
29
SEE NOTE 4

-011 ASSY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
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D		REVISED PER TDRR 15160		[illegible]	WA
E		REVISED PER TDRR 15948	—	11 FEB 65	[illegible]
F		REVISED PER TDRR 16267		15 FEB 65	UWP
G		REVISED PER TDRR 17613		24 MAR 65	RJJ
H		REVISED PER TDRR 18690		4 MAY 65	[illegible]
J		REVISED PER TDRR 18691		5 [illegible] 65	[illegible]
K		REVISED PER TDRR 18695		11 MAY 65	A.N.
L		REVISED PER TDRR 20119		19 JUN 65	A.N.
M		REVISED PER TDRR 20687		12 JUL 65	RLP
N		REVISION STATUS CHANGED		14 JUL 65	MCR
P		REVISED PER TDRR 20785		20 JUL 65	WJR RWH
R		REVISED PER TDRR 26406		23 FEB 66	JM

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 3

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO 1007533
SCALE 1/1
WT
SHEET 2 OF 2

R
1007533

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1007533

REVISIONS 12031			
SYM	DESCRIPTION	DATE	APPROVAL

DASH NO. 011

PART NO.	DESCRIPTION	REQD.
1008523-001	Frame, Tray 3	1
1006774	Insulator, Wrapost, Female Miniature	182
1006781-2	Contact, Wrapost, Female Miniature	182
1010382-1	Contact, Blade Edge Connector	84
1010383-1	Insulator, Wrapost, Male	84
1010622-1	Connector Receptacle	1
1010620-4	Pin, Guide	24
1010620-5	Pin, Guide	2
1001317	Retainer, Jack Screw	1
1008172	Screw, Jack	36
1008098	Screw, Socket Head	1
1004206	Washer, Thrust	72
1008099-2	Washer	1
MS 16995-10	Screw, Cap, Socket Head	3
MS 16995-11	Screw, Cap, Socket Head	2
MS 21045 C 04	Nut, Self-Locking Hex	2
MS 171433	Pin, Spring	36
1004207	Drive Cylinder	36
1008552-001	Gasket, Connector	1
1008551-001	Gasket, Connector	1

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007573	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN Warren DATE 7/15/64
CHECKED
APPROVAL
APPROVAL D. A. Fast 8/24/64
NASA APPROVAL 8/26/64
MIT APPROVAL 3 Sep 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 3
(100 SERIES)

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007533
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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1007534 | A

REVISIONS 12031			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 13228	10-6-64	

PART NO.	DESCRIPTION	DASH NO. 011 REQD.	DASH NO. 021
1008524	Frame, Tray 4	1	1
1006774	Insulator, Wrapost, Female Miniature	184	184
1006781-2	Contact, Wrapost, Female Miniature	184	184
1010382-1	Contact, Blade Edge Connector	84	84
1010383-1	Insulator, Wrapost, Male	84	84
1010622-1	Connector Receptacle	1	1
1010620-4	Pin, Guide	24	24
1010620-5	Pin, Guide	2	2
1001317	Retainer, Jack Screw	1	1
1008172	Screw, Jack	36	36
1008098	Screw, Socket Head	1	1
1004206	Washer, Thrust	72	72
1008099-2	Washer	1	1
MS 16995-10	Screw, Cap, Socket Head	3	3
MS 16995-11	Screw, Cap, Socket Head	2	2
MS 21045 C 04	Nut, Self-Locking Hex	2	2
MS 171433	Pin, Spring	36	36
1004207	Drive Cylinder	36	36
1008552	Gasket, Connector	1	1
1008551	Gasket, Connector	1	1
	Harness (50 Series)	-	1
	Harness (100 Series)	1	-

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007574	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN Kanan DATE 7/15/64
CHECKED
APPROVAL
APPROVAL A. L. Fest 8/24/64
NASA APPROVAL 8/25/64
MIT APPROVAL 2 Sep 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 4

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007534
SCALE
WT
SHEET 1 OF 1

MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1007534 | B

REVISIONS 12031			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 13228	10-6-64	WK
B	REPLACED BY CONFIGURATION DWG REV C PER TDRR 13939	11/4/64	WK

		DASH NO. 011	DASH NO. 021
PART NO.	DESCRIPTION	REQD.	
1008524	Frame, Tray 4	1	1
1006774	Insulator, Wrapost, Female Miniature	184	184
1006781-2	Contact, Wrapost, Female Miniature	184	184
1010382-1	Contact, Blade Edge Connector	84	84
1010383-1	Insulator, Wrapost, Male	84	84
1010622-1	Connector Receptacle	1	1
1010620-4	Pin, Guide	24	24
1010620-5	Pin, Guide	2	2
1001317	Retainer, Jack Screw	1	1
1008172	Screw, Jack	36	36
1008098	Screw, Socket Head	1	1
1004206	Washer, Thrust	72	72
1008099-2	Washer	1	1
MS 16995-10	Screw, Cap, Socket Head	3	3
MS 16995-11	Screw, Cap, Socket Head	2	2
MS 21045 C 04	Nut, Self-Locking Hex	2	2
MS 171433	Pin, Spring	36	36
1004207	Drive Cylinder	36	36
1008552	Gasket, Connector	1	1
1008551	Gasket, Connector	1	1
	Harness (50 Series)	-	1
	Harness (100 Series)	1	-

Ⓑ REPLACED BY CONFIGURATION DWG REV C

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007574	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN Kaiser DATE 7/15/64
CHECKED
APPROVAL
APPROVAL A. L. Test 8/24/64
NASA APPROVAL 8/25/64
MIT APPROVAL W. Kupfer 2 Sep 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

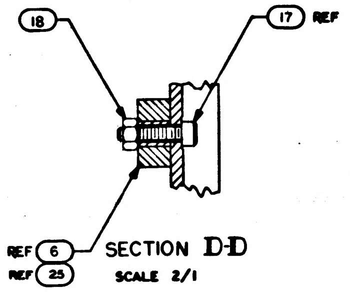
FRAME ASSEMBLY
TRAY 4

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007534
SCALE
WT
SHEET 1 OF 1

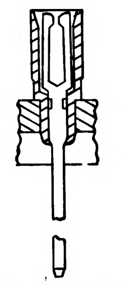
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

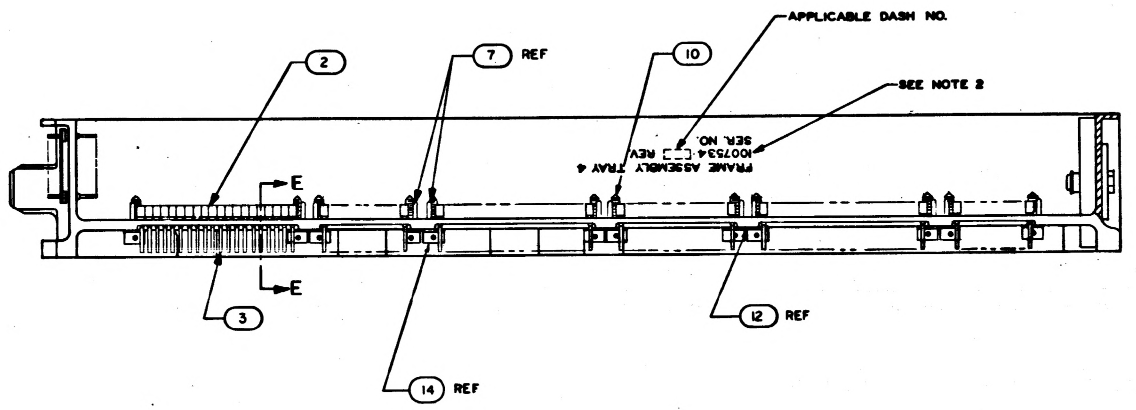
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939	11/4/64	WR

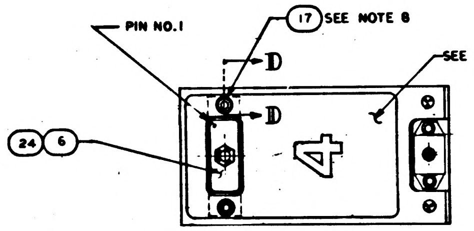


SECTION D-D
SCALE 2/1

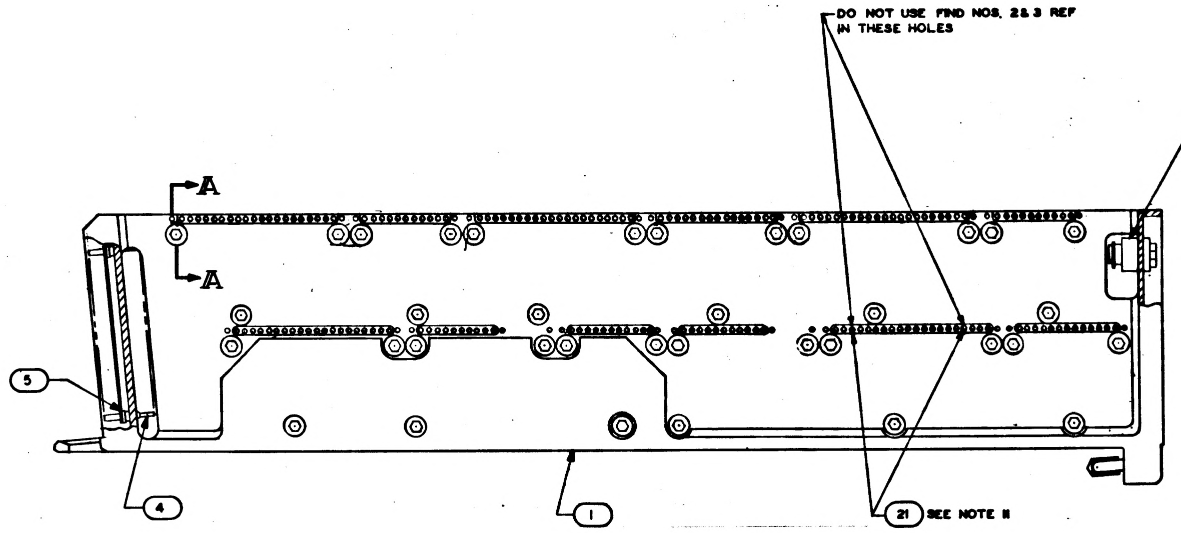


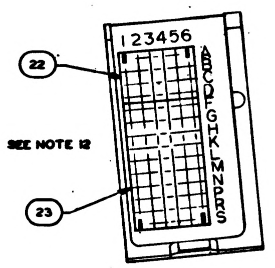
PARTIAL SECTION E-E
180 PLACES

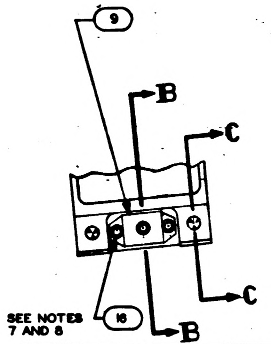


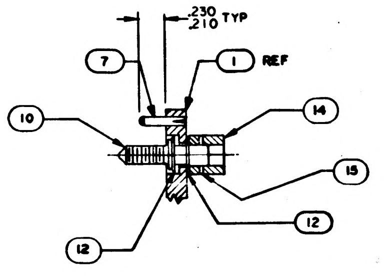


Ⓒ REPLACES WORD DWG REV B

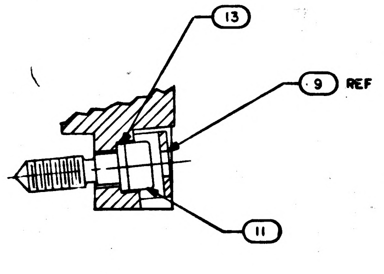




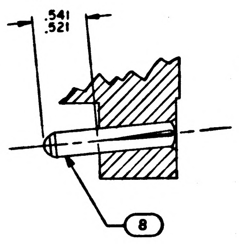




SECTION A-A
SCALE 2/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MARK PER ND1002019 (BLACK) .100/.140 HIGH (SERIALIZE PER ND1002023.
3. ASSEMBLE FIND NUMBERS 2,3,4, AND 5 PEP ND 1002136
4. BOND FIND NO.19 AND 20 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NOS 16 & 17 TO FIND NO. 1 TO BE 5.0–5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005
ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071
ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS
10. PROCURE PER PS1007144.
11. BOND FIND NO. 21 INTO HOLES FOR 46A4J8-3 AND -17 PER ND1002004, TYPE I.
12. BOND FIND NOS. 22 AND 23 TO FIND NO. 5 PER ND1002237.
13. BOND FIND NO. 26 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NO. 26 AND THE ADJOINING AREA.
14. BOND FIND NO. 25 ONTO FIND NO 26 AS PREPARED IN NOTE 13 PER ND1002004 TYPE I (ALL BARE WIRE MUST BE COMPLETELY COVERED).

MILTER

LIST OF MATERIALS

QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		021	011				
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	26
		1	1		1006712-3	RESISTOR, TEMPERATURE SENSITIVE	25
		—	1		1010821-1	CONNECTOR RECEPTACLE	24
		—	☒		1009564	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	23
		1	1		1008551	GASKET CONNECTOR TRAY	22
		2	2		1008256	PIN POLARIZING	21
		☒	—		1009554	WIRING DIAGRAM	REF
		1	—		1015742	WIRE LIST AA	20
		1	—		1008271	WIRING HARNESS A	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		36	36		MS171433	PIN, SPRING	15
		36	36		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		72	72		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		36	36		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		1010620-4	PIN, GUIDE	7
		1	—		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		180	180		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		180	180		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	1		1008524	FRAME	1

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007574		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ±.02
ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN [illegible] DATE [illegible]
CHECKED [illegible] 7 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible]
NASA APPROVAL W. J. [illegible] 11-4-64
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

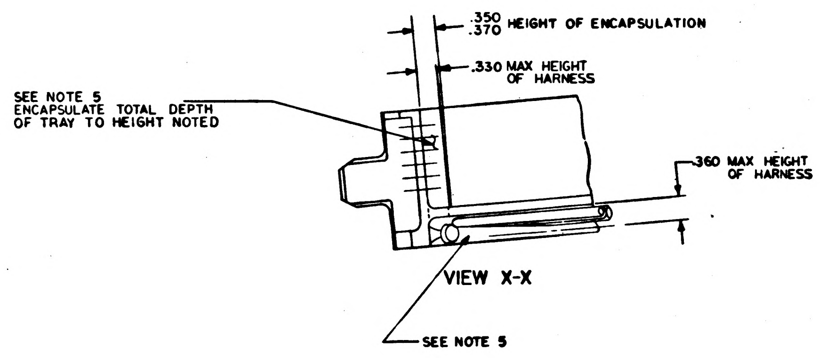
FRAME ASSEMBLY TRAY 4

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007534
SCALE 1/1
WT
SHEET 1 OF 2

1007534 C

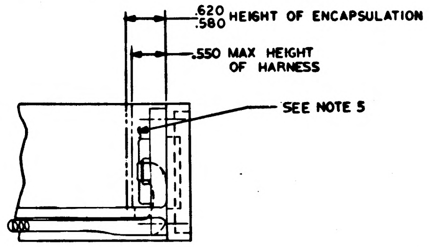
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13739	1/7/64	WK

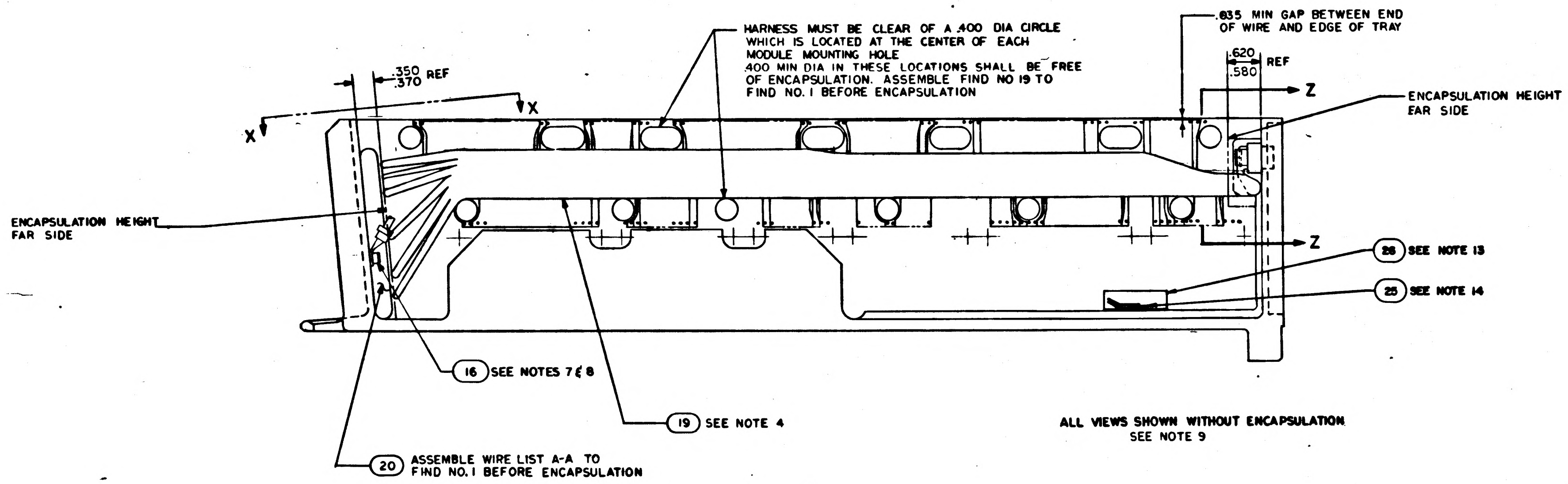


.350
.370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
SEE NOTE 5

VIEW X-X

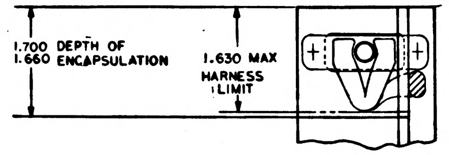


.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5



HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE .400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO 19 TO FIND NO. 1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.620
.580 REF
.350
.370 REF
X
X
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
26 SEE NOTE 13
25 SEE NOTE 14
16 SEE NOTES 7 & 8
19 SEE NOTE 4
20 ASSEMBLE WIRE LIST A-A TO FIND NO. 1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9



1.700
1.660 DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT

SECTION Z-Z

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
Cambridge, Mass
Contract NAS 9-497
DRAWN T. Kaufh DATE
CHECKED 7 OCT 64
APPROVAL
APPROVAL 10-30-64
NASA APPROVAL W. J. Rhine 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 4

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007534
SCALE 1/1
WT
SHEET 2 OF 2

1007534 C

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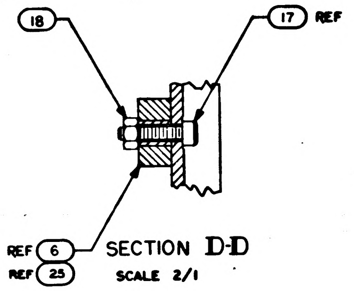
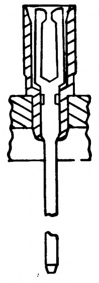
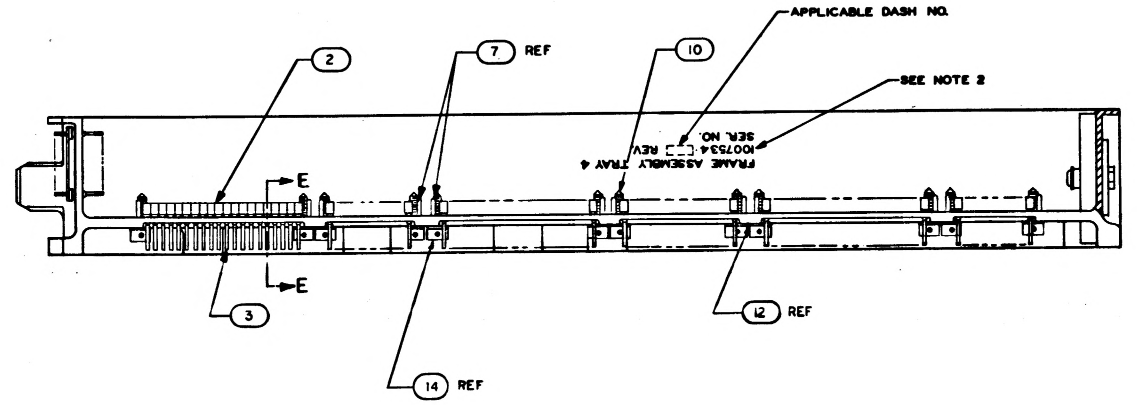
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939	11/4/64	WR
D	REVISED PER TDRR 15153	29 Jan 64	

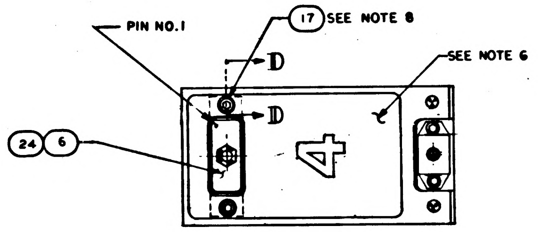


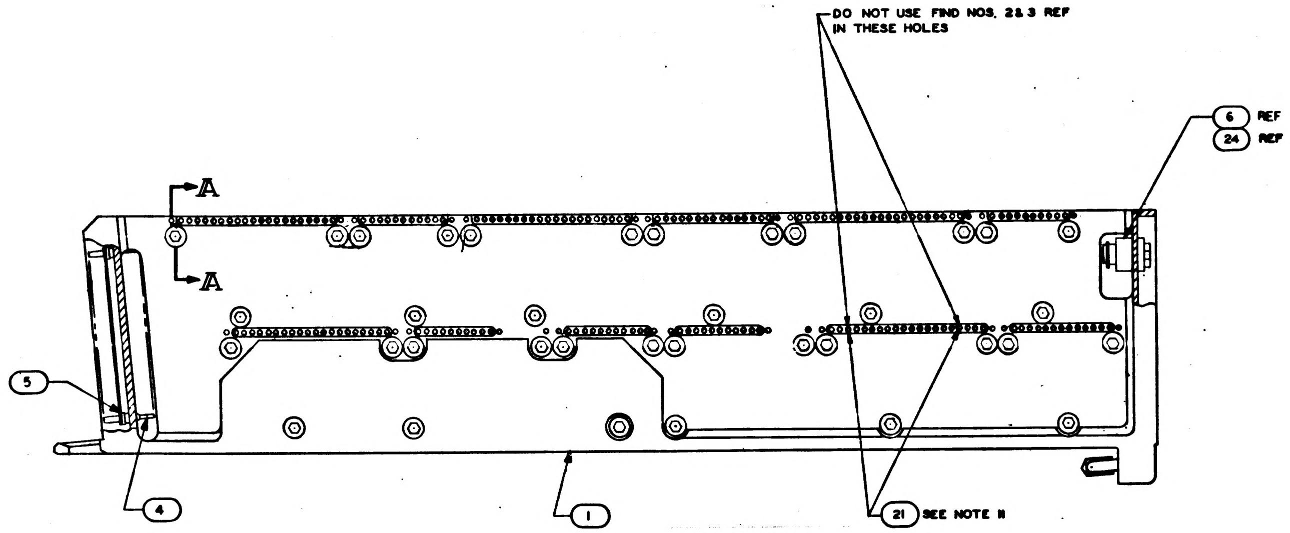
SECTION D-D
SCALE 2/1



PARTIAL SECTION E-E
180 PLACES







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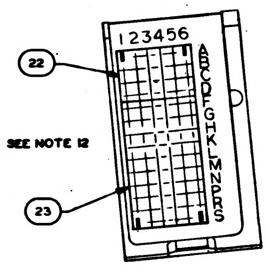
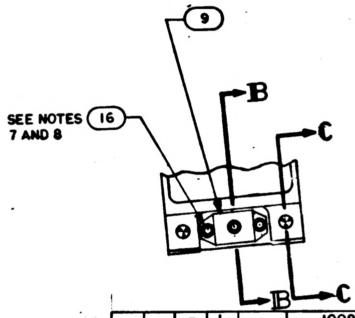
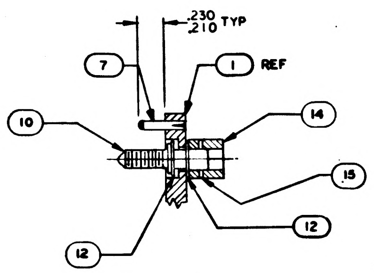
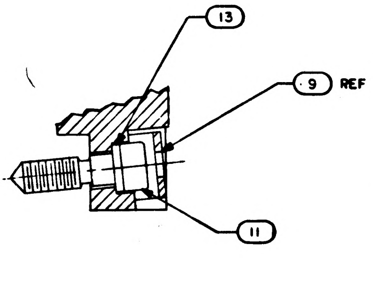


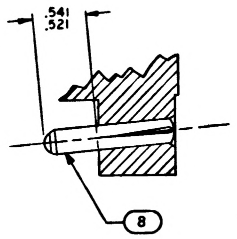




SECTION A-A
SCALE 2/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MARK PER ND1002019 (BLACK) .100/.140 HIGH (SERIALIZE PER ND1002023.
3. ASSEMBLE FIND NUMBERS 2,3,4, AND 5 PEP ND 1002136
4. BOND FIND NO. 19 AND 20 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NOS 16 & 17 TO FIND NO. 1 TO BE 5.0–5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005
   ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071
   ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS
10. PROCURE PER PS1007144.
11. BOND FIND NO. 21 INTO HOLES FOR 45A4J9-3 AND -17 PER ND1002004, TYPE I.
12. BOND FIND NOS. 22 AND 23 TO FIND NO. 5 PER ND1002237.
13. BOND FIND NO. 26 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NO. 26 AND THE ADJOINING AREA.
14. BOND FIND NO. 25 ONTO FIND NO 26 AS PREPARED IN NOTE 13 PER ND1002004 TYPE I (ALL BARE WIRE MUST BE COMPLETELY COVERED).

		–	1		1008621	WIRE LIST AA	28
		–	1		1008626	WIRING HARNESS A	27
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	26
		1	1		1006712-3	RESISTOR, TEMPERATURE SENSITIVE	25
		–	1		1010821-1	CONNECTOR RECEPTACLE	24
		–	X		1009564	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	23
		1	1		1008551	GASKET CONNECTOR TRAY	22
		2	2		1008256	PIN POLARIZING	21
		X	–		1009554	WIRING DIAGRAM	REF
		1	–		1015742	WIRE LIST AA	20
		1	–		1008271	WIRING HARNESS A	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		36	36		MS171433	PIN, SPRING	15
		36	36		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		72	72		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		36	36		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		1010620-4	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		180	180		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		180	180		1006774	INSULATOR, WRAPOST, FEMALE MIN.	2
		1	1		1008524	FRAME	1
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
QUANTITY REQUIRED					LIST OF MATERIALS		

1007574		
1007574		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —— DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL ——
HEAT TREATMENT ——
FINAL FINISH ——

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN DATE 29 Sep
CHECKED 7 Oct 64
APPROVAL 8 Oct 64
APPROVAL
NASA APPROVAL W J 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

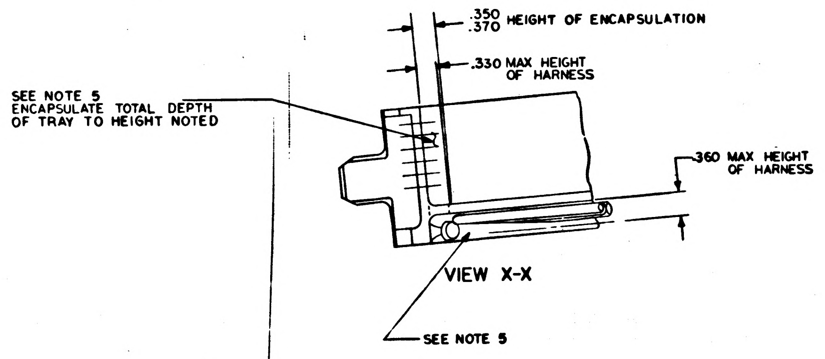
FRAME ASSEMBLY
TRAY 4

CODE IDENT NO. | SIZE E | NASA DRAWING NO. 1007534
SCALE 1/1 | WT | SHEET 1 OF 2

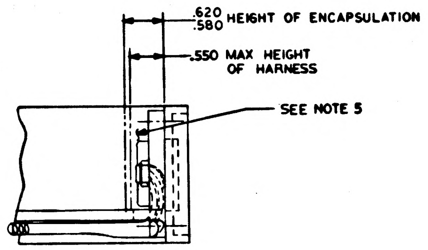
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

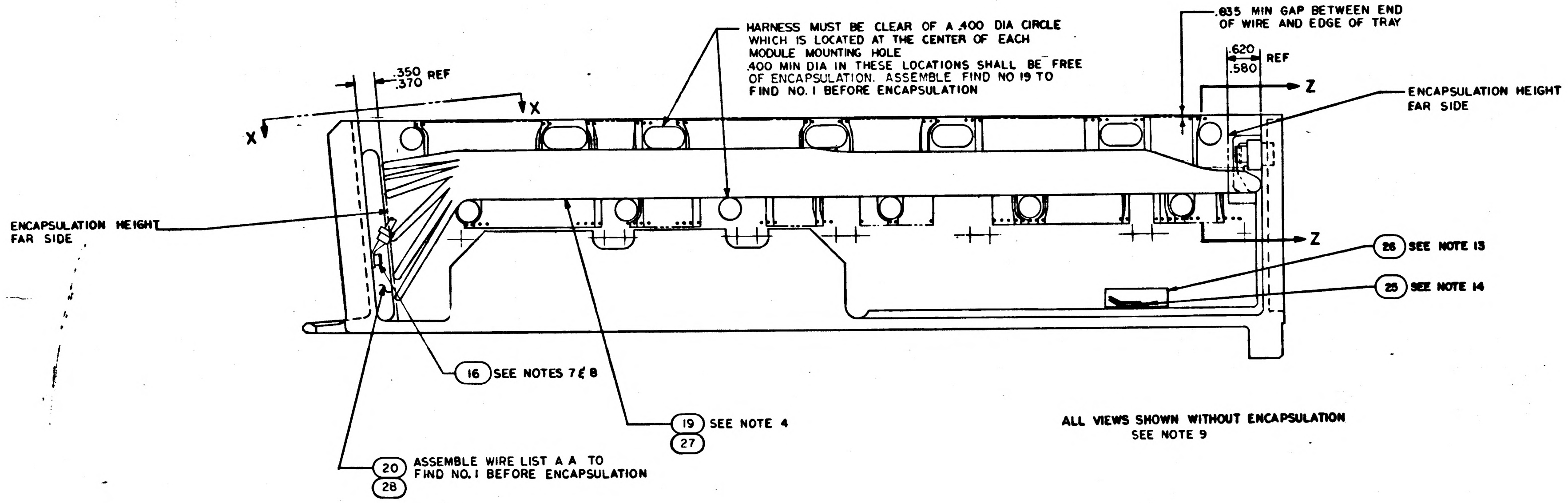
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13739	11/4/64	WK
D	REVISED PER TDRR 15153	29 Dec 64	T.G.M.

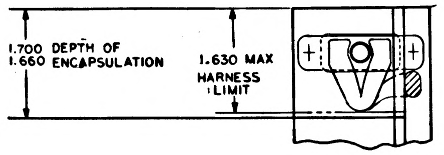

.350
.370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
SEE NOTE 5

VIEW X-X


.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5


HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO 19 TO FIND NO. 1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350
.370 REF
X
X
.620
.580 REF
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
26 SEE NOTE 13
25 SEE NOTE 14
16 SEE NOTES 7 & 8
19 SEE NOTE 4
27
20 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
28

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9


1.700
1.660 DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT

SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN T. K[illegible] DATE 29 Sept
CHECKED [illegible] 7 Oct 64
APPROVAL [illegible] 8 Oct 64
APPROVAL [illegible] 10-20-64
NASA APPROVAL W. J. [illegible] 11-4-64
MIT APPROVAL [illegible] 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 4

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007534
SCALE 1/1
WT
SHEET 2 OF 2

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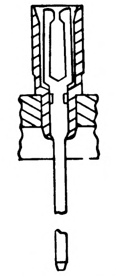
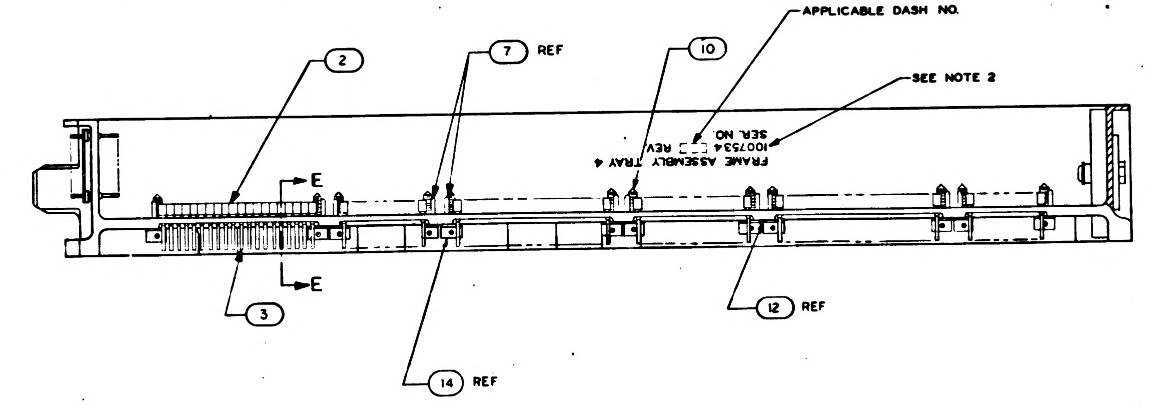
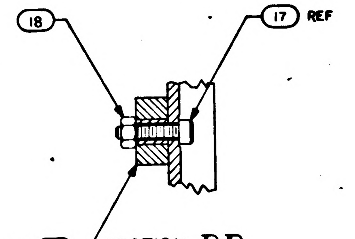
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939	11/4/64	WK
D	REVISED PER TDRR 15153	29 Dec 64	WK
E	REVISED PER TDRR 15948	11-FEB-65	CW

REVISIONS

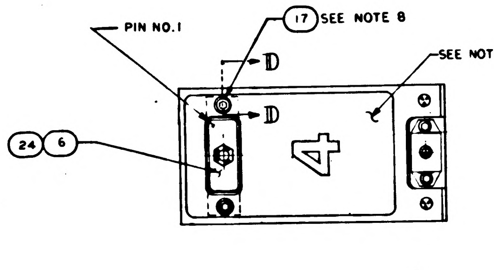


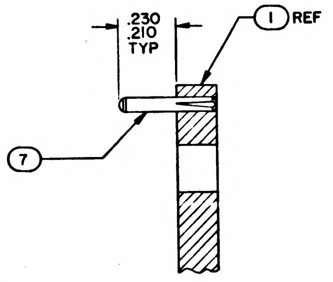
PARTIAL SECTION E-E
180 PLACES





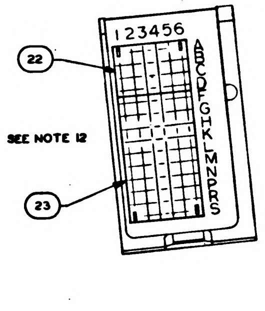
SECTION D-D
SCALE 2/1

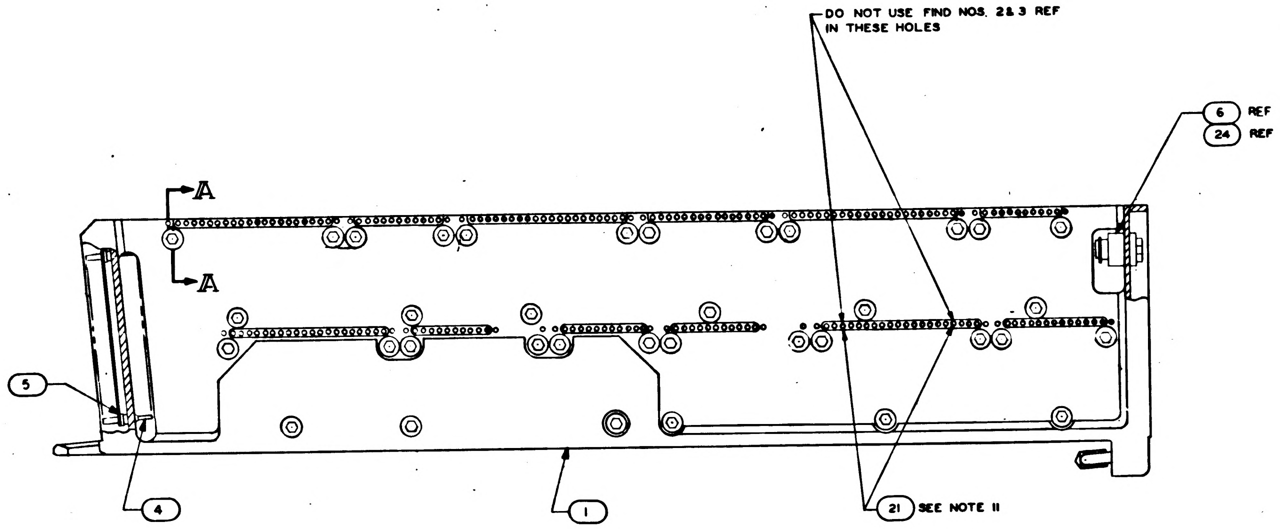


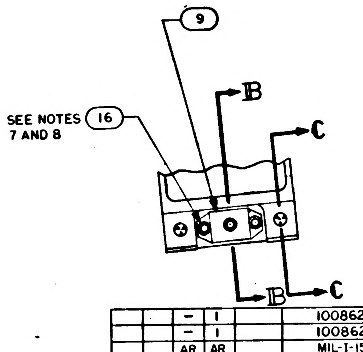


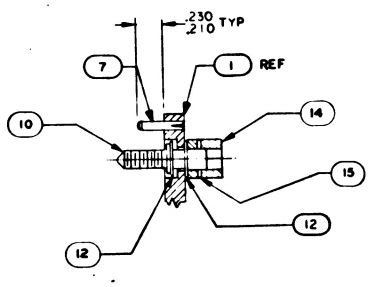
SECTION A-A
SCALE 4/1
-011 CONFIGURATION

ⓒ REPLACES WORD DWG REV B

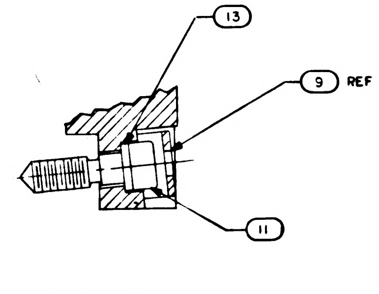




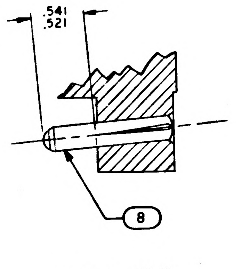




SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MARK PER ND1002019 (BLACK) .100/.140 HIGH (SERIALIZE PER ND1002023.
3. ASSEMBLE FIND NUMBERS 2,3,4, AND 5 PEP ND 1002136
4. BOND FIND NO. 19 AND 20 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NOS 16 & 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005
ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071
ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS
10. PROCURE PER PS1007144.
11. BOND FIND NO. 21 INTO HOLES FOR 45A4J9-3 AND -17 PER ND1002004, TYPE I.
12. BOND FIND NOS. 22 AND 23 TO FIND NO. 5 PER ND1002237.
13. BOND FIND NO. 26 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NO. 26 AND THE ADJOINING AREA.
14. BOND FIND NO. 25 ONTO FIND NO 26 AS PREPARED IN NOTE 13 PER ND1002004 TYPE I (ALL BARE WIRE MUST BE COMPLETELY COVERED).

QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		021	011				
		—	1		1008621	WIRE LIST AA	28
		—	1		1008626	WIRING HARNESS A	27
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	26
		1	1		1006712-3	RESISTOR, TEMPERATURE SENSITIVE	25
		—	1		1010821-1	CONNECTOR RECEPTACLE	24
		—	X		1009564	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	23
		1	1		1008551	GASKET CONNECTOR TRAY	22
		2	2		1008256	PIN POLARIZING	21
		X	—		1009554	WIRING DIAGRAM	REF
		1	—		1015742	WIRE LIST AA	20
		1	—		1008271	WIRING HARNESS A	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		36	—		MS171433	PIN, SPRING	15
		36	—		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		72	—		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		36	—		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		1010620-4	PIN, GUIDE	7
		1	—		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		180	180		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		180	180		1006774	INSULATOR, WRAPOST, FEMALE MIN.	2
		1	1		1008524	FRAME	1

LIST OF MATERIALS

1007534 E

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007574		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ±.02
ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN DATE 29 Sep 64
CHECKED 7 Oct 64
APPROVAL 8 Oct 64
APPROVAL
NASA APPROVAL W. J. Rhine 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

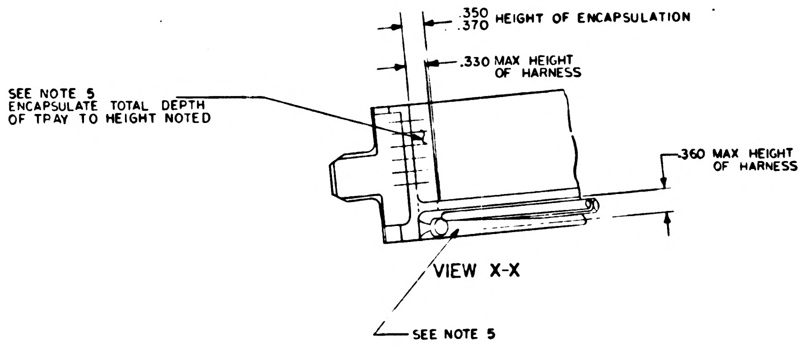
FRAME ASSEMBLY
TRAY 4

CODE IDENT NO.
SIZE E
NASA DRAWING NO 1007534
SCALE 1/1
WT
SHEET 1 OF 2

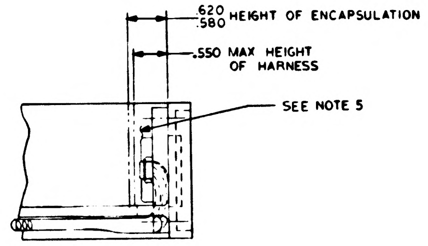
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

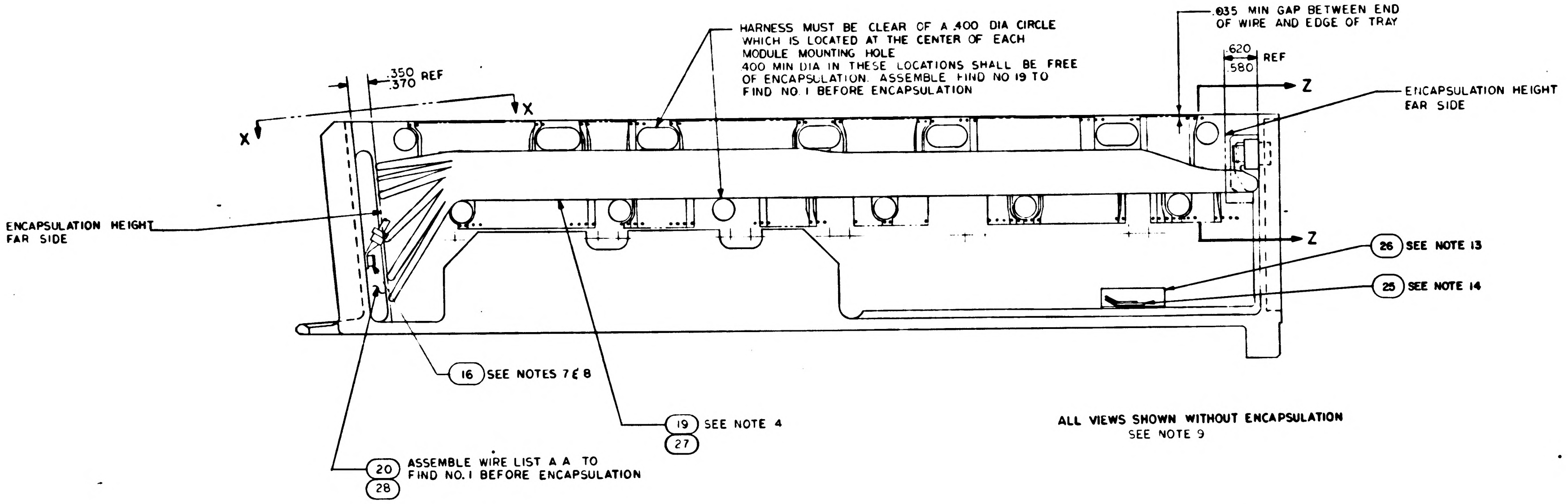
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 12732	1/4/64	WK
D	REVISED PER TDRR 15153	29 Jan 64	WK
E	REVISED PER TDRR 15948	11-FEB-65	

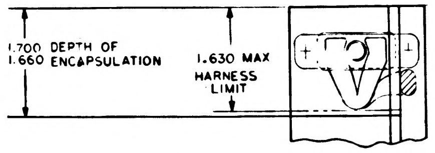

.350
.370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
SEE NOTE 5

VIEW X-X


.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5


HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO 19 TO FIND NO 1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.620
.580 REF
.350
.370 REF
X
X
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
26 SEE NOTE 13
25 SEE NOTE 14
16 SEE NOTES 7 & 8
19
27 SEE NOTE 4
20
28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9


1.700 DEPTH OF
1.660 ENCAPSULATION
1.630 MAX HARNESS LIMIT

SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DWG NO
DRAWN DATE
CHECKED 7 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

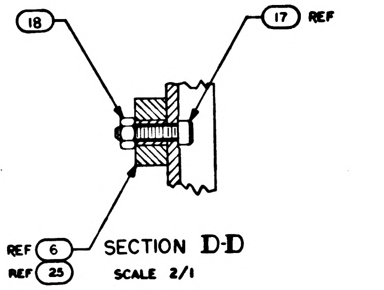
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY TRAY 4

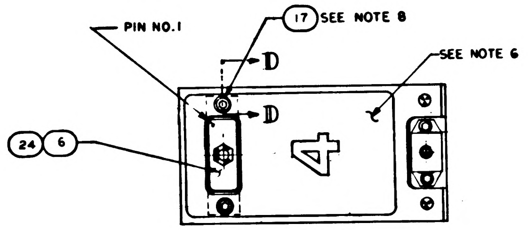
CODE IDENT NO
SIZE E
NASA DRAWING NO 1007534
SCALE 1/1
WT
SHEET 2 OF 2

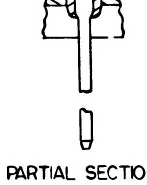
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
C	REPLACES WORD DWG REV B PER TDRR 13939	11/4/64	WK
D	REVISED PER TDRR 15153	29 Dec 64	WF
E	REVISED PER TDRR 15948	FEB 65	[illegible]
F	REVISED PER TDRR 16268	15 FEB 65	ET

NOTICE — WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

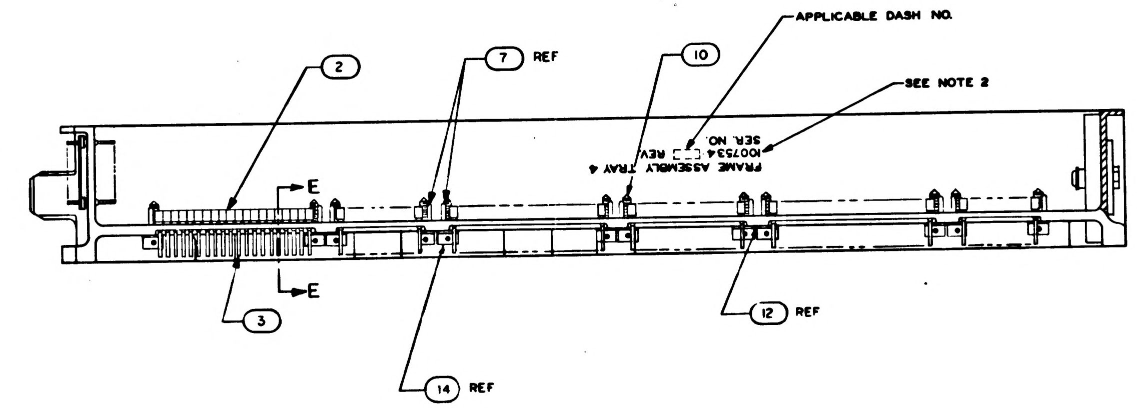


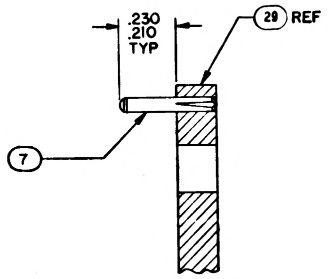
SECTION D-D
SCALE 2/1





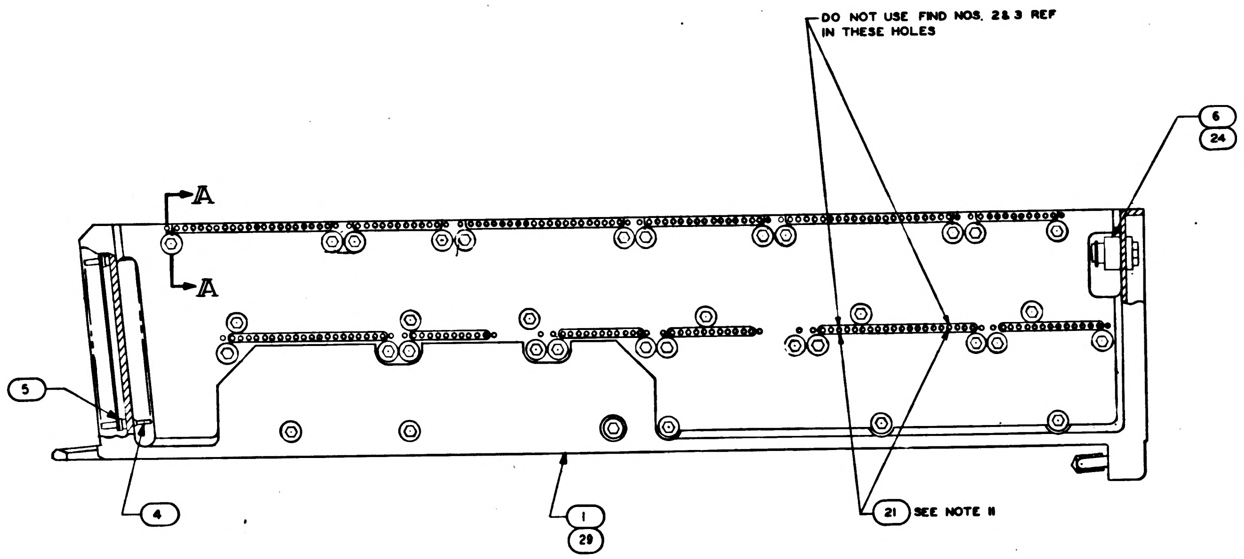
PARTIAL SECTION E-E
180 PLACES

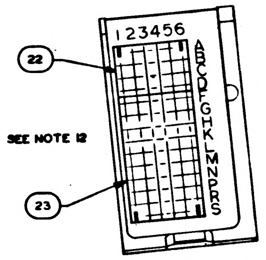


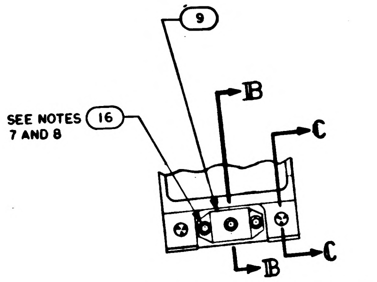


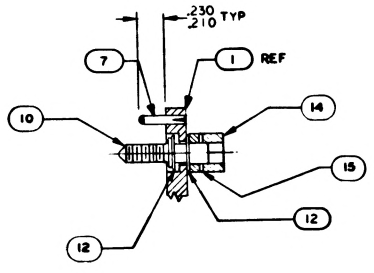
SECTION A-A
SCALE 4/1
-011 CONFIGURATION

Ⓒ REPLACES WORD DWG REV B

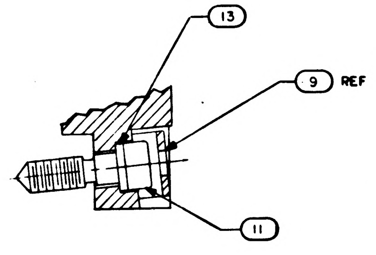




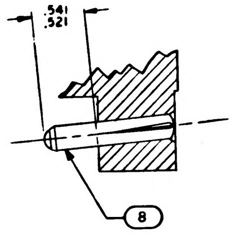




SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MARK PER ND1002019 (BLACK) .100/.140 HIGH (SERIALIZE PER ND1002023.
3. ASSEMBLE FIND NUMBERS 2,3,4, AND 5 PEP ND 1002136
4. BOND FIND NO. 19 AND 20 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NOS 16 & 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005
ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071
ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS
10. PROCURE PER PS1007144.
11. BOND FIND NO. 21 INTO HOLES FOR 45A4J9-3 AND -17 PER ND1002004, TYPE I.
12. BOND FIND NOS. 22 AND 23 TO FIND NO. 5 PER ND1002237.
13. BOND FIND NO. 26 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NO. 26 AND THE ADJOINING AREA.
14. BOND FIND NO. 25 ONTO FIND NO 26 AS PREPARED IN NOTE 13 PER ND1002004 TYPE I (ALL BARE WIRE MUST BE COMPLETELY COVERED).

		–	1		1008652	FRAME	29
		–	1		1008621	WIRE LIST AA	28
		–	1		1008626	WIRING HARNESS A	27
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	26
		1	1		1006712-3	RESISTOR, TEMPERATURE SENSITIVE	25
		–	1		1010821-1	CONNECTOR RECEPTACLE	24
		–	X		1009564	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	23
		1	1		1008551	GASKET CONNECTOR TRAY	22
		2	2		1008256	PIN POLARIZING	21
		X	–		1009554	WIRING DIAGRAM	REF
		1	—		1015742	WIRE LIST AA	20
		1	—		1008271	WIRING HARNESS A	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		36	—		MS171433	PIN, SPRING	15
		36	—		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		72	—		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		36	—		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		1010620-4	PIN, GUIDE	7
		1	—		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		180	180		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		180	180		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	[illegible]		1008524	FRAME	1
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
QUANTITY REQUIRED					LIST OF MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007574		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN T. Kennedy DATE 29 Sept 64
CHECKED [illegible] 7 Oct 64
APPROVAL [illegible] 8 Oct 64
APPROVAL [illegible] 11-2-64
NASA APPROVAL W. J. R[illegible] 11-4-64
MIT APPROVAL [illegible] 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

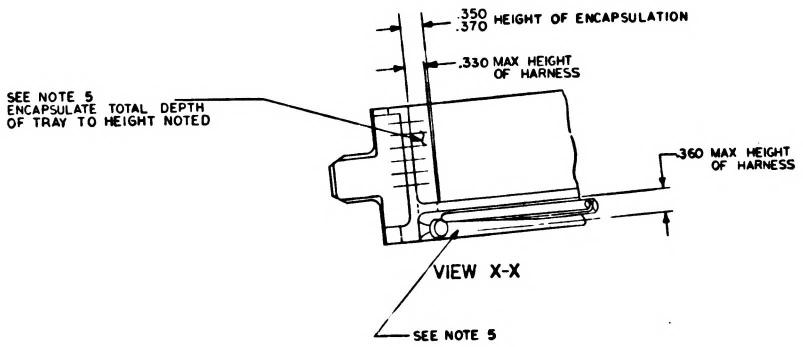
FRAME ASSEMBLY
TRAY 4

CODE IDENT NO. SIZE E NASA DRAWING NO 1007534
SCALE 1/1 WT SHEET 1 OF 2

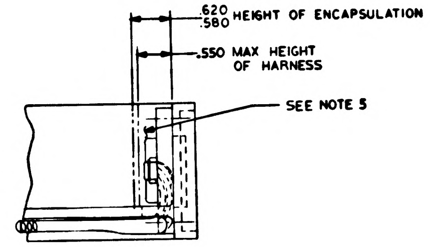
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

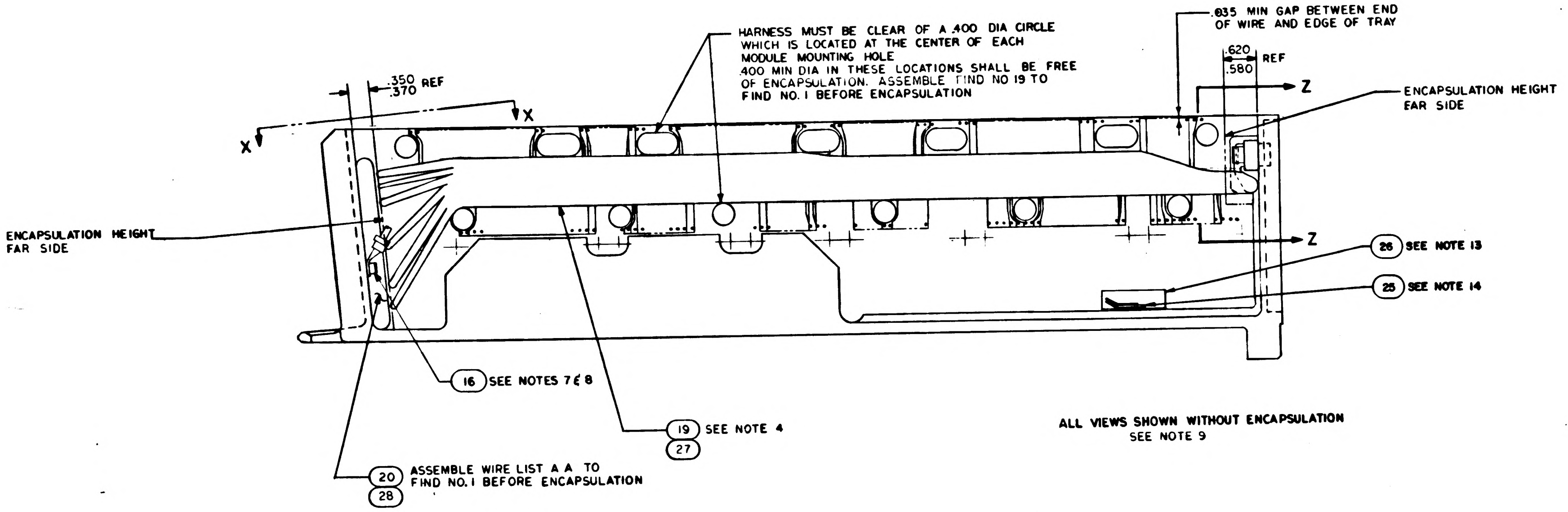
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13739	11/4/64	WK
D	REVISED PER TDRR 15153	29 Dec 64	[illegible]
E	REVISED PER TDRR 5948	11 FEB 65	[illegible]
F	REVISED PER TDRR 16268	15 FEB 65	[illegible]

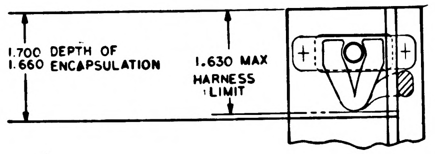

.350
.370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
SEE NOTE 5

VIEW X-X


.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5


HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO 19 TO FIND NO. 1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.620
.580 REF
.350
.370 REF
X
X
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
26 SEE NOTE 13
25 SEE NOTE 14
16 SEE NOTES 7 & 8
19
27 SEE NOTE 4
20
28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9


1.700 DEPTH OF
1.660 ENCAPSULATION
1.630 MAX HARNESS LIMIT

SECTION Z-Z

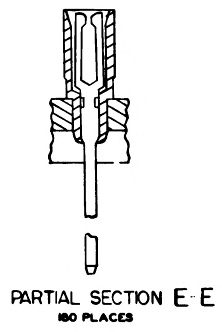
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

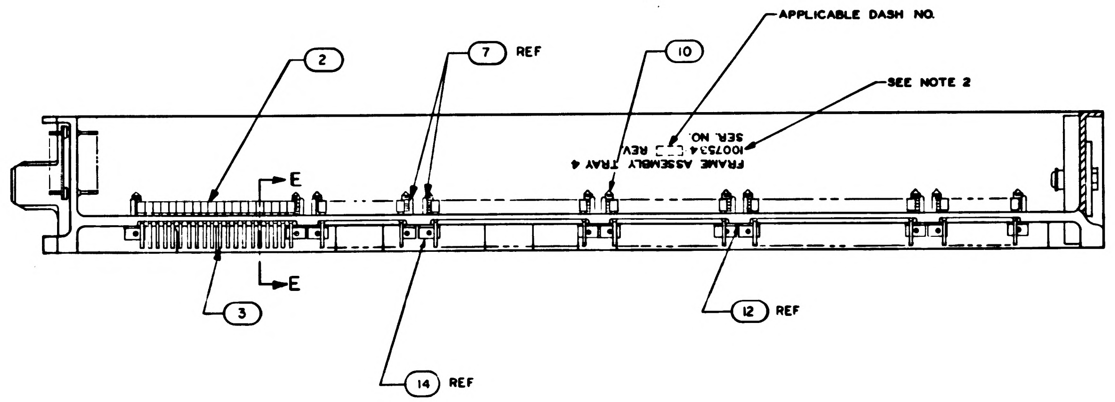
LIST OF MATERIALS

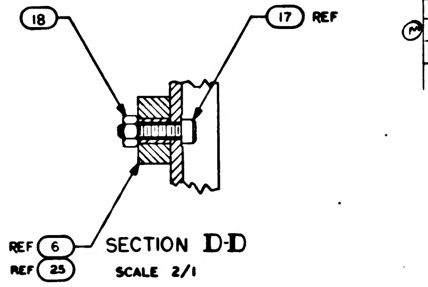
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ANGLES ± DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB CAMBRIDGE MASS DWG NO Contract NAS 9-497	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
MATERIAL	DRAWN DATE 29 Sept CHECKED 7 Oct 64 APPROVAL 8 Oct 64 APPROVAL 10-21-64	FRAME ASSEMBLY TRAY 4
HEAT TREATMENT	NASA APPROVAL 11-4-64	CODE IDENT NO. SIZE E NASA DRAWING NO. 1007534
FINAL FINISH	MIT APPROVAL	SCALE 1/1 WT SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

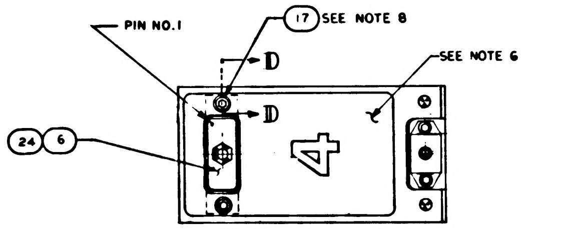
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939	11/4/64	WK
D	REVISED PER TDRR 15153	29 Jan 65	W.F.
E	REVISED PER TDRR 15948	FEB 65	
F	REVISED PER TDRR 16268	15 FEB 65	ET
G	REVISED PER TDRR 17613	25 MAR 65	

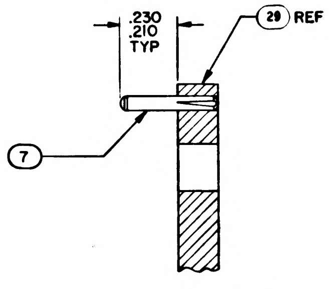

PARTIAL SECTION E-E
180 PLACES



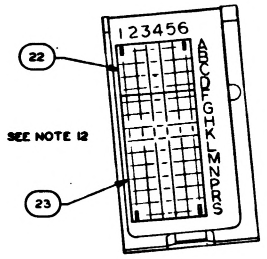


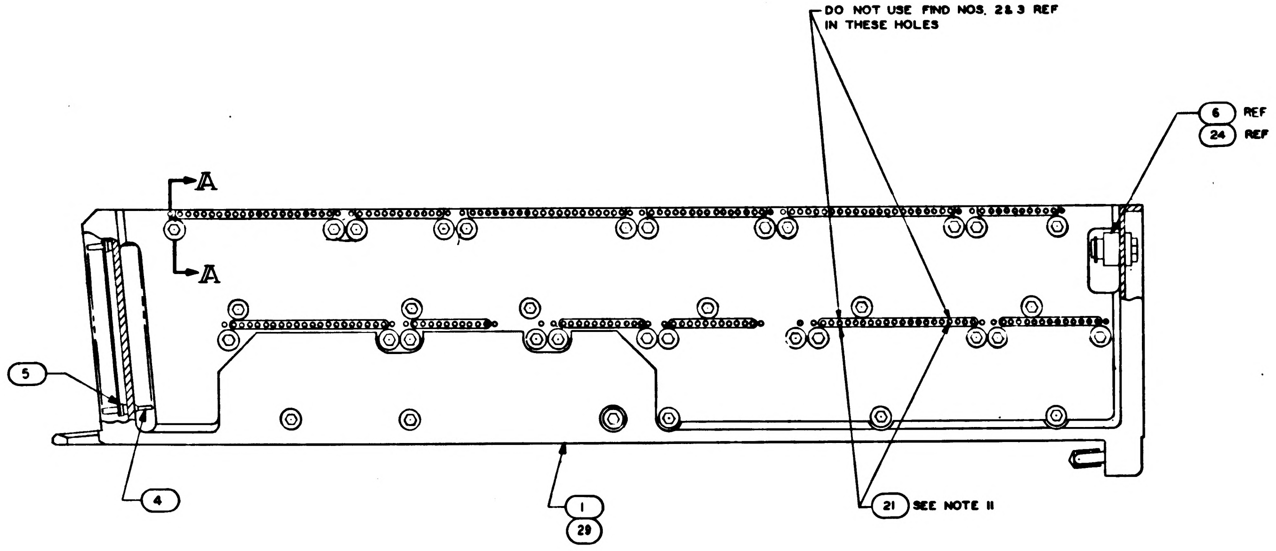
SECTION D-D
SCALE 2/1



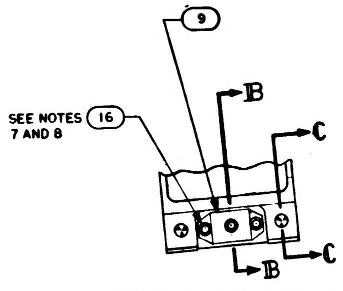


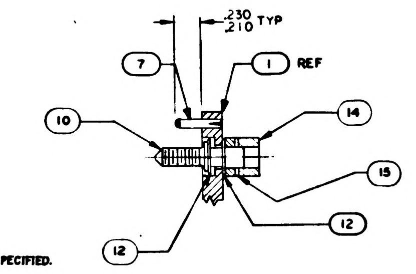
SECTION A-A
SCALE 4/1
-011 CONFIGURATION



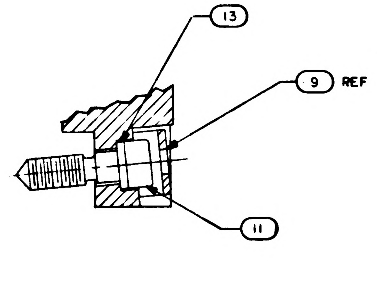


© REPLACES WORD DWG REV B

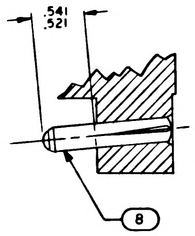




SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MARK PER ND1002019 (BLACK) .100/.140 HIGH (SERIALIZE PER ND1002023
3. ASSEMBLE FIND NUMBERS 2,3,4, AND 5 PEP ND 1002136
4. BOND FIND NO.19 AND 20 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) .010 ABOVE TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME UNLESS OTHERWISE SPECIFIED.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NOS 16 & 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005 ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071 ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS
10. PROCURE PER PS1007144.
11. BOND FIND NO. 21 INTO HOLES FOR 45A4J9-3 AND -17 PER ND1002004, TYPE I.
12. BOND FIND NOS. 22 AND 23 TO FIND NO. 5 PER ND1002237.
13. BOND FIND NO. 26 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NO. 26 AND THE ADJOINING AREA.
14. BOND FIND NO. 25 ONTO FIND NO 26 AS PREPARED IN NOTE 13 PER ND1002004 TYPE I (ALL BARE WIRE MUST BE COMPLETELY COVERED).

		—	1		1008652	FRAME	29
		—	1		1008621	WIRE LIST AA	28
		—	1		1008626	WIRING HARNESS A	27
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	26
		1	1		1006712-3	RESISTOR, TEMPERATURE SENSITIVE	25
		—	1		1010821-1	CONNECTOR RECEPTACLE	24
		—	☒		1009564	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	23
		1	1		1008551	GASKET CONNECTOR TRAY	22
		2	2		1006256	PIN POLARIZING	21
		☒	—		1009554	WIRING DIAGRAM	REF
		1	—		1015742	WIRE LIST AA	20
		1	—		1008271	WIRING HARNESS A	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		36	—		MS171433	PIN, SPRING	15
		36	—		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		72	—		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		36	—		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		1010620-4	PIN, GUIDE	7
		1	—		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		180	180		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		180	180		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	~~1~~		1008524	FRAME	1
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
QUANTITY REQUIRED					LIST OF MATERIALS		

1007534 G

1007574		
1007574		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-4
DRAWN DATE 29 Sept
CHECKED 7 Oct 64
APPROVAL 8 Oct 64
APPROVAL 10-29-64
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

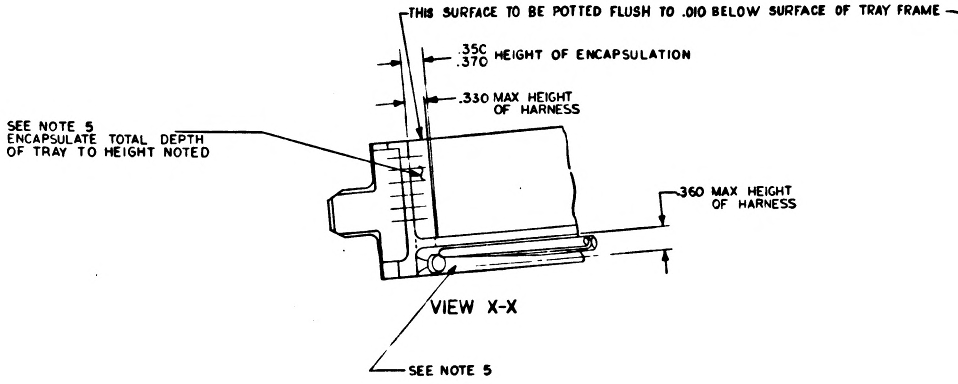
FRAME ASSEMBLY
TRAY 4

CODE IDENT NO.
SIZE E
NASA DRAWING NO 1007534
SCALE 1/1
WT
SHEET 1 OF 2

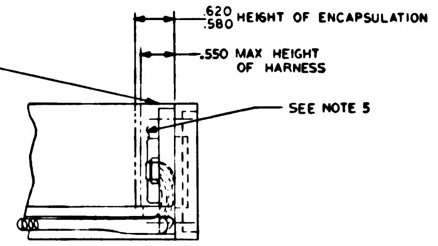
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

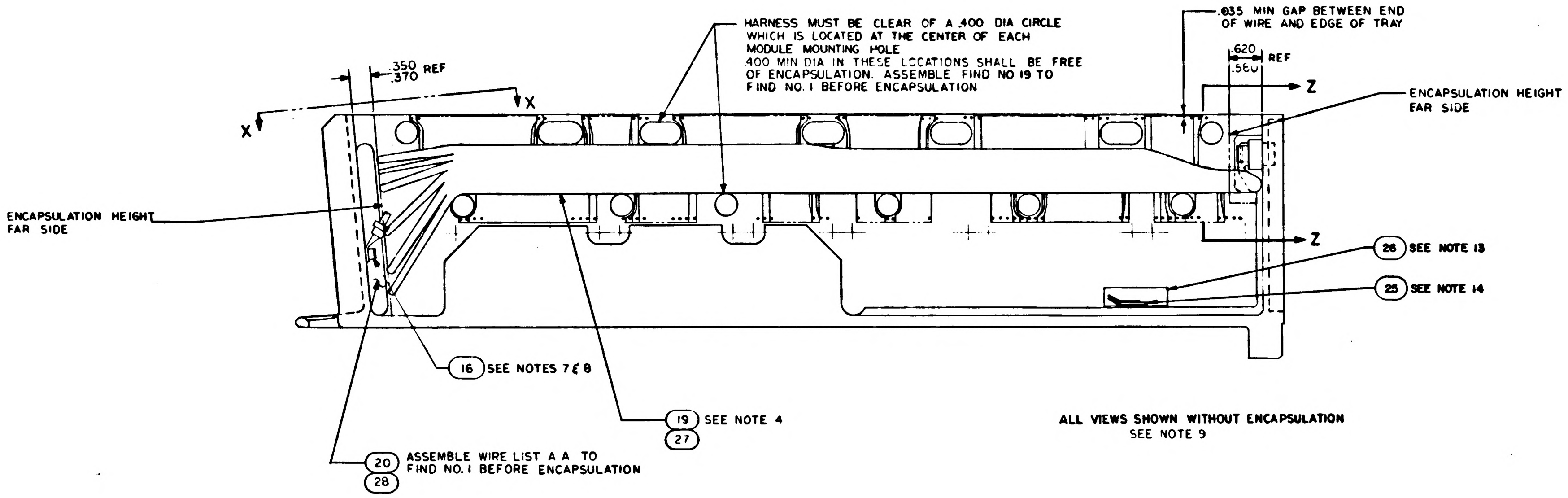
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 12939	[illegible]	[illegible]
D	REVISED PER TDRR 15153	29 [illegible] 64	[illegible]
E	REVISED PER TDRR 15948	11 FEB 65	[illegible]
F	REVISED PER TDRR 16268	15 FEB 65	[illegible]
G	REVISED PER TDRR 17613	25 MAR 65	J.K.

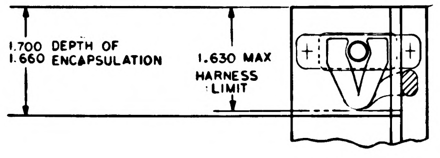

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.350 / .370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
SEE NOTE 5

VIEW X-X


.620 / .580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5


HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO 19 TO FIND NO. 1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350 / .370 REF
.620 / .560 REF
X
X
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
26 SEE NOTE 13
25 SEE NOTE 14
16 SEE NOTES 7 & 8
19 / 27 SEE NOTE 4
20 / 28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9


1.700 / 1.660 DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT

SECTION Z-Z

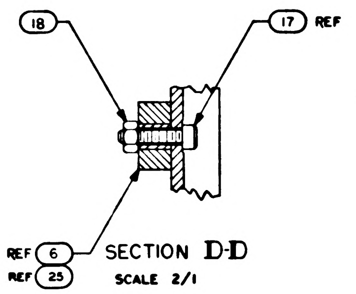
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

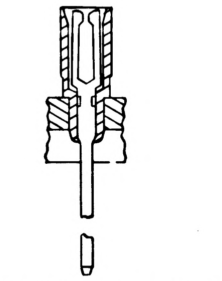
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ANGLES ± DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB CAMBRIDGE MASS Contract NAS 9-497	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
MATERIAL	DRAWN [illegible] DATE [illegible] CHECKED [illegible] 7 OCT 64 APPROVAL [illegible] 8 OCT 64 APPROVAL [illegible]	FRAME ASSEMBLY TRAY 4
HEAT TREATMENT	NASA APPROVAL [illegible] 11-4-64	CODE IDENT NO. — SIZE E — NASA DRAWING NO. 1007534
FINAL FINISH	MIT APPROVAL [illegible]	SCALE 1/1 — WT — SHEET 2 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

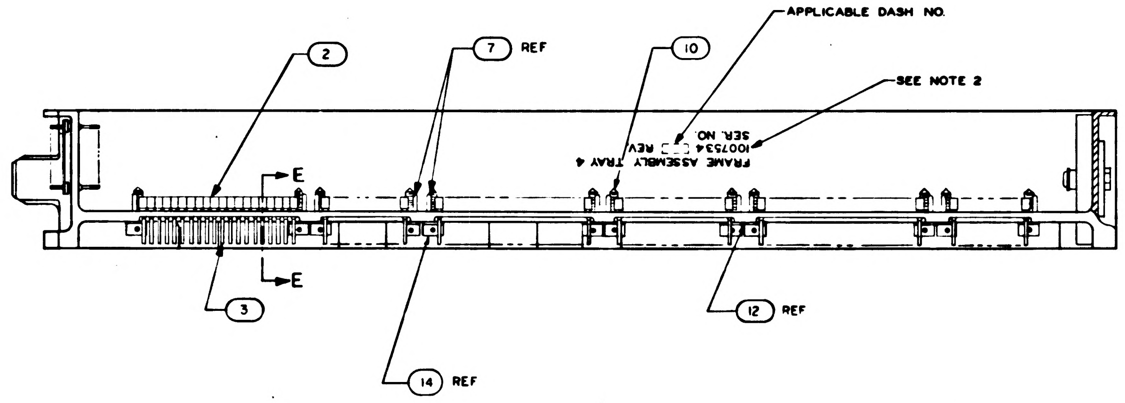
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939	11/4/64	WK
D	REVISED PER TDRR 15153	29 Jan 65	
E	REVISED PER TDRR 15948	11-FEB-65	
F	REVISED PER TDRR 16268	15 FEB 65	EF
G	REVISED PER TDRR 17613	25 MAR 65	
H	REVISED PER TDRR 18690	4 MAY 65	EF

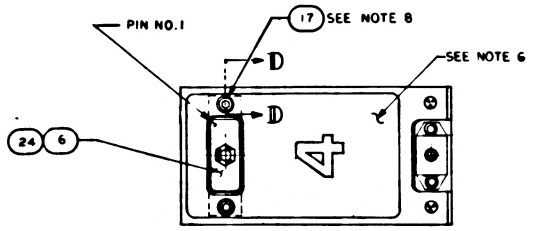


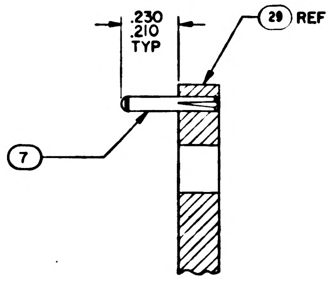
SECTION D-D
SCALE 2/1



PARTIAL SECTION E-E
180 PLACES

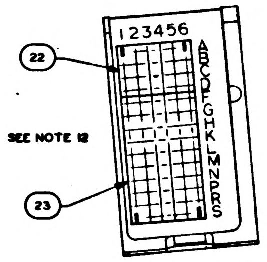


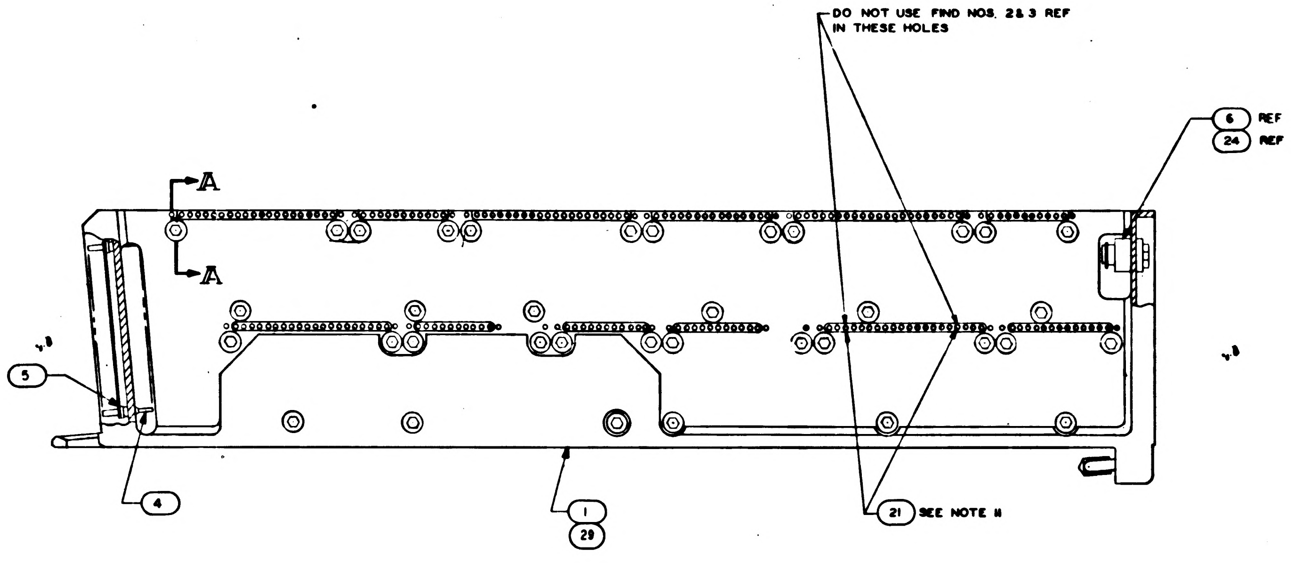


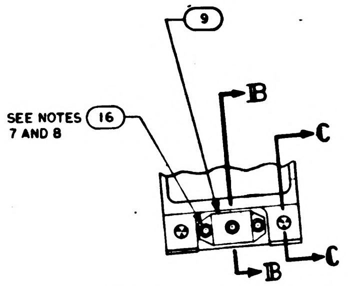


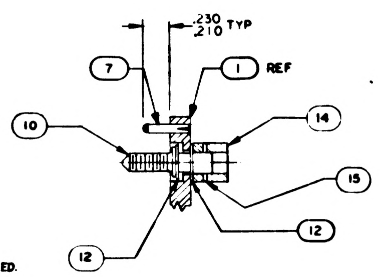
SECTION A-A
SCALE 4/1
-011 CONFIGURATION

© REPLACES WORD DWG REV B

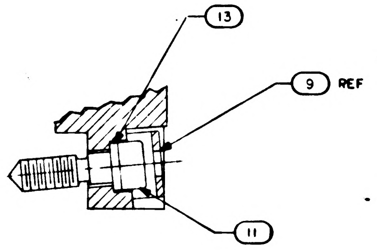




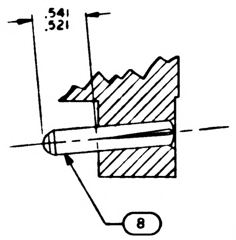




SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND1002019 (BLACK).100/.140 HIGH(SERIALIZE PER ND1002023.
3. ASSEMBLE FIND NUMBERS 2,3,4, AND 5 PEP ND 1002136
4. BOND FIND NO.19 AND 20 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) .010 ABOVE TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME UNLESS OTHERWISE SPECIFIED.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NOS 16 & 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005
   ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071
   ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS
10. PROCURE PER PS1007144.
11. BOND FIND NO. 21 INTO HOLES FOR 45A4J9-3 AND -17 PER ND1002004, TYPE I.
12. BOND FIND NOS. 22 AND 23 TO FIND NO. 5 PER ND1002237.
13. BOND FIND NO. 26 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND1002187 OVER FIND NO. 26 AND THE ADJOINING AREA.
14. BOND FIND NO. 25 ONTO FIND NO 26 AS PREPARED IN NOTE 13 PER ND1002004 TYPE I (ALL BARE WIRE MUST BE COMPLETELY COVERED).

		–	1		1008652	FRAME	29
		–	1		1008621	WIRE LIST AA	28
		–	1		1008626	WIRING HARNESS A	27
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	26
		1	1		1006712 3	RESISTOR, TEMPERATURE SENSITIVE	25
		–	1		1010821-1	CONNECTOR RECEPTACLE	24
		–	☒		1009564	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	23
		1	1		1008551	GASKET CONNECTOR TRAY	22
		2	2		1008256	PIN POLARIZING	21
		☒	–		1009554	WIRING DIAGRAM	REF
		1	–		1015742	WIRE LIST AA	20
		1	–		1008271	WIRING HARNESS A	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		36	–		MS171433	PIN, SPRING	15
		36	–		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		72	–		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		36	–		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		MS16556-604	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		180	180		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		180	180		1006774	INSULATOR, WRAPOST, FEMALE MIN.	2
		1	–		1008524	FRAME	1
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
QUANTITY REQUIRED					LIST OF MATERIALS		

1007574		
1007574		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN DATE 29 Sep
CHECKED 7 Oct 64
APPROVAL 8 Oct 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

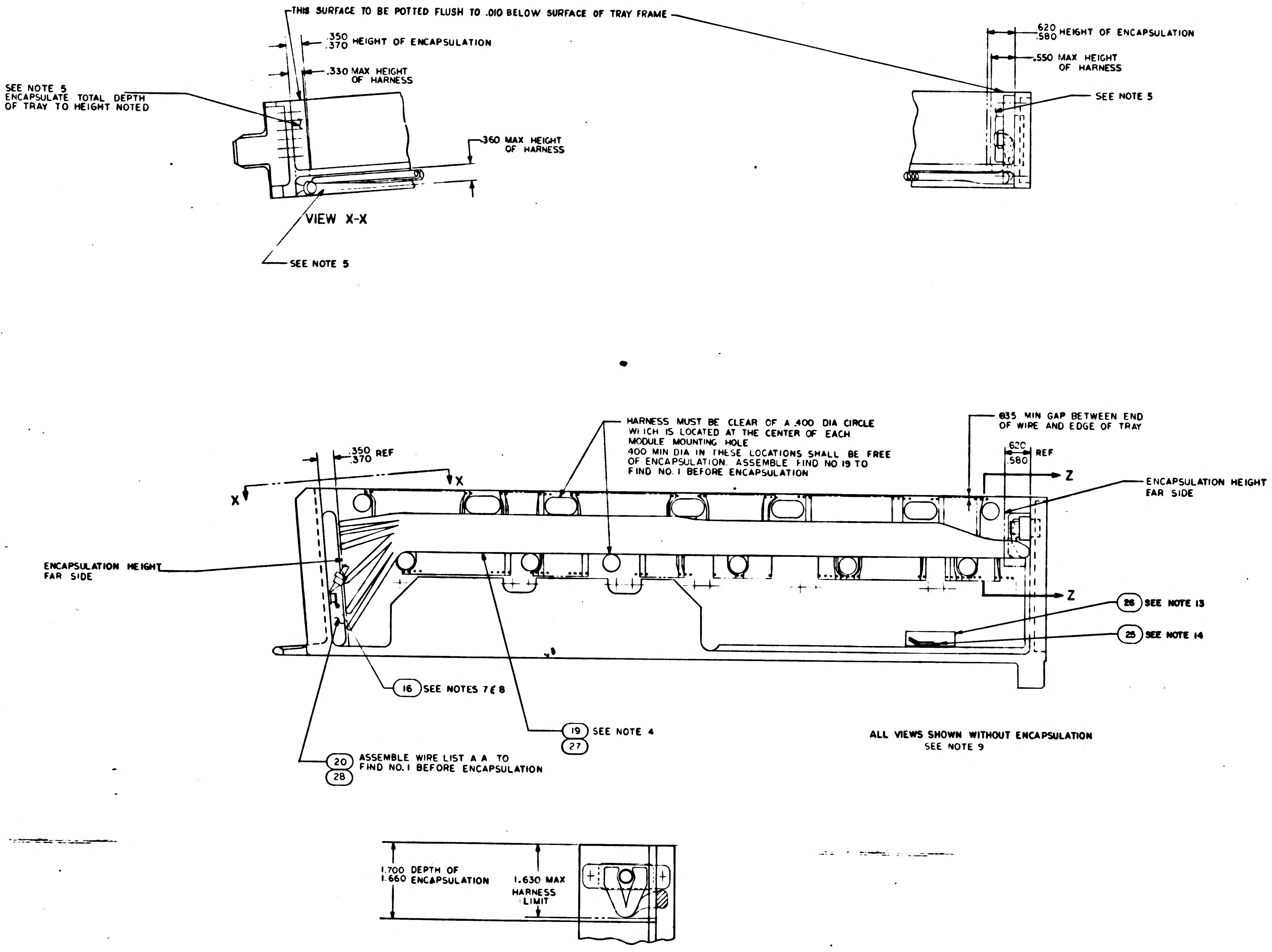
FRAME ASSEMBLY
TRAY 4

CODE IDENT NO.
SIZE E
NASA DRAWING NO 1007534
SCALE 1/1
WT
SHEET 1 OF 2

1007534 H

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13739	1/14/64	WK
D	REVISED PER TDRR 15153	29 Dec 64	WC
E	REVISED PER TDRR 15948	11-FEB-65	
F	REVISED PER TDRR 16268	15 FEB 65	J J J
G	REVISED PER TDRR 17613	25 MAR 65	JK
H	REVISED PER TDRR 18690	4 MAY 65	EF W.D.


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.350 .370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
VIEW X-X
SEE NOTE 5
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO 19 TO FIND NO. 1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350 .370 REF
.620 .580 REF
X
X
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
26 SEE NOTE 13
25 SEE NOTE 14
16 SEE NOTES 7 & 8
19 27 SEE NOTE 4
20 28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9

SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN DATE
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-29-64
NASA APPROVAL 11-4-64
MIT APPROVAL

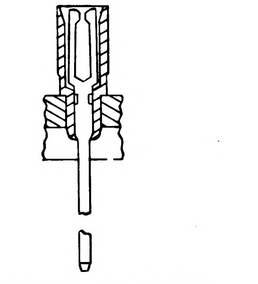
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

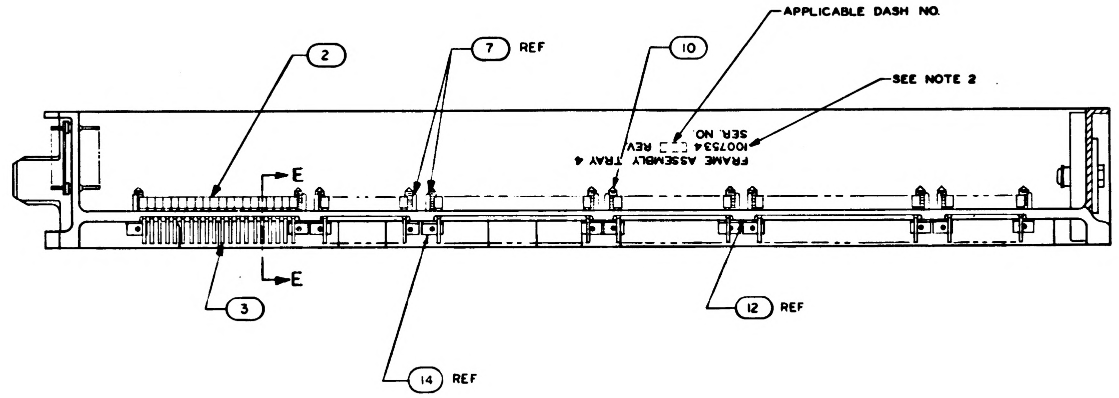
FRAME ASSEMBLY
TRAY 4

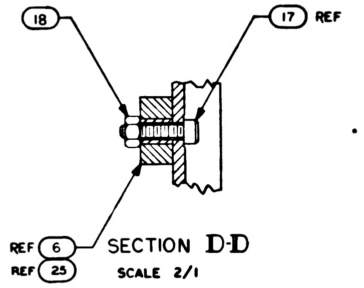
CODE IDENT NO
SIZE E
NASA DRAWING NO. 1007534
SCALE 1/1
WT
SHEET 2 OF 2

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

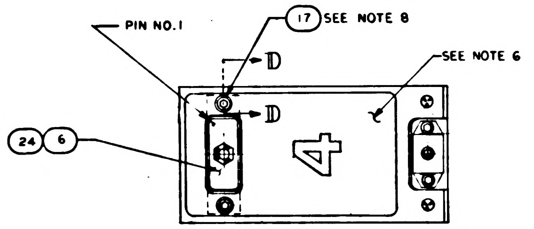
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939	11/4/64	WK
D	REVISED PER TDRR 15153	29 Dec 64	WK
E	REVISED PER TDRR 15948	11-FEB-65	
F	REVISED PER TDRR 16268	19 FEB 65	EF
G	REVISED PER TDRR 17613	25 MAR 65	
H	REVISED PER TDRR 18690	4 MAY 65	EF
J	REVISED PER TDRR 18691	7 MAY 65	EF

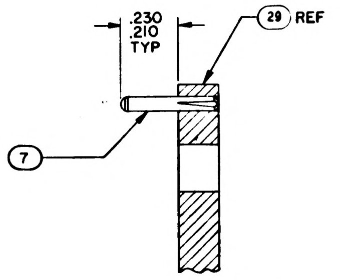

PARTIAL SECTION E-E
180 PLACES





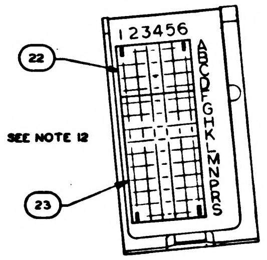
SECTION D-D
SCALE 2/1



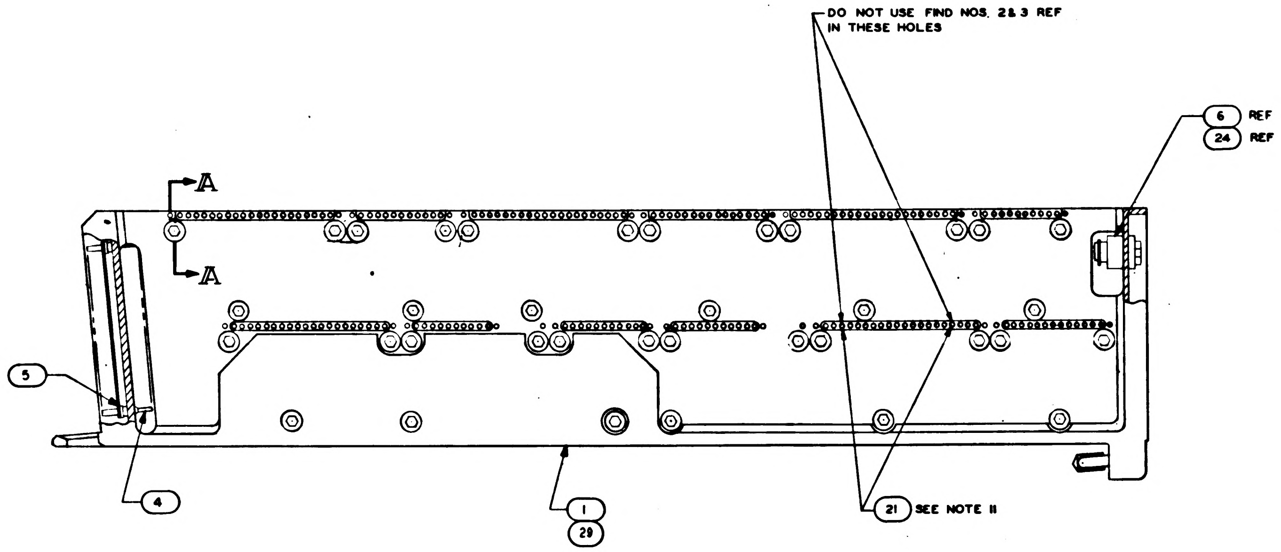


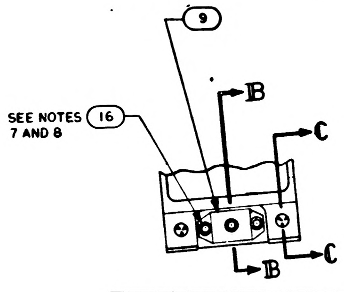
SECTION A-A
SCALE 4/1
-011 CONFIGURATION

© REPLACES WORD DWG REV B



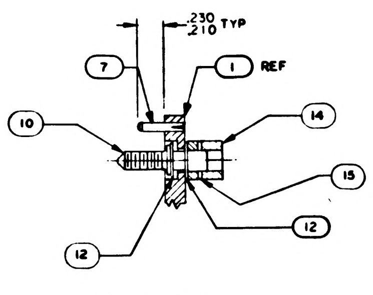
SEE NOTE 12



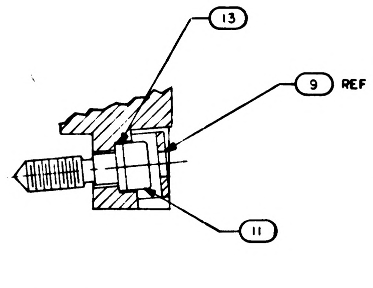


NOTES:

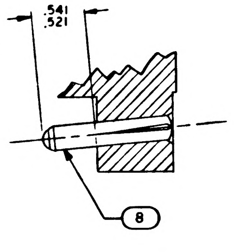
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MARK PER ND 1002019 (BLACK) ,100/.140 HIGH AND SERIALIZE PER ND 1002023
3. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND 1002136
4. BOND FIND NO. 19 AND 20 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .100 MAX. MODULE MOUNTING SURFACES TO BE FREE OF PRIMER.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NOS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
10. PROCURE PER PS 1007144.
11. BOND FIND NO. 21 INTO HOLES FOR 4SA4J9-3 AND -17 PER ND 1002004, TYPE I.
12. BOND FIND NOS. 22 AND 23 TO FIND NO. 5 PER ND 1002237
13. BOND FIND NO. 20 TO FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND 1002187 OVER FIND NO. 26 AND THE ADJOINING AREA
14. BOND FIND NO. 25 ONTO FIND NO. 26 AS PREPARED IN NOTE 13 PER ND 1002004 TYPE I (ALL BARE WIRE MUST BE COMPLETELY COVERED)
15. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

		QUANTITY REQUIRED 021	QUANTITY REQUIRED 011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		–	1		1008652	FRAME	29
		–	1		1008621	WIRE LIST AA	28
		–	1		1008626	WIRING HARNESS A	27
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	26
		1	1		1006712 3	RESISTOR, TEMPERATURE SENSITIVE	25
		–	1		1010821-1	CONNECTOR RECEPTACLE	24
		–	☒		1009564	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	23
		1	1		1008551	GASKET CONNECTOR TRAY	22
		2	2		1008256	PIN POLARIZING	21
		☒	–		1009554	WIRING DIAGRAM	REF
		1	–		1015742	WIRE LIST AA	20
		1	–		1008271	WIRING HARNESS A	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		36	–		MS171433	PIN, SPRING	15
		36	–		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		72	–		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		36	–		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		MS16556-604	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		180	180		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		180	180		1006774	INSULATOR, WRAPOST, FEMALE MIN.	2
		1	–		1008524	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007574		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN DATE 29 Sept
CHECKED 7 OCT 64
APPROVAL 8 Oct 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 4

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007534
SCALE 1/1
WT
SHEET 1 OF 2

1007534 J

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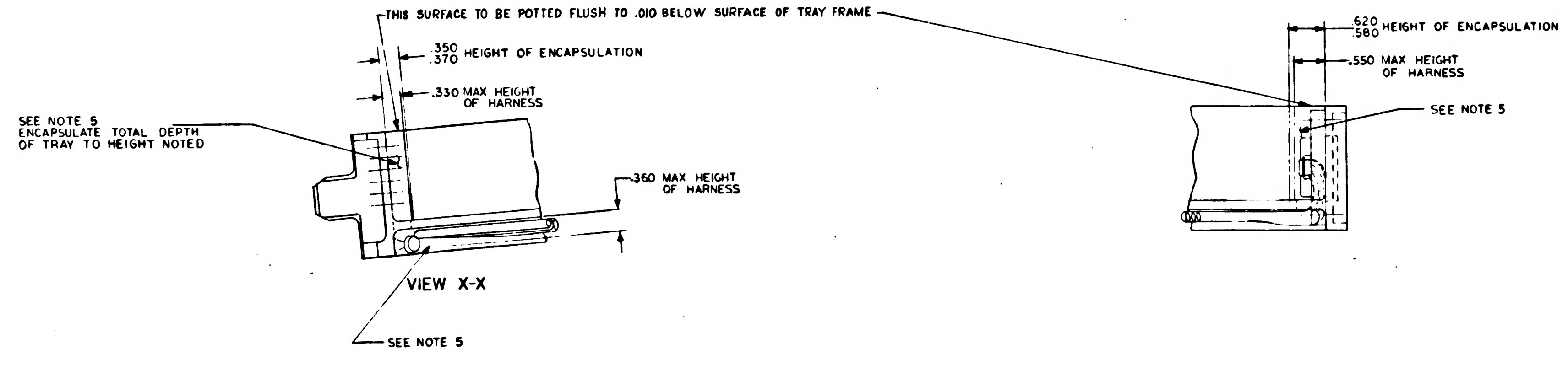
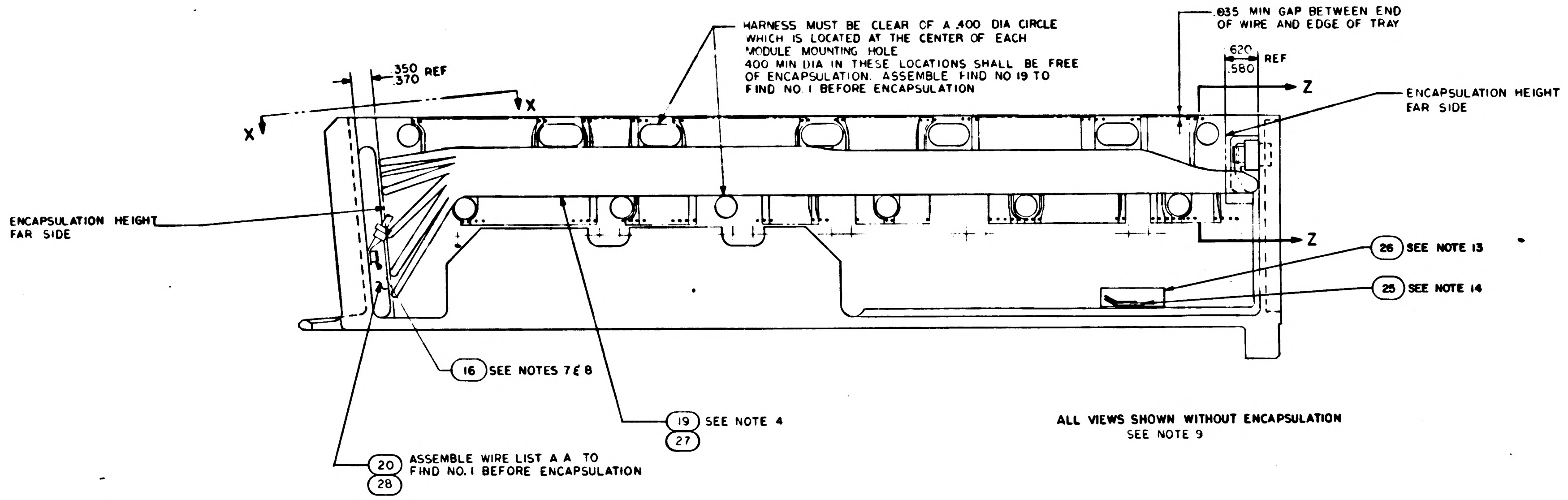
REVISIONS

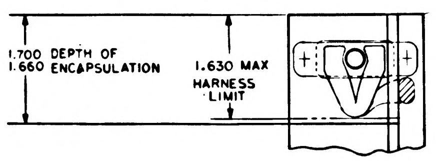
	SYM	DESCRIPTION	DATE	APPROVAL
⑳	C	REPLACES WORD DWG REV B PER TDRR 13737	1/4/64	WK
	D	REVISED PER TDRR 15153	29 Dec 64	R.T.G. W.K.
	E	REVISED PER TDRR 15948	11-FEB-65	W
Ⓜ	F	REVISED PER TDRR 16268	15 FEB 65	J J J / E.F.
Ⓜ	G	REVISED PER TDRR 17613	25 MAR 65	J.K. / W.D.
	H	REVISED PER TDRR 18690	4 MAY 65	EF / W.D.
	J	REVISED PER TDRR 18691	7 MAY 65	J J J / EF


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.350 .370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
SEE NOTE 5
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5

VIEW X-X


HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO 19 TO FIND NO. 1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIPE AND EDGE OF TRAY
.620 .580 REF
.350 .370 REF
X
X
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
26 SEE NOTE 13
25 SEE NOTE 14
16 SEE NOTES 7 & 8
19 27 SEE NOTE 4
20 28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9


1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT

SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

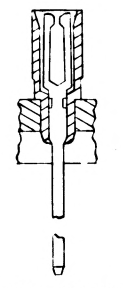
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
Contract NAS 9-497
DRAWN F. K DATE 29 Sept
CHECKED 7 Oct 64
APPROVAL 8 Oct 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

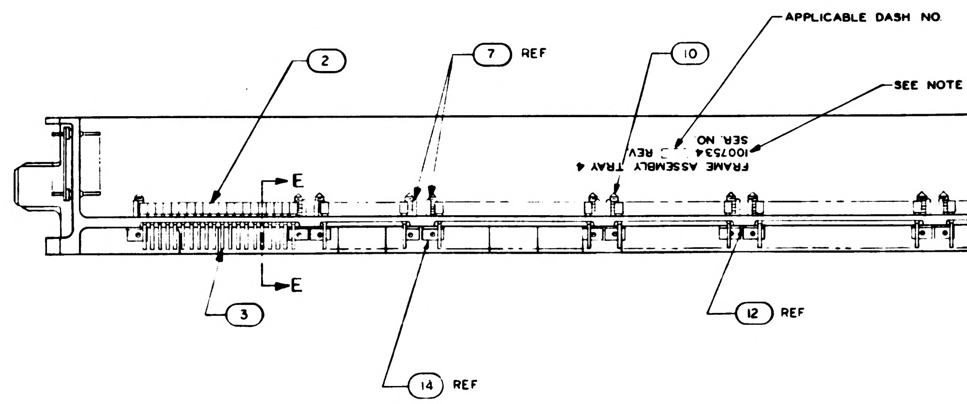
FRAME ASSEMBLY TRAY 4

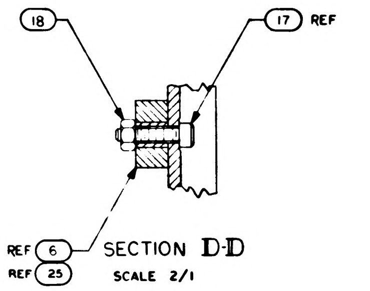
CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007534
SCALE 1/1
WT
SHEET 2 OF 2

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13937	11/4/64	WK
D	REVISED PER TDRR 15153	29 Jul 64	WH
E	REVISED PER TDRR 15948	11 FEB 65	[illegible]
F	REVISED PER TDRR 16268	[illegible]	EF
G	REVISED PER TDRR 17615	5 MAR 65	JT
H	REVISED PER TDRR 18690	4 MAY 65	EF J.T.
J	REVISED PER TDRR 18691	7 MAY 65	EF
K	REVISED PER TDRR 18695	MAY 65	A N.

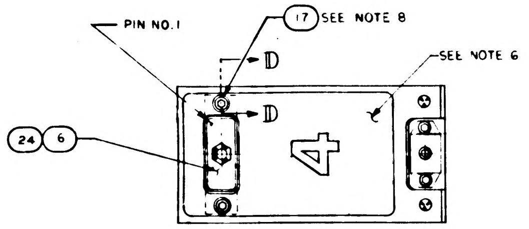


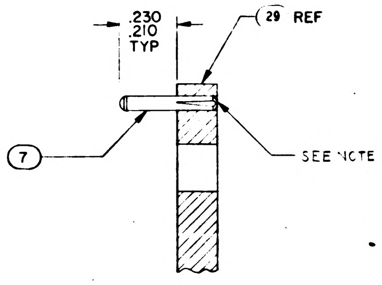
PARTIAL SECTION E E
180 PLACES



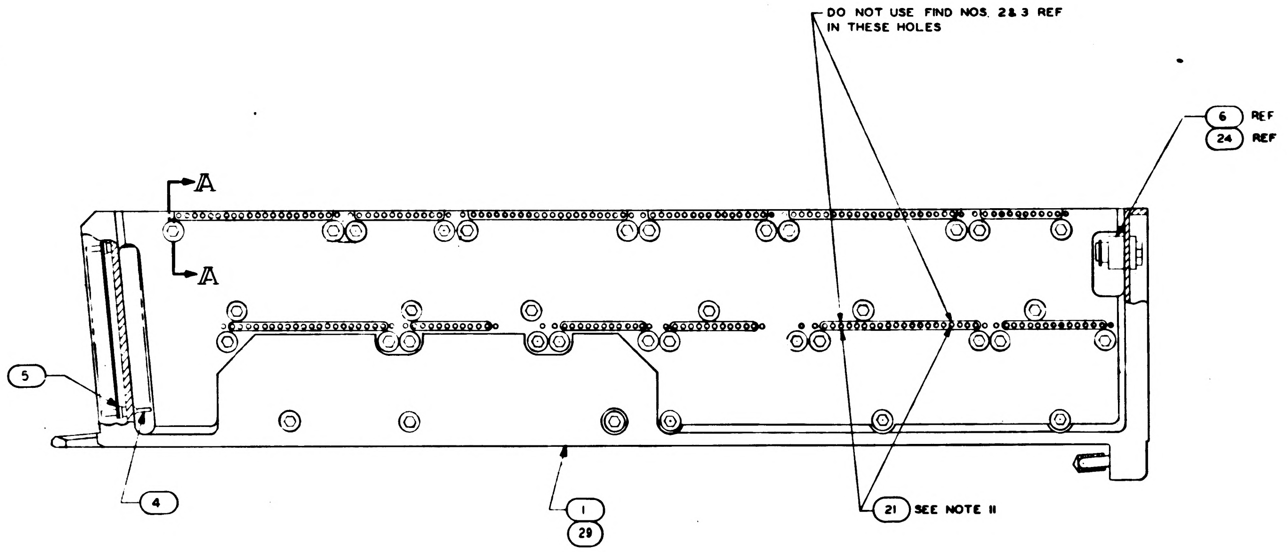


SECTION D-D
SCALE 2/1

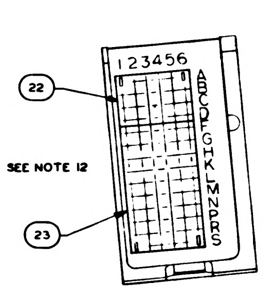


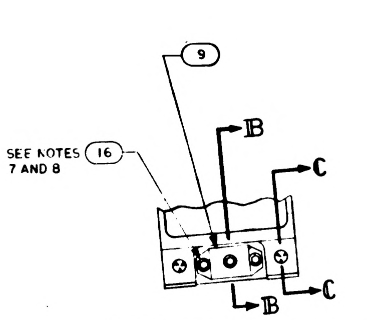


SECTION A-A
SCALE 4/1
-011 CONFIGURATION



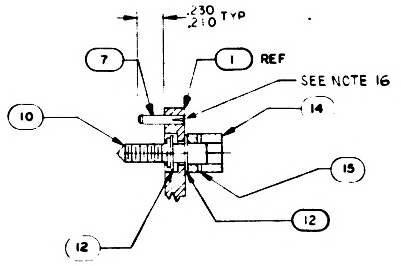
© REPLACES WORD DWG REV B



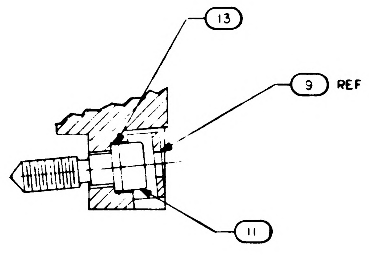


NOTES:

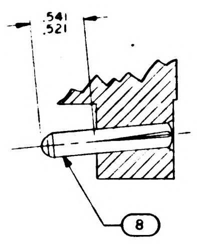
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MARK PER ND 1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023
3. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND 1002136
4. BOND FIND NO. 19 AND 20 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACES TO BE FREE OF PRIMER.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NOS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
10. PROCURE PER PS 1007144.
11. BOND FIND NO. 21 INTO HOLES FOR 45A4J9-3 AND -17 PER ND 1002004, TYPE I.
12. BOND FIND NOS. 22 AND 23 TO FIND NO. 5 PER ND 1002237
13. BOND FIND NO. 26 FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND 1002187 OVER FIND NO. 26 AND THE ADJOINING AREA
14. BOND FIND NO. 25 ONTO FIND NO. 26 AS PREPARED IN NOTE 13 PER ND 1002004 TYPE I (ALL BARE WIRE MUST BE COMPLETELY COVERED)
15. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.
16. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND 1002004, POTTING SIDE ONLY.



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

QUANTITY REQUIRED		021	011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		–	1		1008652	FRAME	29
		–	1		1008621	WIRE LIST AA	28
		–	1		1008626	WIRING HARNESS A	27
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	26
		1	1		1006712 3	RESISTOR, TEMPERATURE SENSITIVE	25
		–	1		1010821-1	CONNECTOR RECEPTACLE	24
		–	╳		1009564	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	23
		1	1		1008551	GASKET CONNECTOR TRAY	22
		2	2		1008258	PIN POLARIZING	21
		╳	–		1009554	WIRING DIAGRAM	REF
		1	–		1015742	WIRE LIST AA	20
		1	–		1008271	WIRING HARNESS A	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		36	–		MS71433	PIN, SPRING	15
		36	–		1004207	DRIVE CYLINDER	14
		1	1		1008099-2	WASHER	13
		72	–		1004206	WASHER, THRUST	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		36	–		1008172	SCREW, JACK	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		MS16556-604	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		180	180		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		180	180		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	[illegible]		1008524	FRAME	1

LIST OF MATERIALS

1007534 K

NEXT ASSY	USED ON	APPLICABLE DASH NO
1007574		
1007574		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ±.02
ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN [illegible] DATE 29 Sep 64
CHECKED [illegible] 1 Oct 64
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

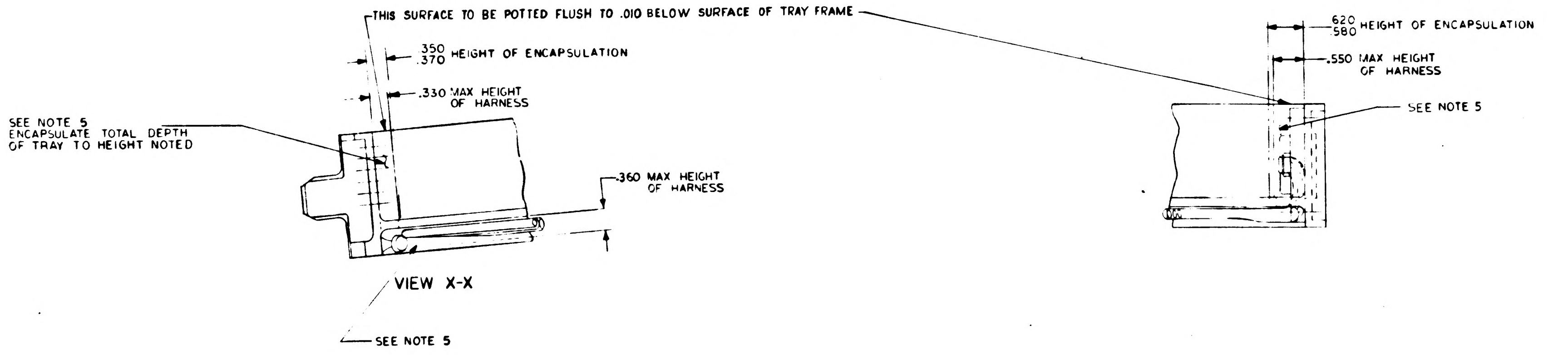
FRAME ASSEMBLY
TRAY 4

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007534
SCALE 1/1
WT
SHEET 1 OF 2

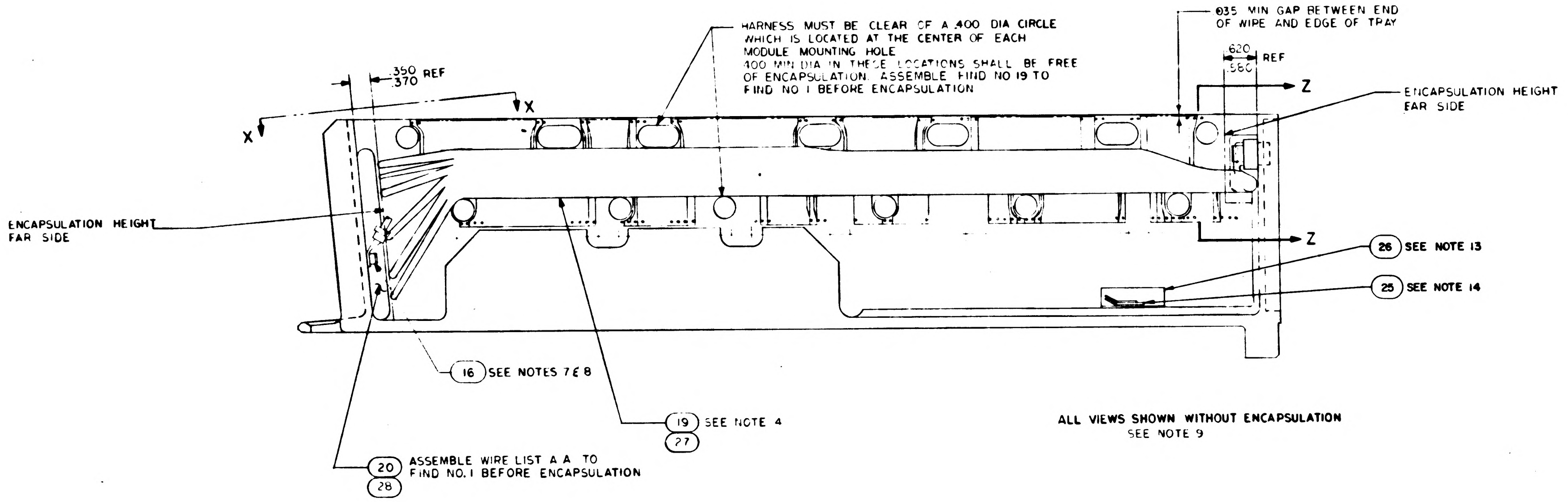
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

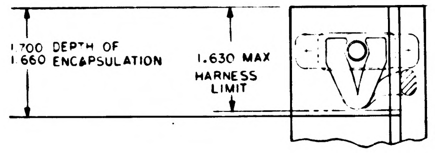
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13932	1/4/64	WK
D	REVISED PER TDRR 15153	[illegible]	W/C
E	REVISED PER TDRR 15948	11 FEB 65	[illegible]
F	REVISED PER TDRR 16268	15 [illegible] 65	[illegible]
G	REVISED PER TDRR 17612	25 MA[illegible]	[illegible]
H	REVISED PER TDRR 18690	4 MAY 65	CF W.D.
J	REVISED PER TDRR 18691	7 MAY 65	CF
K	REVISED PER TDRR 8695	MAY 65	A.N.


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.350 .370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
SEE NOTE 5
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5

VIEW X-X


.350 .370 REF
X
X
HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO 19 TO FIND NO 1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIPE AND EDGE OF TRAY
.620 .580 REF
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
26 SEE NOTE 13
25 SEE NOTE 14
16 SEE NOTES 7 & 8
19 27 SEE NOTE 4
20 28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9


1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT

SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
DRAWN DATE 29 Sep
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

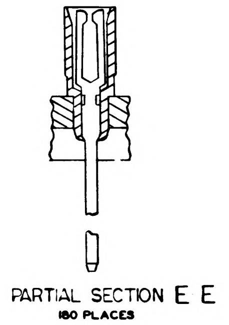
FRAME ASSEMBLY
TRAY 4

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007534
SCALE 1/1
WT
SHEET 2 OF 2

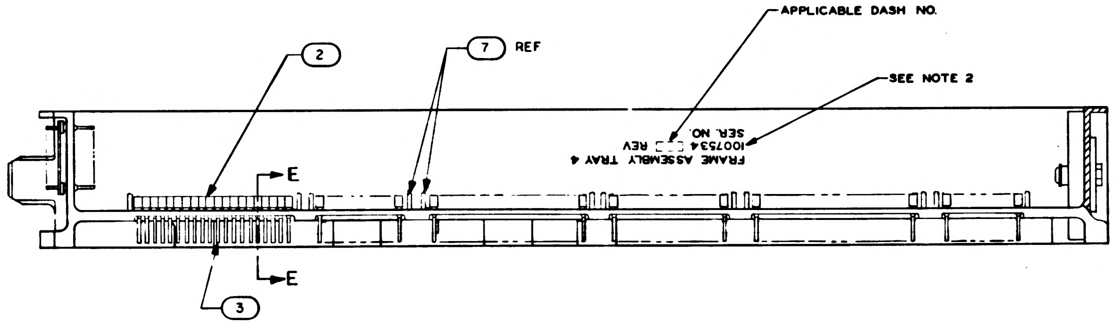
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

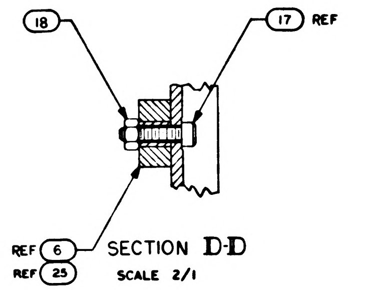
REVISIONS

	SYM	DESCRIPTION	DATE	APPROVAL
(M)	C	REPLACES WORD DWG REV B PER TDRR 13937	11/4/64	
	D	REVISED PER TDRR 15153	29 Dec 64	
	E	REVISED PER TDRR 15948	11 FEB 65	
(M)	F	REVISED PER TDRR 16268	5 FEB 65	EF
(M)	G	REVISED PER TDRR 17613	5 MAR 65	
	H	REVISED PER TDRR 18690	4 MAY 65	E
	J	REVISED PER TDRR 18691	7 MAY 65	J
(M)	K	REVISED PER TDRR 18695	MAY 65	
	L	REVISED PER TDRR 20 9	9 JUN 65	

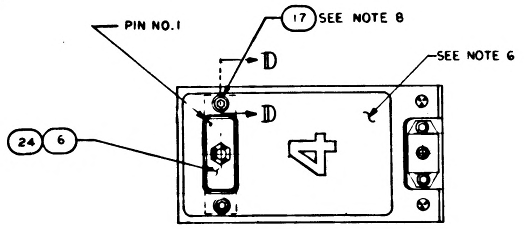


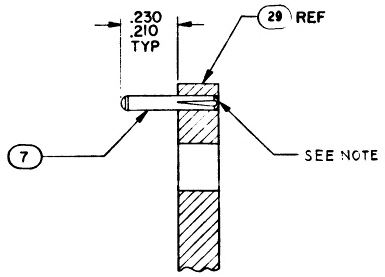
PARTIAL SECTION E E
180 PLACES



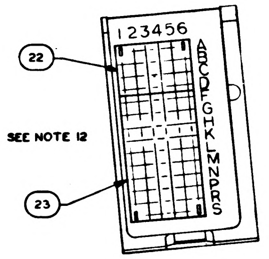


SECTION D-D
SCALE 2/1

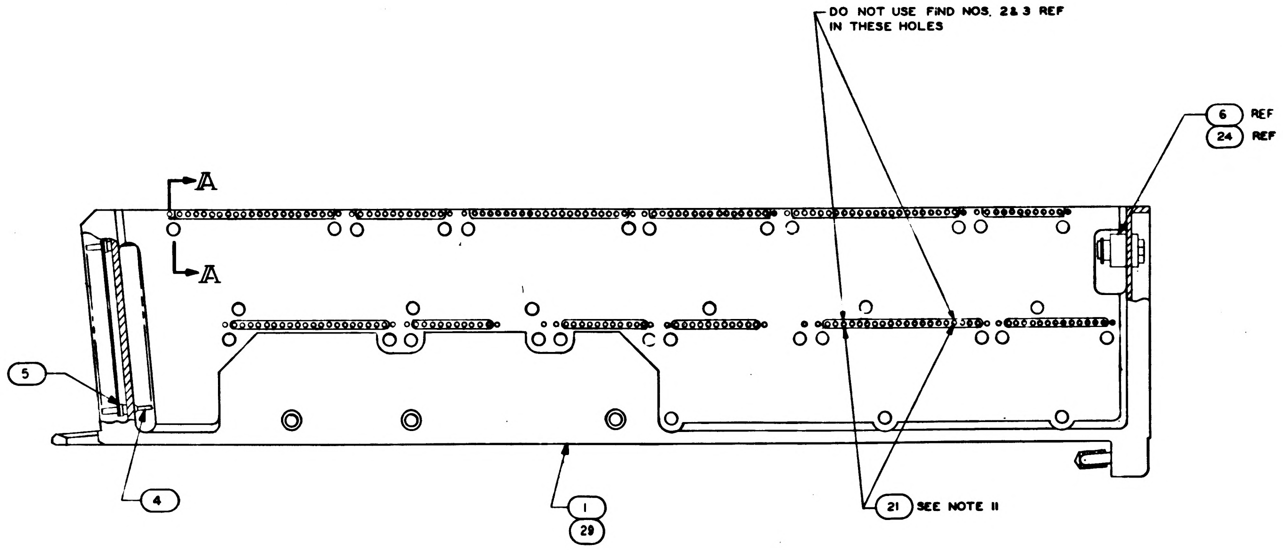


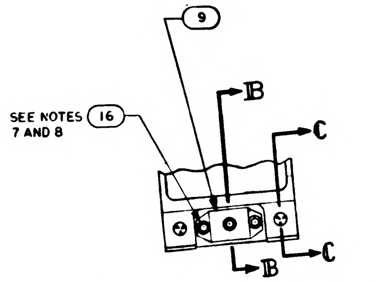


SECTION A-A
SCALE 4/1
-011 CONFIGURATION



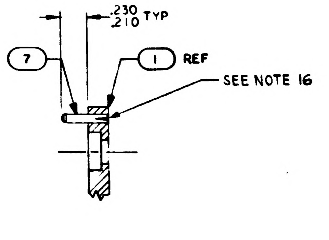
© REPLACES WORD DWG REV B



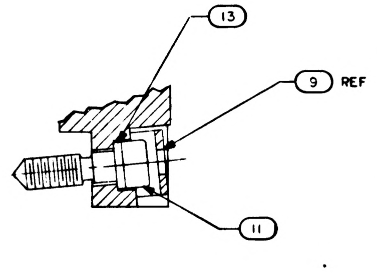


NOTES:

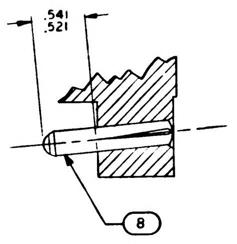
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND 1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023.
3. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND 1002136
4. BOND FIND NO. 19 AND 20 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY.
5. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACES TO BE FREE OF PRIMER.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER).
8. MOUNTING TORQUE FOR FIND NOS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB.
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
10. PROCURE PER PS 1007144.
11. BOND FIND NO. 21 INTO HOLES FOR 45A4J9-3 AND -17 PER ND 1002004, TYPE I.
12. BOND FIND NOS. 22 AND 23 TO FIND NO. 5 PER ND 1002237
13. BOND FIND NO. 26 FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND 1002187 OVER FIND NO. 26 AND THE ADJOINING AREA
14. BOND FIND NO. 25 ONTO FIND NO. 26 AS PREPARED IN NOTE 13 PER ND 1002004 TYPE I (ALL BARE WIRE MUST BE COMPLETELY COVERED)
15. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.
16. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND 1002004, POTTING SIDE ONLY.



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		—	1		1008652	FRAME	29
		—	1		1008621	WIRE LIST AA	28
		—	1		1008626	WIRING HARNESS A	27
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	26
		1	1		1006712 3	RESISTOR, TEMPERATURE SENSITIVE	25
		—	1		1010821-1	CONNECTOR RECEPTACLE	24
		—	☒		1009564	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	23
		1	1		1008551	GASKET CONNECTOR TRAY	22
		2	2		1008256	PIN POLARIZING	21
		☒	—		1009554	WIRING DIAGRAM	REF
		1	—		1015742	WIRE LIST AA	20
		1	—		1008271	WIRING HARNESS A	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		~~36~~	—		~~MS71433~~	~~PIN, SPRING~~	15
		~~36~~	—		~~1004207~~	~~DRIVE CYLINDER~~	14
		1	1		1008099-2	WASHER	13
		~~72~~	—		~~1004206~~	~~WASHER, THRUST~~	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		~~36~~	—		~~1008172~~	~~SCREW, JACK~~	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		MS16556-604	PIN, GUIDE	7
		1	—		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		180	180		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		180	180		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	~~1~~		1008524	FRAME	1

QUANTITY REQUIRED — LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007574		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN T. Kaminski DATE 29 Sept
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 4

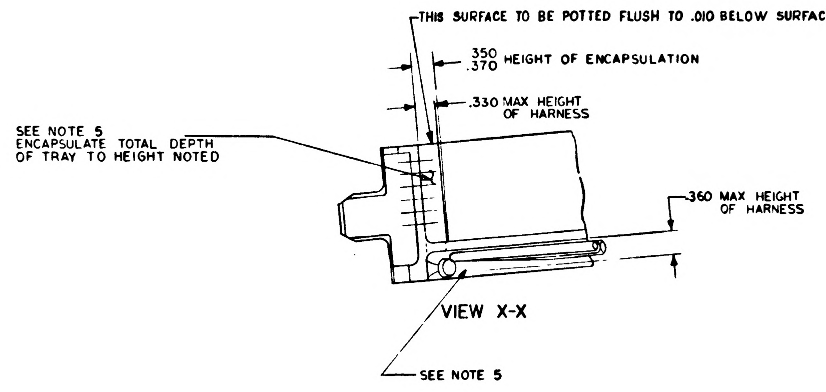
CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007534
SCALE 1/1
WT
SHEET 1 OF 2

1007534 L

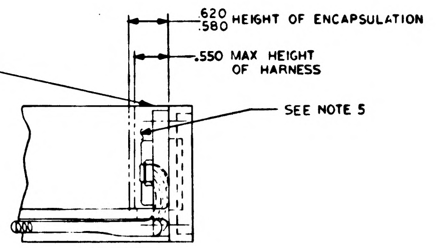
NOTICE WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

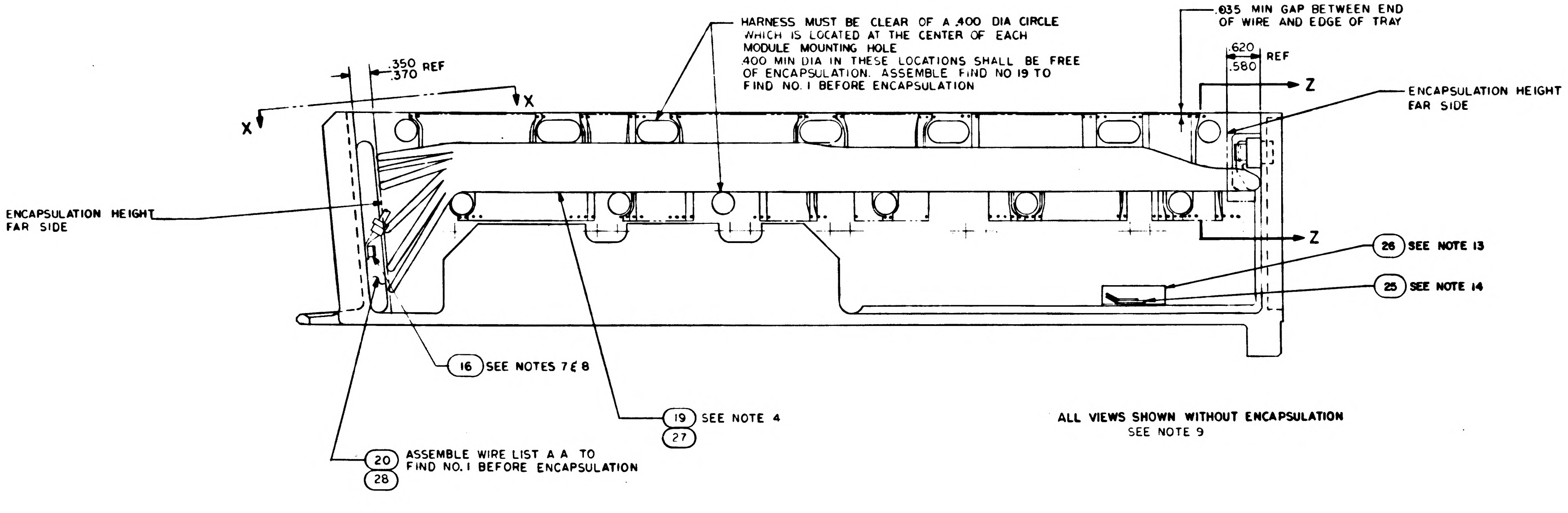
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13932	64	WK
D	REVISED PER TDRR 15153	29 [illegible] 64	[illegible]
E	REVISED PER TDRR 5948	[illegible]	[illegible]
F	REVISED PER TDRR 16268	[illegible]	[illegible]
G	REVISED PER TDRR 17615	25 [illegible] 65	[illegible]
H	REVISED PER TDRR 18690	4 MAY 65	[illegible]
J	REVISED PER TDRR 18691	MAY 65	[illegible]
K	REVISED PER TDRR 8695	MAY 65	[illegible]
L	REVISION STATUS CHANGED	[illegible]	[illegible]

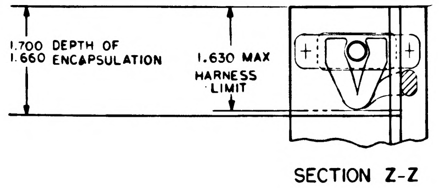

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.350
.370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
SEE NOTE 5

VIEW X-X


.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5


HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO 19 TO FIND NO. 1 BEFORE ENCAPSULATION
.635 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.620
.580 REF
.350
.370 REF
X
X
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
26 SEE NOTE 13
25 SEE NOTE 14
16 SEE NOTES 7 & 8
19 SEE NOTE 4
27
20 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
28

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9


1.700 DEPTH OF
1.660 ENCAPSULATION
1.630 MAX HARNESS LIMIT

SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

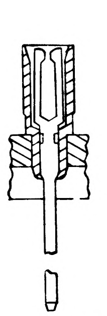
M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
Contract NAS 9-497
DRAWN [illegible] DATE [illegible]
CHECKED [illegible] 7 OCT 64
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible] 11-4-64
MIT APPROVAL [illegible]

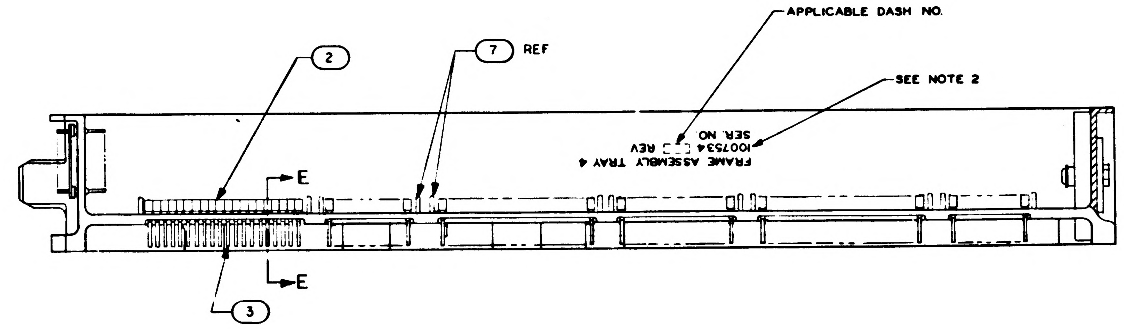
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

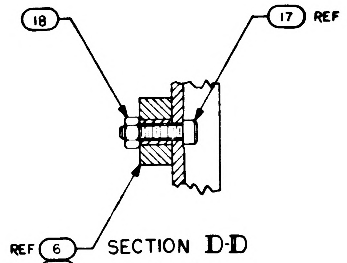
FRAME ASSEMBLY TRAY 4

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007534
SCALE 1/1
WT
SHEET 2 OF 2

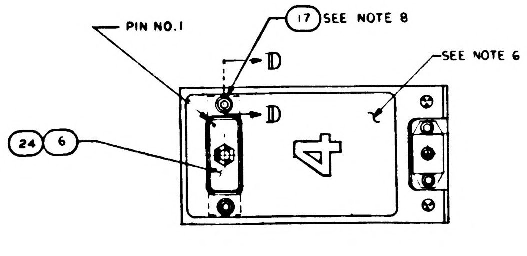
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939	11/4/64	WK
D	REVISED PER TDRR 15153	29 Jan 65	WH
E	REVISED PER TDRR 15948	11-FEB-65	[illegible]
F	REVISED PER TDRR 16268	[illegible] 65	EF
G	REVISED PER TDRR 17613	5 MAR 65	[illegible]
H	REVISED PER TDRR 18690	4 MAY 65	EF J.T.
J	REVISED PER TDRR 18691	7 MAY 65	EF
K	REVISED PER TDRR 18695	11 MAY 65	A.N.
L	REVISED PER TDRR 20119	19 JUN 65	[illegible]
M	REVISION STATUS CHANGED	12 JUL 65	RLP

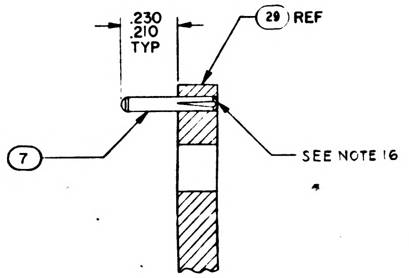

PARTIAL SECTION E-E
180 PLACES





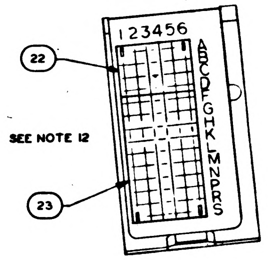
SECTION D-D
SCALE 2/1



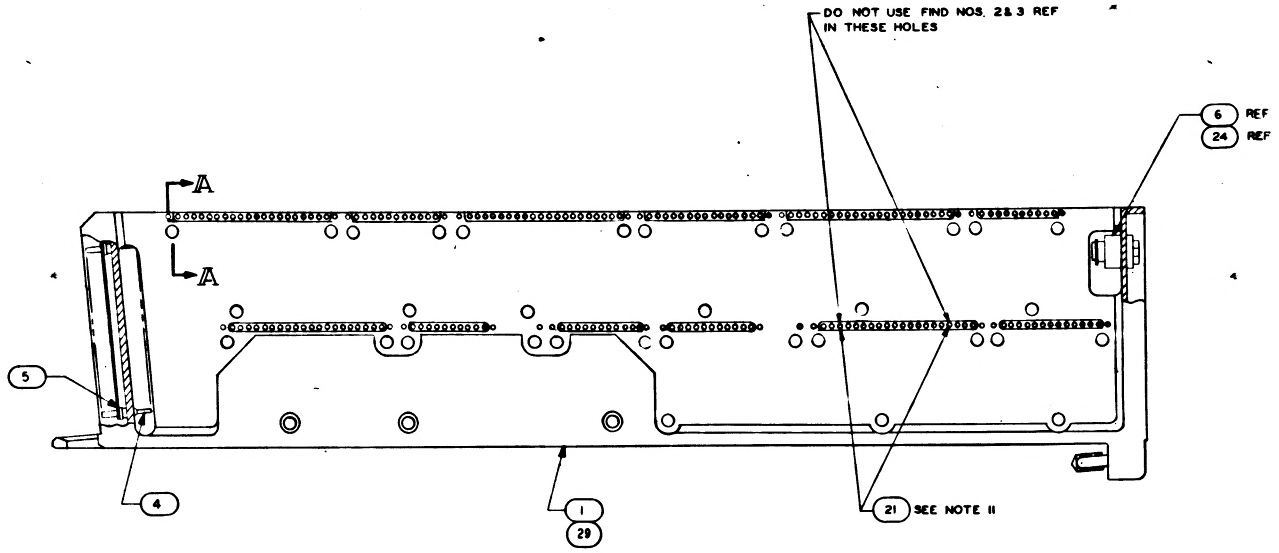


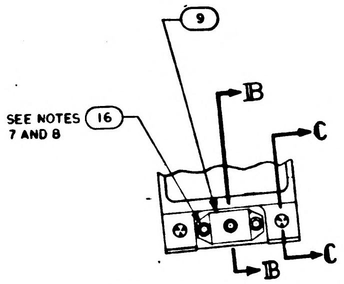
SECTION A-A
SCALE 4/1
-011 CONFIGURATION

© REPLACES WORD DWG REV B



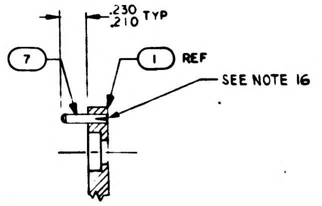
SEE NOTE 12



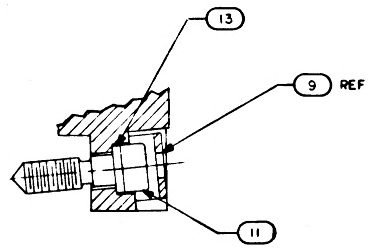


NOTES:

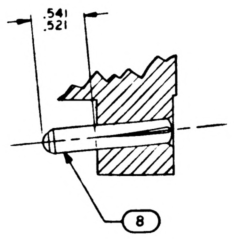
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND 1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023.
3. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND 1002136
4. BOND FIND NO. 19 AND 20 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY.
5. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACES TO BE FREE OF PRIMER.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER).
8. MOUNTING TORQUE FOR FIND NOS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB.
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
10. PROCURE PER PS 1007144.
11. BOND FIND NO. 21 INTO HOLES FOR 45A4J9-3 AND -17 PER ND 1002004, TYPE I.
12. BOND FIND NOS. 22 AND 23 TO FIND NO. 5 PER ND 1002237
13. BOND FIND NO. 26 FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND 1002187 OVER FIND NO. 26 AND THE ADJOINING AREA
14. BOND FIND NO. 25 ONTO FIND NO. 26 AS PREPARED IN NOTE 13 PER ND 1002004 TYPE I (ALL BARE WIRE MUST BE COMPLETELY COVERED)
15. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.
16. FILL ~~MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS~~ IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND 1002004, POTTING SIDE ONLY.



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

		QUANTITY REQUIRED 021	QUANTITY REQUIRED 011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		–	1		1008652	FRAME	29
		–	1		1008621	WIRE LIST AA	28
		–	1		1008626	WIRING HARNESS A	27
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	26
		1	1		1006712 3	RESISTOR, TEMPERATURE SENSITIVE	25
		–	1		1010821-1	CONNECTOR RECEPTACLE	24
		–	╳		1009584	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	23
		1	1		1008551	GASKET CONNECTOR TRAY	22
		2	2		1008256	PIN POLARIZING	21
		╳	–		1009554	WIRING DIAGRAM	REF
		1	–		1015742	WIRE LIST AA	20
		1	–		1008271	WIRING HARNESS A	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		~~36~~	–		~~MS171433~~	~~PIN, SPRING~~	15
		~~36~~	–		~~1004207~~	~~DRIVE CYLINDER~~	14
		1	1		1008099-2	WASHER	13
		~~72~~	–		~~1004206~~	~~WASHER, THRUST~~	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		~~36~~	–		~~1008172~~	~~SCREW, JACK~~	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		MS16556-604	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		180	180		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		180	180		1006774	INSULATOR, WRAPOST, FEMALE MIN.	2
		1	~~1~~		1008524	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007574		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN L. Kamm DATE 29 Sept
CHECKED [illegible] 7 OCT 64
APPROVAL [illegible] 8 Oct 64
APPROVAL [illegible]
NASA APPROVAL W. J. Rhine 11-4-64
MIT APPROVAL W. Kupfer 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

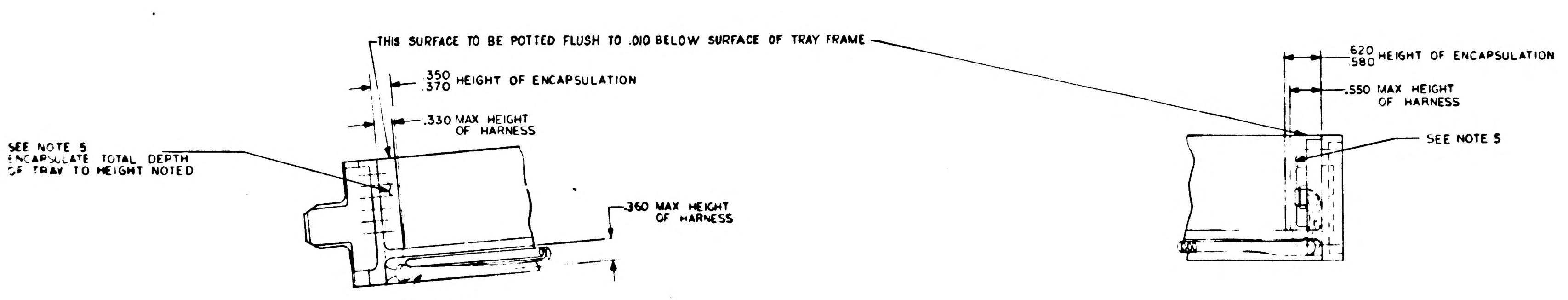
FRAME ASSEMBLY
TRAY 4

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO 1007534
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

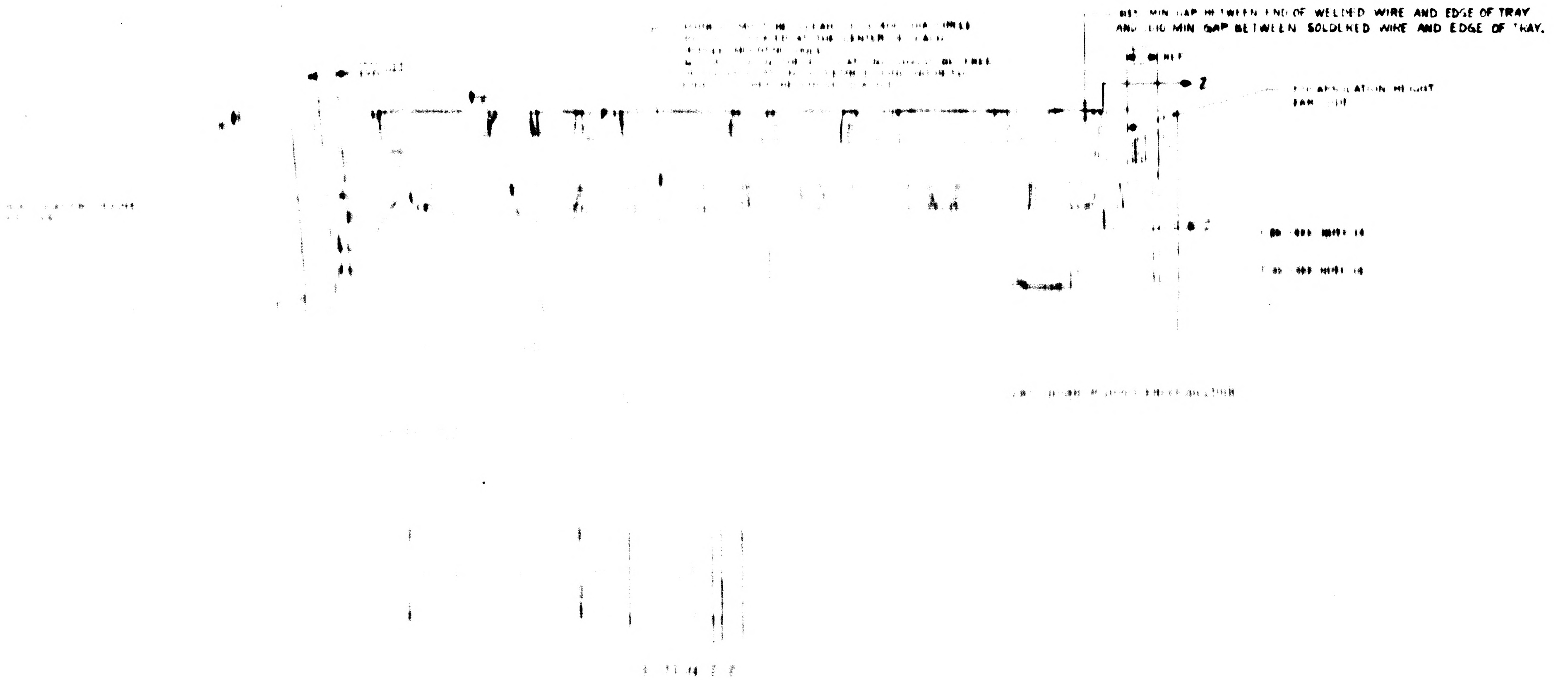
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 12731	[illegible]	WK
D	REVISED PER TDRR 15153	29 [illegible] 64	[illegible]
E	REVISED PER TDRR 15948	11-FEB-65	[illegible]
F	REVISED PER TDRR 16268	15 FEB 65	[illegible]
G	REVISED PER TDRR 17613	25 MAR 65	[illegible]
H	REVISED PER TDRR 18690	4 MAY 65	EF W.D.
J	REVISED PER TDRR 18691	7 MAY 65	EF
K	REVISED PER TDRR 8695	11 MAY 65	A.N.
L	REVISION STATUS CHANGED	9 JUN 65	[illegible]
M	REVISED PER TDRR 20687	12 JUL 65	RLP

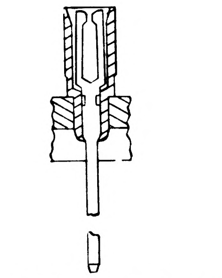

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.350 .370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5

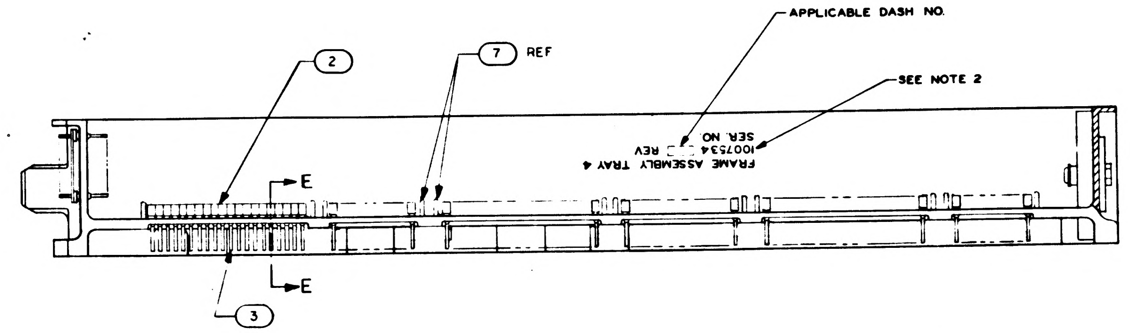
VIEW X-X

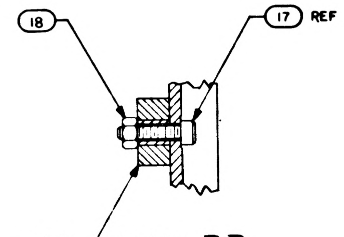
SEE NOTE 5


.015 MIN GAP BETWEEN END OF WELDED WIRE AND EDGE OF TRAY AND .010 MIN GAP BETWEEN SOLDERED WIRE AND EDGE OF TRAY.
Z
ENCAPSULATION HEIGHT

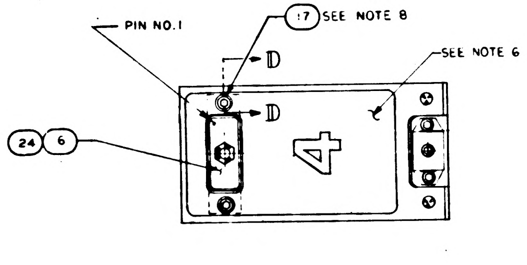
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939	11/4/64	WK
D	REVISED PER TDRR 15153	29 Jan 65	WK
E	REVISED PER TDRR 15948	11-FEB-65	
F	REVISED PER TDRR 16268	FEB 65	EF
G	REVISED PER TDRR 17613	5 MAR 65	
H	REVISED PER TDRR 18690	4 MAY 65	EF
J	REVISED PER TDRR 18691	7 MAY 65	EF
K	REVISED PER TDRR 18695	11 MAY 65	A.N.
L	REVISED PER TDRR 20119	19 JUN 65	
M	REVISION STATUS CHANGED	12 JUL 65	RLP
N	REVISED PER TDRR 20686	14 JUL 65	MCR

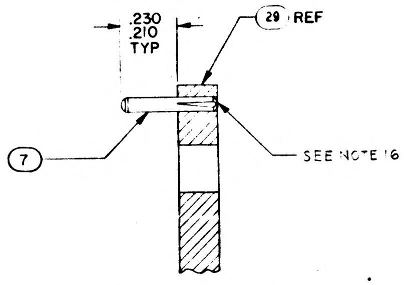

PARTIAL SECTION E E
180 PLACES



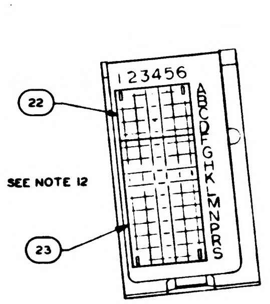


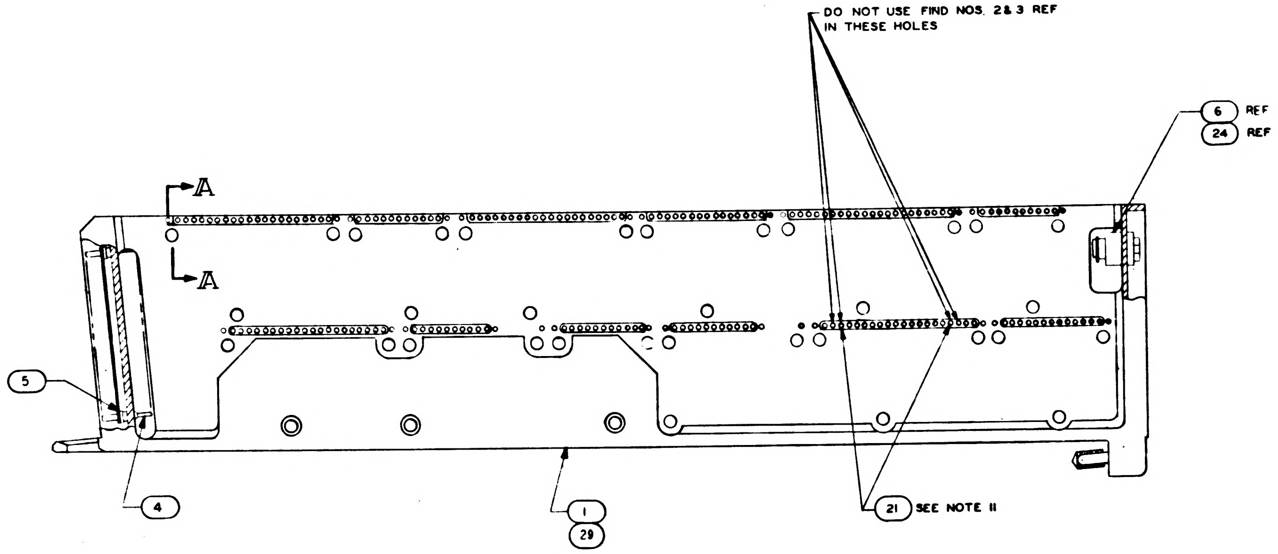
SECTION D-D
SCALE 2/1



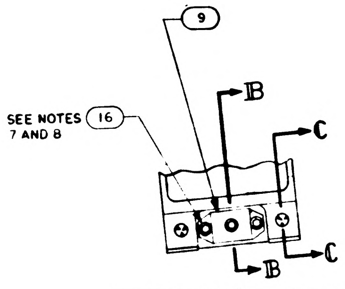


SECTION A-A
SCALE 4/1
-011 CONFIGURATION



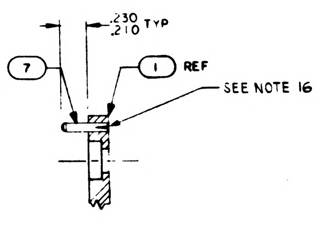


Ⓒ REPLACES WORD DWG REV B

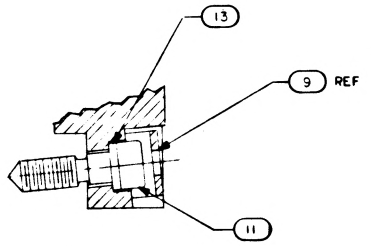


NOTES:

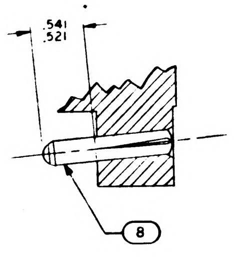
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND 1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023.
3. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND 1002136
4. BOND FIND NO. 19 AND 20 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY.
5. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACES TO BE FREE OF PRIMER.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER).
8. MOUNTING TORQUE FOR FIND NOS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB.
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
10. PROCURE PER PS 1007144.
11. BOND FIND NO. 21 INTO HOLES FOR 45A4J9-3 AND -17 PER ND 1002004, TYPE I. COVER EMPTY CONNECTOR HOLE WITH ND1002004 TYPE I.
12. BOND FIND NOS. 22 AND 23 TO FIND NO. 5 PER ND 1002237
13. BOND FIND NO. 26 FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND 1002187 OVER FIND NO. 26 AND THE ADJOINING AREA
14. BOND FIND NO. 25 ONTO FIND NO. 26 AS PREPARED IN NOTE 13 PER ND 1002004 TYPE I (ALL BARE WIRE MUST BE COMPLETELY COVERED)
15. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.
16. FILL ~~MODULE GUIDE PIN HOLES AND ANY ASSOCIATED~~ CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

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		–	1		1008621	WIRE LIST AA	28
		–	1		1008626	WIRING HARNESS A	27
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	26
		1	1		1006712 3	RESISTOR, TEMPERATURE SENSITIVE	25
		–	1		1010821-1	CONNECTOR RECEPTACLE	24
		–	☒		1009564	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	23
		1	1		1008551	GASKET CONNECTOR TRAY	22
		2	2		1008256	PIN POLARIZING	21
		☒	–		1009554	WIRING DIAGRAM	REF
		1	–		1015742	WIRE LIST AA	20
		1	–		1008271	WIRING HARNESS A	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		~~36~~	–		~~MS171433~~	~~PIN, SPRING~~	15
		~~36~~	–		~~1004207~~	~~DRIVE CYLINDER~~	14
		1	1		1008099-2	WASHER	13
		~~72~~			~~1004206~~	~~WASHER, THRUST~~	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		~~36~~	–		~~1008172~~	~~SCREW, JACK~~	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		MS16556-604	PIN, GUIDE	7
		1	–		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		180	180		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		180	180		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	~~1~~		1008524	FRAME	1

QUANTITY REQUIRED
LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007574		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL ——
HEAT TREATMENT ——
FINAL FINISH ——

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO Contr. NAS 9-4065
DRAWN Kramer DATE 29 Sep 64
CHECKED 1 Oct 64
APPROVAL 8 Oct 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 4

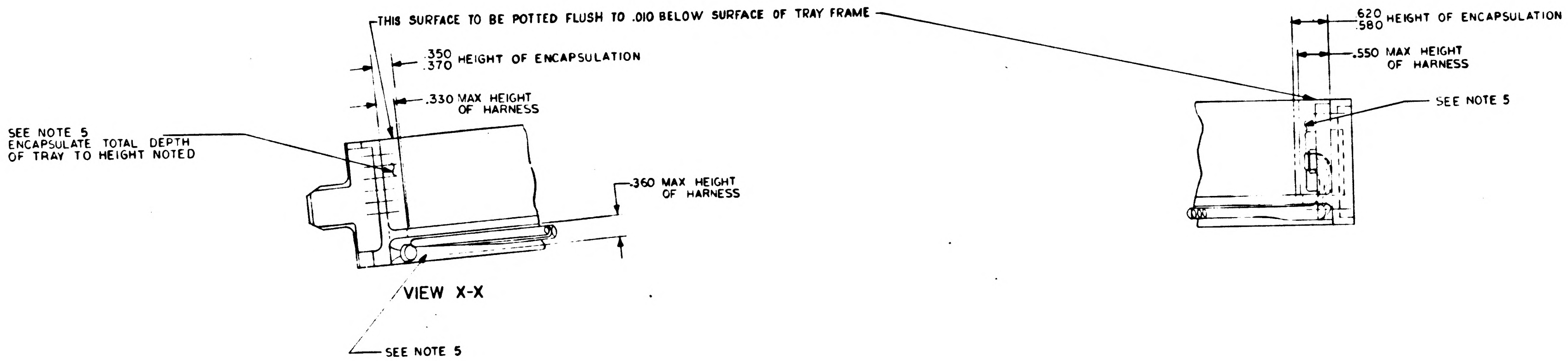
CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007534
SCALE 1/1
WT
SHEET 1 OF 2

1007534 N

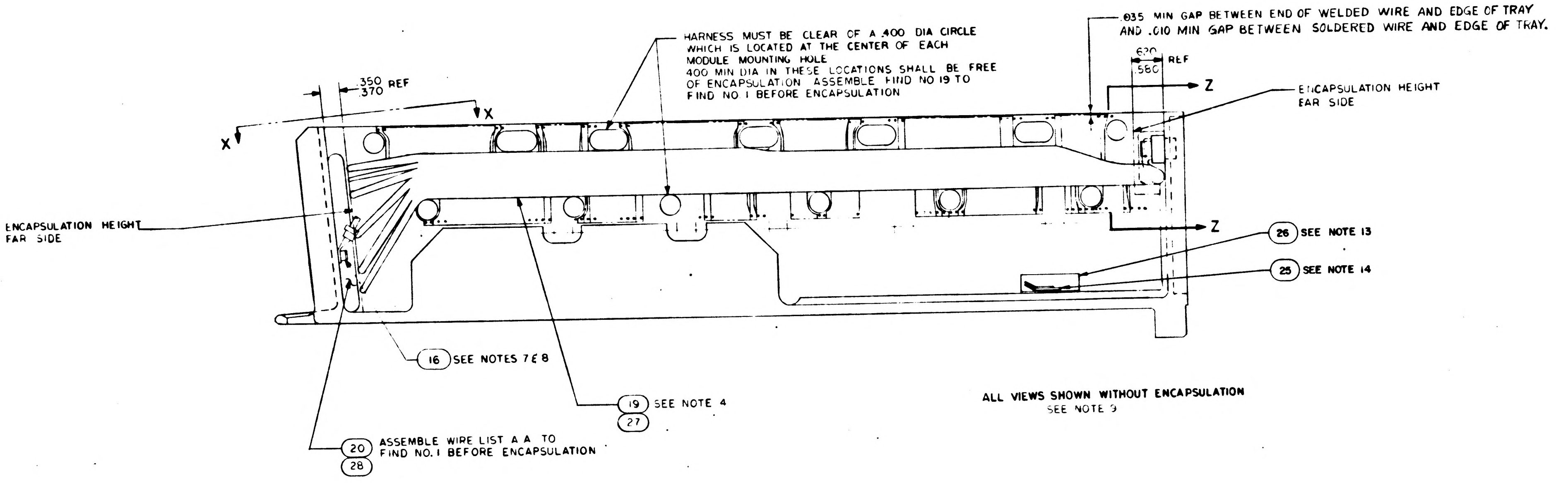
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

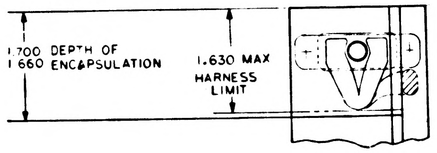
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13232	[illegible]	WK
D	REVISED PER TDRR 15153	29 [illegible] 64	[illegible]
E	REVISED PER TDRR 15948	11-FEB-65	[illegible]
F	REVISED PER TDRR 16268	15 FEB 65	[illegible]
G	REVISED PER TDRR 17613	25 MAR 65	[illegible]
H	REVISED PER TDRR 18690	4 MAY 65	EF W.D.
J	REVISED PER TDRR 18691	7 MAY 65	EF
K	REVISED PER TDRR 18695	11 MAY 65	A.N.
L	REVISION STATUS CHANGED	9 JUN 65	[illegible]
M	REVISED PER TDRR 20687	12 JUL 65	RLP
N	REVISION STATUS CHANGED	14 JUL 65	MCR


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.350 .370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
SEE NOTE 5
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5

VIEW X-X


HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION ASSEMBLE FIND NO 19 TO FIND NO 1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WELDED WIRE AND EDGE OF TRAY AND .010 MIN GAP BETWEEN SOLDERED WIRE AND EDGE OF TRAY.
.350 .370 REF
.620 .580 REF
X
X
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
26 SEE NOTE 13
25 SEE NOTE 14
16 SEE NOTES 7 & 8
19 27 SEE NOTE 4
20 28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9


1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT

SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
CONTRACT NAS [illegible]
DWG NO
DRAWN [illegible] DATE 29 [illegible]
CHECKED [illegible] 7 OCT 64
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 4

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007534
SCALE 1/1
WT
SHEET 2 OF 2

SYM	DESCRIPTION	DATE	APPROVAL
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D	REVISED PER TDRR 15153	29 Dec 64	
E	REVISED PER TDRR 15948	11 FEB 65	
F	REVISED PER TDRR 16268	15 FEB 65	
G	REVISED PER TDRR 17613	25 MAR 65	
H	REVISED PER TDRR 18690	4 MAY 65	
J	REVISED PER TDRR 18691	7 MAY 65	
K	REVISED PER TDRR 18695	MAY 65	
L	REVISED PER TDRR 20119	9 JUL 65	
M	REVISION STATUS CHANGED	12 JUL 65	
N	REVISED PER TDRR 20686	14 JUL 65	
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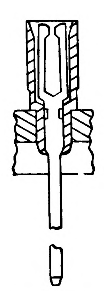
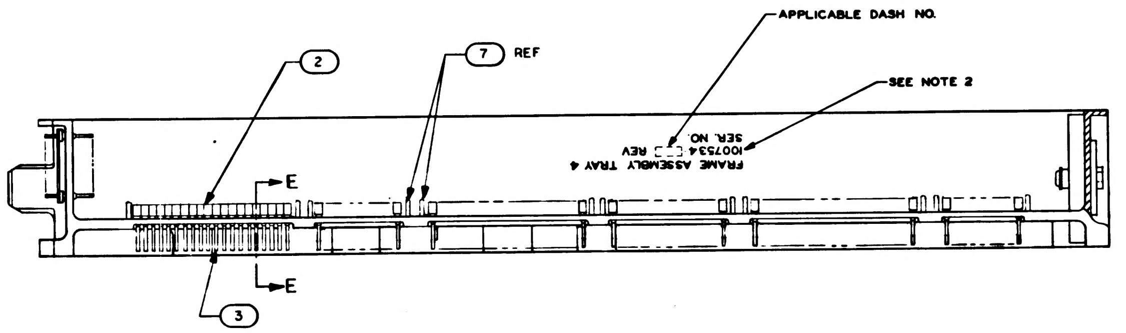
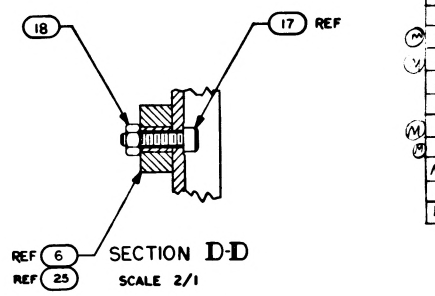
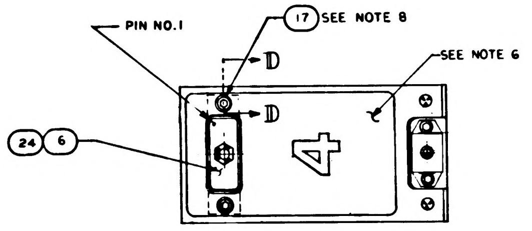
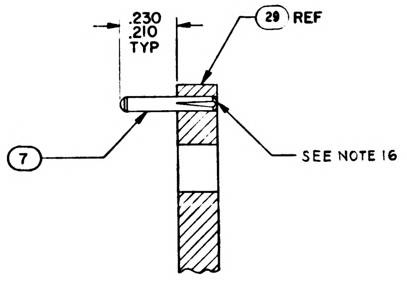

PARTIAL SECTION E-E
180 PLACES



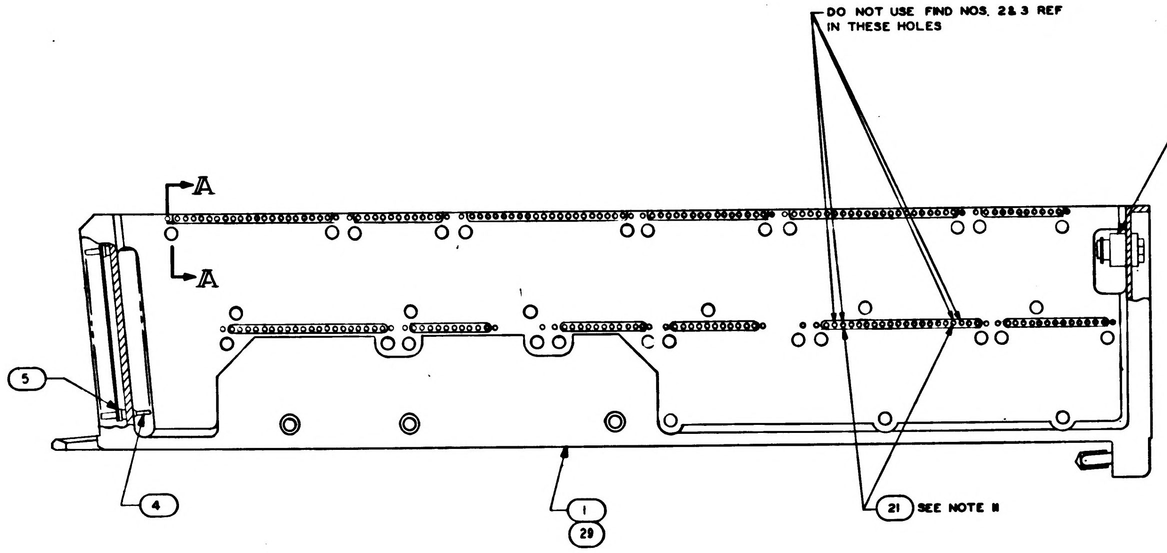


SECTION D-D
SCALE 2/1

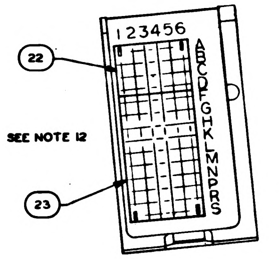


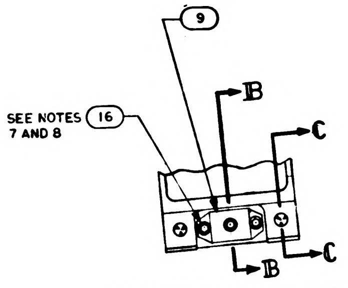


SECTION A-A
SCALE 4/1
-011 CONFIGURATION



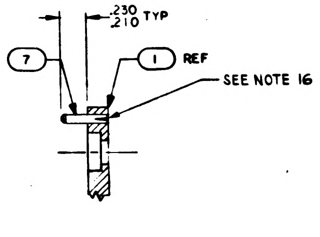
© REPLACES WORD DWG REV B



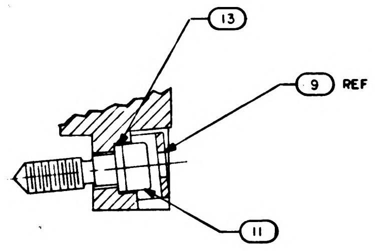


NOTES:

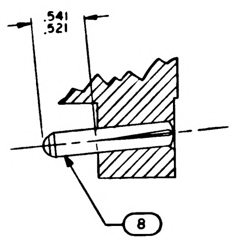
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND 1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023.
3. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND 1002136
4. BOND FIND NO. 19 AND 20 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY.
5. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACES TO BE FREE OF PRIMER.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER).
8. MOUNTING TORQUE FOR FIND NOS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB.
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
10. PROCURE PER PS 1007144.
11. BOND FIND NO. 21 INTO HOLES FOR 45A4J9-3 AND -17 PER ND 1002004, TYPE I. COVER EMPTY CONNECTOR HOLE WITH ND1002004 TYPE I.
12. BOND FIND NOS. 22 AND 23 TO FIND NO. 5 PER ND 1002237
13. BOND FIND NO. 26 FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND 1002187 OVER FIND NO. 26 AND THE ADJOINING AREA
14. BOND FIND NO. 25 ONTO FIND NO. 26 AS PREPARED IN NOTE 13 PER ND 1002004 TYPE I (ALL BARE WIRE MUST BE COMPLETELY COVERED)
15. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A FORMULATION CONSISTING OF 40 PARTS BY WT. 1010959-1, 100 PARTS BY WT. 1010959-2, AND 7 PARTS BY WT. 1006277 AND CURE AT ROOM TEMPERATURE FOR THREE HOURS OR ONE HOUR AT 140°F. LIMITED AMOUNT ALLOWED TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND1002004, TYPE I.
16. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND 1002004, POTTING SIDE ONLY.



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		—	1		1008652	FRAME	29
		—	1		1008621	WIRE LIST AA	28
		—	1		1008626	WIRING HARNESS A	27
		AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	26
		1	1		1006712 3	RESISTOR, TEMPERATURE SENSITIVE	25
		—	1		1010821-1	CONNECTOR RECEPTACLE	24
		—	╳		1009564	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	23
		1	1		1008551	GASKET CONNECTOR TRAY	22
		2	2		1008256	PIN POLARIZING	21
		╳	—		1009554	WIRING DIAGRAM	REF
		1	—		1015742	WIRE LIST AA	20
		1	—		1008271	WIRING HARNESS A	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		~~36~~	—		~~MS171433~~	~~PIN, SPRING~~	15
		~~36~~	—		~~1004207~~	~~DRIVE CYLINDER~~	14
		1	1		1008099-2	WASHER	13
		~~72~~	—		~~1004206~~	~~WASHER, THRUST~~	12
		1	1		1008098	SCREW, SOCKET HEAD	11
		~~36~~	—		~~1008172~~	~~SCREW, JACK~~	10
		1	1		1001317	RETAINER, JACK SCREW	9
		2	2		1010620-5	PIN, GUIDE	8
		24	24		M[illegible]-604	PIN, GUIDE	7
		1	—		1010622-1	CONNECTOR, RECEPTACLE	6
		84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
		84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		180	180		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		180	180		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	~~1~~		1008524	FRAME	1

QUANTITY REQUIRED
LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007574		
1007574		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN DATE 29 Sept
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 4

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007534
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

	SYM	DESCRIPTION	DATE	APPROVAL
Ⓜ	C	REPLACES WORD DWG REV B PER TDRR 13932	64	WK
	D	REVISED PER TDRR 15153	29 64	[illegible]
	E	REVISED PER TDRR 15948	FEB 65	[illegible]
Ⓜ	F	REVISED PER TDRR 16268	15 FEB 65	[illegible]
Ⓜ	G	REVISED PER TDRR 17613	25 MAR 65	[illegible]
	H	REVISED PER TDRR 18690	4 MAY 65	[illegible]
	J	REVISED PER TDRR 18691	7 MAY 65	[illegible]
Ⓜ	K	REVISED PER TDRR 18695	MAY 65	[illegible]
Ⓜ	L	REVISION STATUS CHANGED	9 JUL 65	[illegible]
	M	REVISED PER TDRR 20683	12 JUL 65	[illegible]
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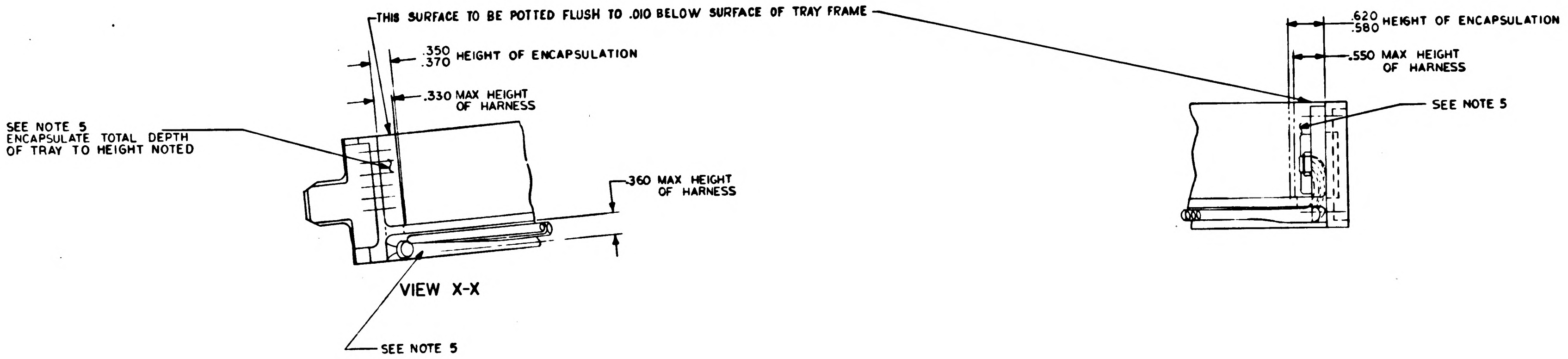
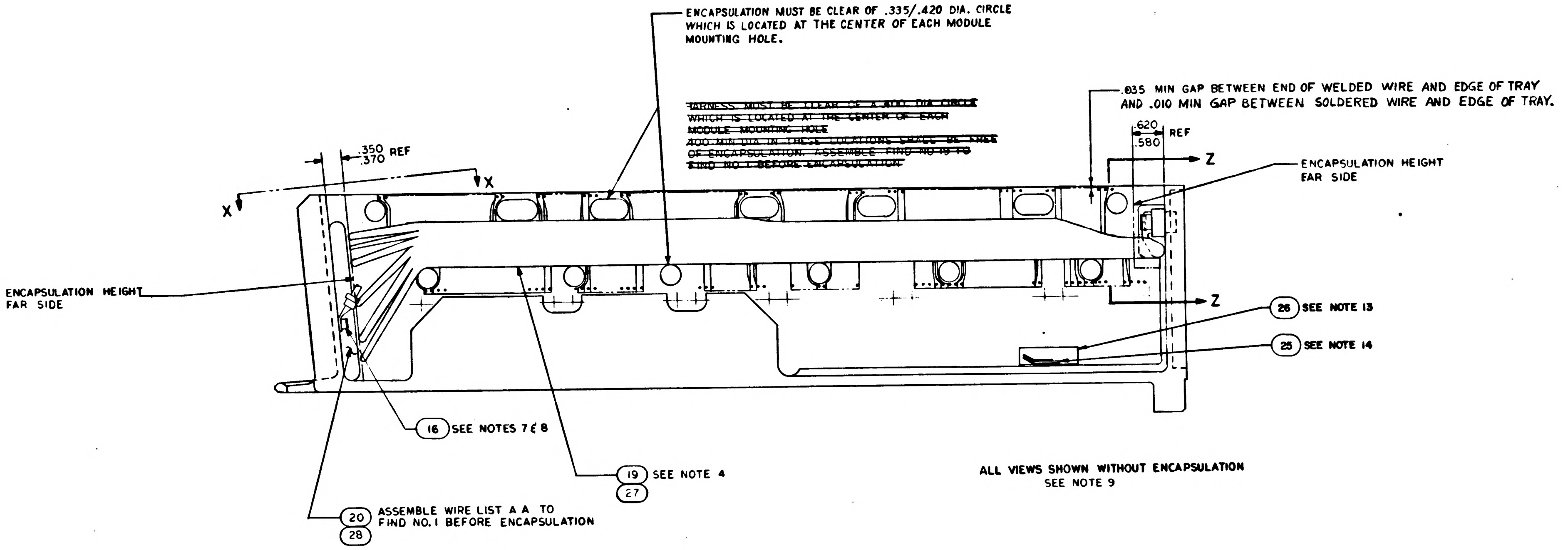
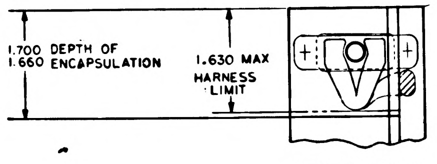
	P	REVISED PER TDRR 20785	2 JUL 65	[illegible]


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.350 .370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
VIEW X-X
SEE NOTE 5
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5


ENCAPSULATION MUST BE CLEAR OF .335/.420 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
~~HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE .400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO 19 TO FIND NO. 1 BEFORE ENCAPSULATION~~
.035 MIN GAP BETWEEN END OF WELDED WIRE AND EDGE OF TRAY AND .010 MIN GAP BETWEEN SOLDERED WIRE AND EDGE OF TRAY.
.350 .370 REF
X
X
.620 .580 REF
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
26 SEE NOTE 13
25 SEE NOTE 14
16 SEE NOTES 7 & 8
19 27 SEE NOTE 4
20 28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9


1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT

SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

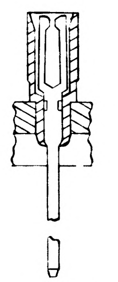
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

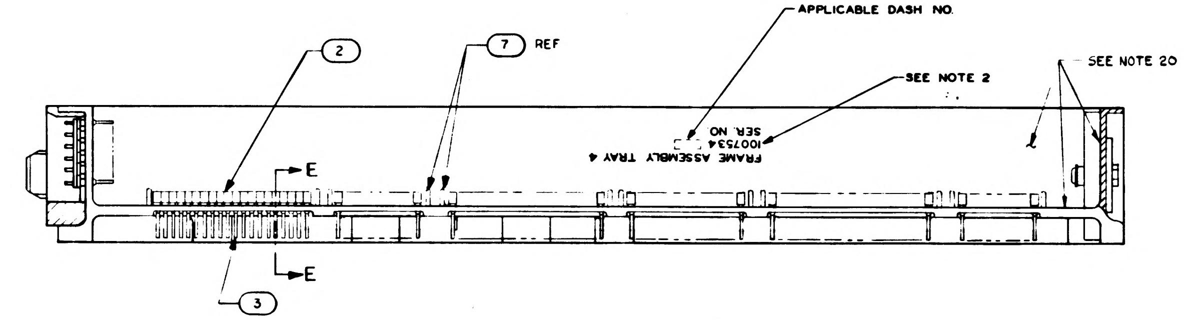
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO Contract NAS 9-497
DRAWN T. Kam DATE 29 Sept
CHECKED 7 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

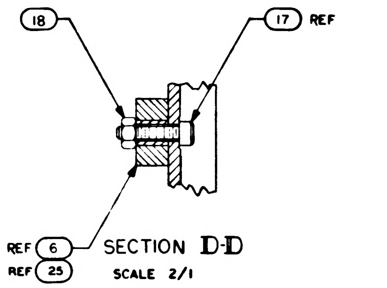
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 4

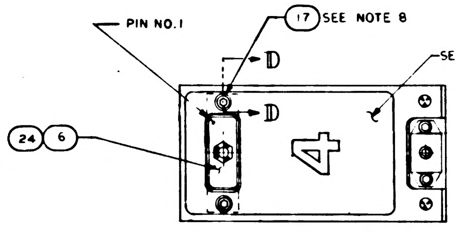
CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1007534
SCALE 1/1
WT
SHEET 2 OF 2

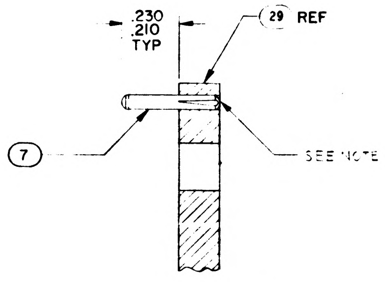




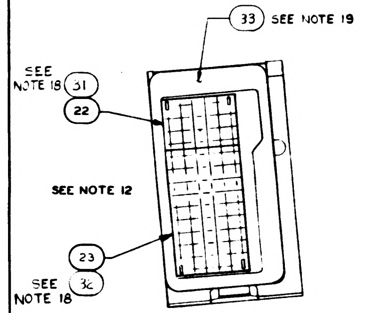


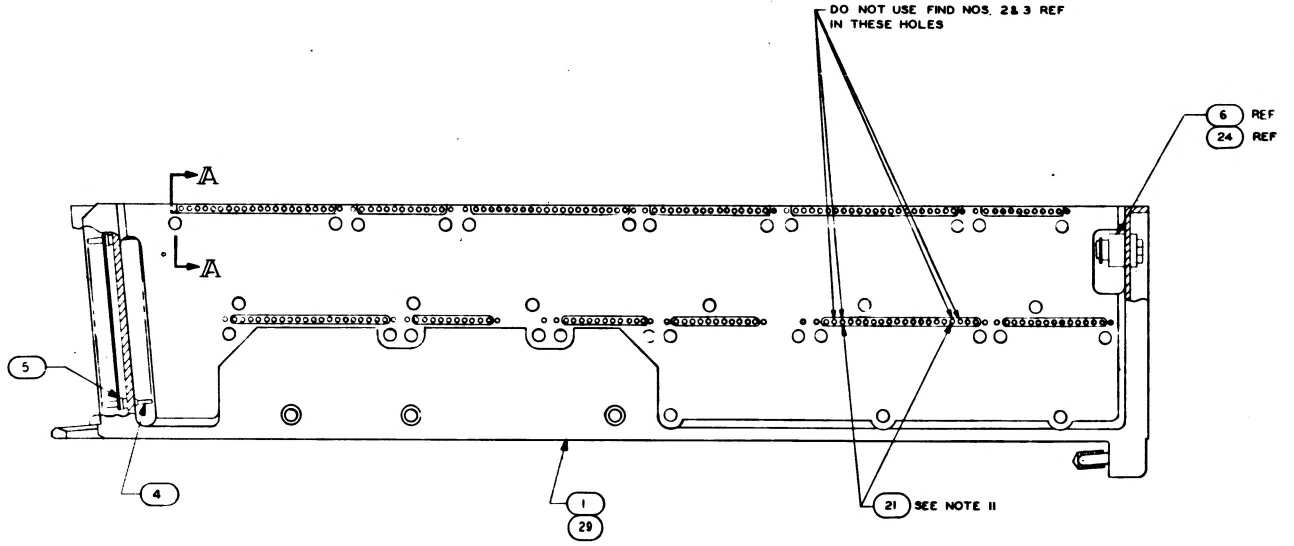
SECTION D-D
SCALE 2/1

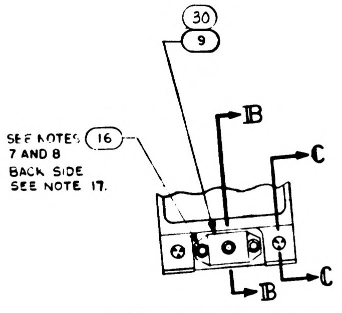


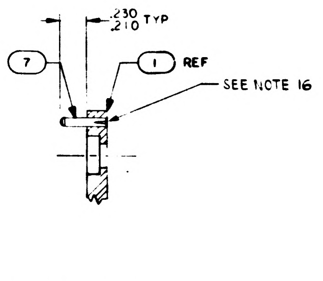


SECTION A-A
SCALE 4/1
-011 CONFIGURATION

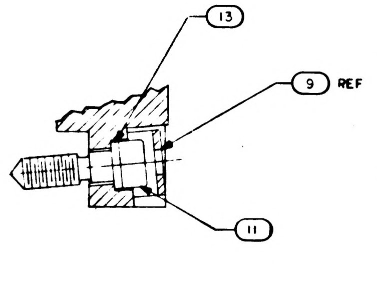




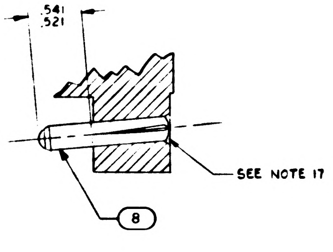




SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR [illegible]	[illegible]	[illegible]
D	REVISED PER TDRR 15153	23 Nov 64	[illegible]
E	REVISED PER TDRR 15948	11-FEB-65	[illegible]
F	REVISED PER TDRR 16268	65	E F
G	REVISED PER TDRR 17613	5 MAR 65	[illegible]
H	REVISED PER TDRR 18690	4 MAY 65	E F
J	REVISED PER TDRR 18691	7 MAY 65	E F
K	REVISED PER TDRR 18695	MAY 65	A N.
L	REVISED PER TDRR 20119	19 JUN 65	[illegible]
M	REVISION STATUS CHANGED	12 JUL 65	PLP
N	REVISED PER TDRR 20686	14 JUL 65	MCR
P	REVISED PER TDRR 20785	21 JULY 65	WJR RWH
R	REVISED PER TDRR 26409	24 [illegible]	[illegible]

	AR	—	—		SEE NOTE 20	MOISTUREPROOFING	34
	1	—	—		1008335	GASKET WASP	33
	1	—	—		1008338	GASKET CONNECTOR TRAY	32
	1	—	—		1008337	GASKET CONNECTOR TRAY	31
	1	—	—		1008333	RETAINER JACK SCREW	30

© REPLACES WORD DWG REV E

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK PER ND 1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023.
3. ASSEMBLE FIND NUMBERS 2, 3, 4 AND 5 PER ND 1002136
4. BOND FIND NO. 19 AND 20 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY.
5. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACES TO BE FREE OF PRIMER.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER).
8. MOUNTING TORQUE FOR FIND NOS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB.
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
10. PROCURE PER PS 1007144.
11. BOND FIND NO. 21 INTO HOLES FOR 45A4J9-3 AND -17 PER ND 1002004, TYPE I. COVER EMPTY CONNECTOR HOLE WITH ND1002004 TYPE I.
12. BOND FIND NOS. 22 AND 23 TO FIND NO. 5 PER ND 1002237
13. BOND FIND NO. 26 FIND NO. 1 AND APPLY A THIN COAT OF ADHESIVE PER ND 1002187 OVER FIND NO. 26 AND THE ADJOINING AREA
14. BOND FIND NO. 25 ONTO FIND NO. 26 AS PREPARED IN NOTE 13 PER ND 1002004 TYPE I (ALL BARE WIRE MUST BE COMPLETELY COVERED)
15. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A [illegible] CONSISTING OF 10 PARTS BY WT. 1010959-1, 100 PARTS BY WT. 1010959-2, AND 7 PARTS BY WT. 1006277 AND CURE AT ROOM TEMPERATURE FOR THREE HOURS OR ONE HOUR AT 140°F. LIMITED AMOUNT ALLOWED TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND1002004, TYPE I.
16. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND 1002004, POTTING SIDE ONLY.
17. FILL CAVITY PER ND1002009, METHOD J.

	1	—	1		1008652	FRAME	29
	1	—	1		1008621	WIRE LIST AA	28
	1	—	1		1008626	WIRING HARNESS A	27
	AR	AR	AR		MIL-I-15126	MYLAR TAPE, TYPE MFT 2.5	26
	1	1	1		1006712 3	RESISTOR, TEMPERATURE SENSITIVE	25
	1	—	1		1010821-1	CONNECTOR RECEPTACLE	24
	☒	—	☒		1009564	WIRING DIAGRAM	REF
	—	1	1		1008552	GASKET CONNECTOR TRAY	23
	—	1	1		1008551	GASKET CONNECTOR TRAY	22
	2	2	2		1008256	PIN POLARIZING	21
	—	☒	—		1009554	WIRING DIAGRAM	REF
	—	1	—		1015742	WIRE LIST AA	20
	—	1	—		1008271	WIRING HARNESS A	19
	2	2	2		MA21045 C 04	NUT, SELF-LOCKING HEX	18
	2	2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
	3	3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
	—	~~36~~	—		~~MS171433~~	~~PIN, SPRING~~	15
	—	~~36~~	—		~~1004207~~	~~DRIVE CYLINDER~~	14
	1	1	1		1008099-2	WASHER	13
	—	~~72~~	—		~~1004206~~	~~WASHER, THRUST~~	12
	1	1	1		1008098	SCREW, SOCKET HEAD	11
	—	~~36~~	—		~~1008172~~	~~SCREW, JACK~~	10
	—	1	1		1001317	RETAINER, JACK SCREW	9
	2	2	2		1010620-5	PIN, GUIDE	8
	24	24	24		M [illegible]-604	PIN, GUIDE	7
	—	1	—		1010622-1	CONNECTOR, RECEPTACLE	6
	84	84	84		1010383-1	INSULATOR, WRAPOST, MALE	5
	84	84	84		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
	184	180	180		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
	184	180	180		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
	—	1	~~1~~		1008524	FRAME	1
	031	021	011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
QUANTITY REQUIRED					LIST OF MATERIALS		

1007574		
1007574		
NEXT ASSY	USED ON	APPLICABLE DASH NO
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN [illegible] DATE 29 Sep 64
CHECKED [illegible] 1 Oct 64
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

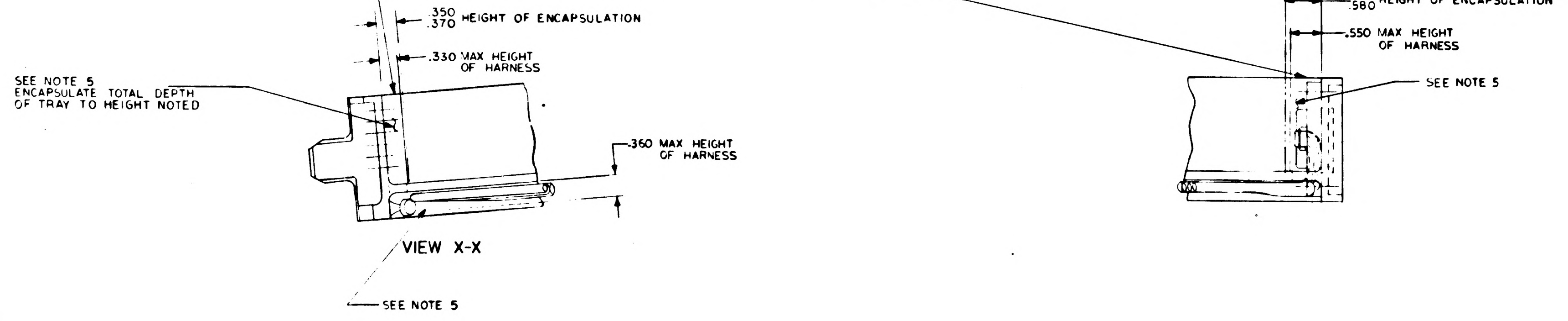
MANNED SPACECRAFT CENTER
HOUSTON TEXAS

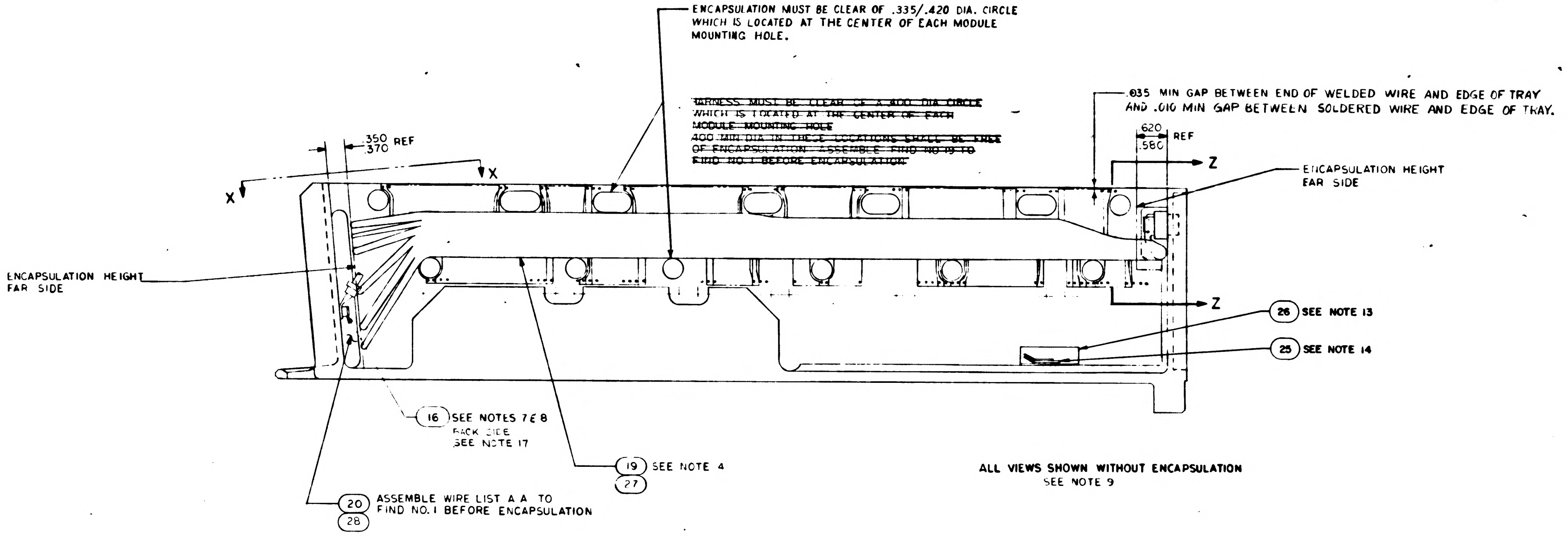
FRAME ASSEMBLY
TRAY 4

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007534
SCALE 1/1
WT
SHEET 1 OF 2

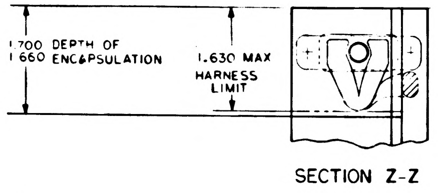
1007534 K

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 15932	[illegible]	WK
D	REVISED PER TDRR 15153	19 [illegible] 64	W.T.G. WK
E	REVISED PER TDRR 15948	11-FEB-65	[illegible]
F	REVISED PER TDRR 16268	15 FEB 65	[illegible]
G	REVISED PER TDRR 17612	2 [illegible]	[illegible]
H	REVISED PER TDRR 18690	4 MAY 65	CF
J	REVISED PER TDRR 18691	7 MAY 65	CF
K	REVISED PER TDRR 18695	11 MAY 65	A.N.
L	REVISION STATUS CHANGED	[illegible] 65	[illegible]
M	REVISED PER TDRR 20687	12 JUL 65	RLP
N	REVISION STATUS CHANGED	14 JUL 65	MC
P	REVISED PER TDRR 20785	21 JUL 65	WJR RWH
R	REVISED PER TDRR 26409	24 FEB 66	R WA


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.350
.370 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 5
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
VIEW X-X
SEE NOTE 5
.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HEIGHT OF HARNESS
SEE NOTE 5


ENCAPSULATION MUST BE CLEAR OF .335/.420 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
~~HARNESS MUST BE CLEAR OF A .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE~~
~~.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO 19 TO FIND NO 1 BEFORE ENCAPSULATION~~
.035 MIN GAP BETWEEN END OF WELDED WIRE AND EDGE OF TRAY AND .010 MIN GAP BETWEEN SOLDERED WIRE AND EDGE OF TRAY.
.350
.370 REF
X
X
.620
.580 REF
Z
Z
ENCAPSULATION HEIGHT FAR SIDE
ENCAPSULATION HEIGHT FAR SIDE
26 SEE NOTE 13
25 SEE NOTE 14
16 SEE NOTES 7 & 8
BACK SIDE
SEE NOTE 17
19 SEE NOTE 4
27
20 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
28

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 9


1.700 DEPTH OF
1.660 ENCAPSULATION
1.630 MAX HARNESS LIMIT

SECTION Z-Z

5. APPLY A BEAD OF SILICON GREASE MIL-S-8660 BETWEEN THE ROWS OF MALE MALCO PINS IN BOTH DIRECTIONS AND AROUND THE PERIMETER OF THE GASKETS ON THE MALCO CONNECTOR. NOMINAL BEAD DIAMETER SHALL BE 1/8 INCH.

19. BOND FIND NO 33 TO FIND NO 29 PER ND1002151, USING ADHESIVE PER MIL-A-25457

20. PAINT THE MODULE MOUNTING SURFACE AND THE SURFACE PERPENDICULAR TO THE MODULE MOUNTING SURFACE PER ND 002292, USING MIL-C-15328, WASH PRIMER FOLLOWED BY MIL-P-8585 ZINC CHROMATE PRIMER FOLLOWED BY 1012543-003 PAINT. MODULE GUIDE PINS, CONNECTOR FEMALE PINS AND INSULATORS TO BE FREE OF PAINT. SEE FIND NO. 34.

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
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CAMBRIDGE MASS
DRAWN DATE 29
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

FRAME ASSEMBLY
TRAY 4

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007534
SCALE 1/1
WT
SHEET 2 OF 2

1007534 R

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1007534

REVISIONS 12031

SYM	DESCRIPTION	DATE	APPROVAL

DASH NO. 011

PART NO.	DESCRIPTION	REQD.
1008524-001	Frame, Tray 4	1
1006774	Insulator, Wrapost, Female Miniature	184
1006781-2	Contact, Wrapost, Female Miniature	184
1010382-1	Contact, Blade Edge Connector	84
1010383-1	Insulator, Wrapost, Male	84
1010622-1	Connector Receptacle	1
1010620-4	Pin, Guide	24
1010620-5	Pin, Guide	2
1001317	Retainer, Jack Screw	1
1008172	Screw, Jack	36
1008098	Screw, Socket Head	1
1004206	Washer, Thrust	72
1008099-2	Washer	1
MS 16995-10	Screw, Cap, Socket Head	3
MS 16995-11	Screw, Cap, Socket Head	2
MS 21045 C 04	Nut, Self-Locking Hex	2
MS 171433	Pin, Spring	36
1004207	Drive Cylinder	36
1008552-001	Gasket, Connector	1
1008551-001	Gasket, Connector	1

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007574	

APPLICATION

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INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT

DRAWN DATE 7/15/64
CHECKED
APPROVAL
APPROVAL 8/24/64
NASA APPROVAL 8/25/64
MIT APPROVAL 2 Sep 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 4
(100 SERIES)

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007534
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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1007535 A

REVISIONS 12031			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 13191	10-6-64	

PART NO.	DESCRIPTION	DASH NO. 011 REQD.	DASH NO. 021
1008525	Frame, Tray 5	1	1
1006774	Insulator, Wrapost, Female Miniature	158	158
1006781-2	Contact, Wrapost, Female Miniature	158	158
1010382-1	Contact, Blade Edge Connector	60	60
1010383-1	Insulator, Wrapost, Male	60	60
1010622-1	Connector Receptacle	1	1
1010620-4	Pin, Guide	16	16
1010620-5	Pin, Guide	2	2
1001317	Retainer, Jack Screw	1	1
1008172	Screw, Jack	24	24
1008098	Screw, Socket Head	1	1
1004206	Washer, Thrust	48	48
1008099-2	Washer	1	1
1004207	Drive Cylinder	24	24
MS 16995-10	Screw, Cap, Socket Head	3	3
MS 16995-11	Screw, Cap, Socket Head	2	2
MS 21045 C 04	Nut, Self-Locking Hex	2	2
1006782-2	Contact, Wrapost-Male, Miniature	45	45
1006775	Insulator, Wrapost-Male, Miniature	45	45
MS 171433	Pin, Spring	24	24
1008552	Gasket, Connector	1	1
1008553	Gasket, Connector	1	1
	Harness (50 Series)		1
	Harness (100 Series)	1	

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007575	
NEXT ASSY	USED ON
APPLICATION	

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DRAWN Vacero DATE 7/15/64
CHECKED
APPROVAL
APPROVAL D.R. Test 8/24/64
NASA APPROVAL [illegible] 8/7/64
MIT APPROVAL W Kupfer 2 Aug 64

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HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 5

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007535
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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1007535 B

REVISIONS 12031

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 13191	10-6-64	WK
B	REPLACED BY CONFIGURATION DWG REV C PER TDRR 13939	11/4/64	WK

PART NO.	DESCRIPTION	DASH NO. 011 REQD.	DASH NO. 021
1008525	Frame, Tray 5	1	1
1006774	Insulator, Wrapost, Female Miniature	158	158
1006781-2	Contact, Wrapost, Female Miniature	158	158
1010382-1	Contact, Blade Edge Connector	60	60
1010383-1	Insulator, Wrapost, Male	60	60
1010622-1	Connector Receptacle	1	1
1010620-4	Pin, Guide	16	16
1010620-5	Pin, Guide	2	2
1001317	Retainer, Jack Screw	1	1
1008172	Screw, Jack	24	24
1008098	Screw, Socket Head	1	1
1004206	Washer, Thrust	48	48
1008099-2	Washer	1	1
1004207	Drive Cylinder	24	24
MS 16995-10	Screw, Cap, Socket Head	3	3
MS 16995-11	Screw, Cap, Socket Head	2	2
MS 21045 C 04	Nut, Self-Locking Hex	2	2
1006782-2	Contact, Wrapost-Male, Miniature	45	45
1006775	Insulator, Wrapost-Male, Miniature	45	45
MS 171433	Pin, Spring	24	24
1008552	Gasket, Connector	1	1
1008553	Gasket, Connector	1	1
	Harness (50 Series)		1
	Harness (100 Series)	1	

Ⓑ REPLACED BY CONFIGURATION DWG REV C

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007575	

APPLICATION

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
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DRAWN Karen DATE 7/15/64
CHECKED
APPROVAL
APPROVAL D. B. Test 8/24/64
NASA APPROVAL 8/27/64
MIT APPROVAL

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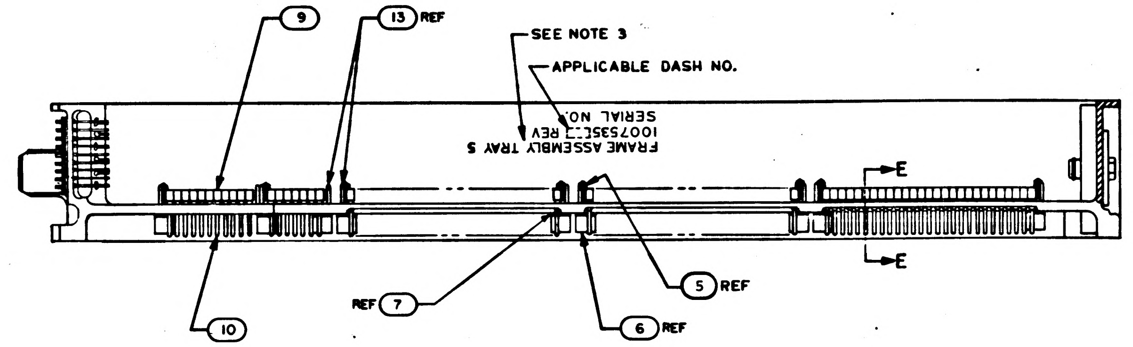
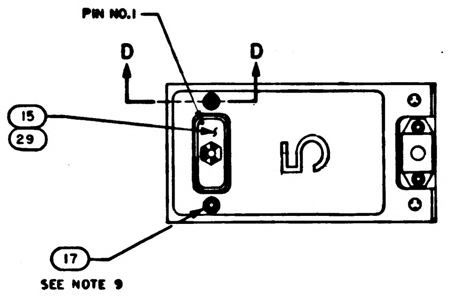
FRAME ASSEMBLY
TRAY 5

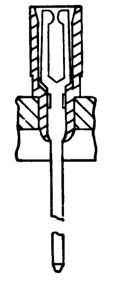
CODE IDENT NO. SIZE C NASA DRAWING NO. 1007535
SCALE WT SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

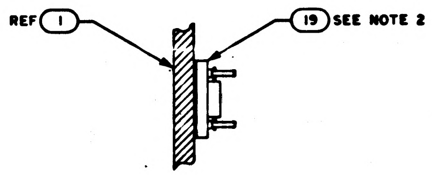
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APP'D
C		REPLACES WORD DWG REV B PER TDRR 13939		1/4/64	WK



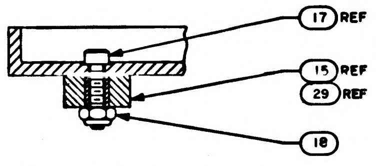




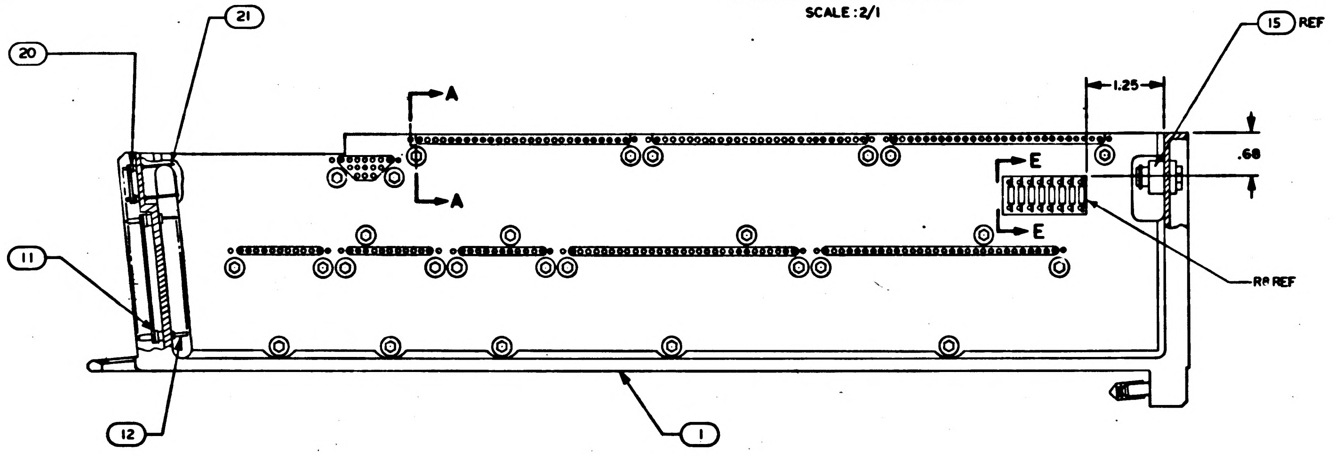
SECTION E-E



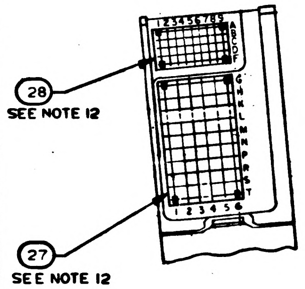
PARTIAL SECTION E-E
SCALE: 2/1

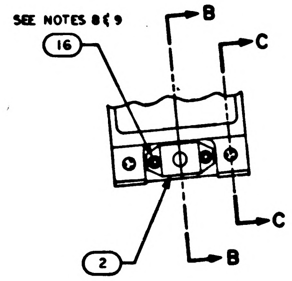


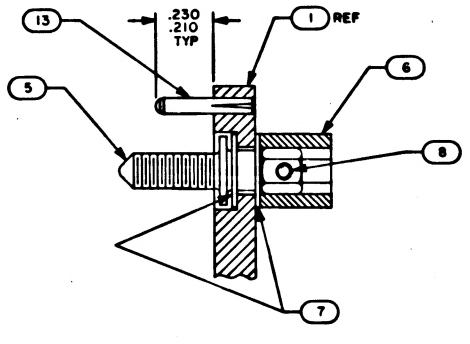
PARTIAL SECTION D-D
SCALE: 2/1



Ⓒ REPLACES WORD DWG REV B







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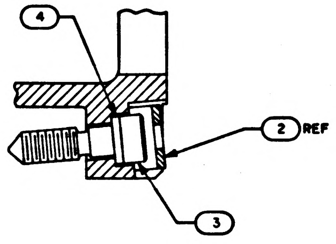
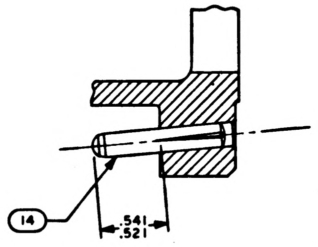
SCALE: 4/1



SECTION B-B
SCALE: 2/1



SECTION C-C
SCALE: 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
3. MARK PER ND1002019, BLACK .100/.140 HIGH & SERIALIZE PER ND 1002023
4. ASSEMBLE FIND NUMBERS 9,10,11 AND 12 PER ND 1002136
5. BOND FIND NOS. 22,23,24,25 AND 26 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME.
7. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
8. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
9. MOUNTING TORQUE FOR FIND NUMBERS 16 & 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB.
10. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071 ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
11. PROCURE PER PS1007145
12. BOND FIND NOS. 27 AND 28 TO FIND NOS. 11 AND 20 PER ND 1002237

QUANTITY REQUIRED					LIST OF MATERIALS		
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		1	-		1010622-1	CONNECTOR, RECEPTACLE	29
		X	-		1009555	WIRING DIAGRAM	REF
		1	1		1008553	GASKET CONNECTOR MIN TRAY	28
		-	X		1009565	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	27
		1	-		1015753	WIRE LIST AA	26
		1	-		1015752	WIRING HARNESS D	25
		1	-		1015751	WIRING HARNESS C	24
		1	-		1015750	WIRING HARNESS B	23
		1	-		1015749	WIRING HARNESS A	22
		45	45		1006782-2	CONTACT, WRAPOST MALE MIN	21
		45	45		1006775	INSULATOR, MALE WRAPOST MIN	20
		1	1		1007099	BUFFER RESISTORS ASSEMBLY	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING, HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		-	1		1010821-1	CONNECTOR, RECEPTACLE	15
		2	2		1010620-5	PIN, GUIDE	14
		18	18		1010620-4	PIN, GUIDE	13
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	12
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	11
		188	188		1006781-2	CONTACT, WRAPOST, FEMALE, MIN	10
		188	188		1006774	INSULATOR, WRAPOST, FEMALE, MIN	9
		27	27		MS 171433	PIN, SPRING	8
		54	54		1004206	WASHER, THRUST	7
		27	27		1004207	DRIVE CYLINDER	6
		27	27		1008172	SCREW, JACK	5
		1	1		1008099-2	WASHER,	4
		1	1		1008098	SCREW, SOCKET HEAD	3
		1	1		1001317	RETAINER, JACK SCREW	2
		1	1		1008525	FRAME	1

APPLICATION		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007575		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN DATE
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-28-64
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 5

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007535
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE [illegible]

SYM	DESCRIPTION	DATE	APPROVAL
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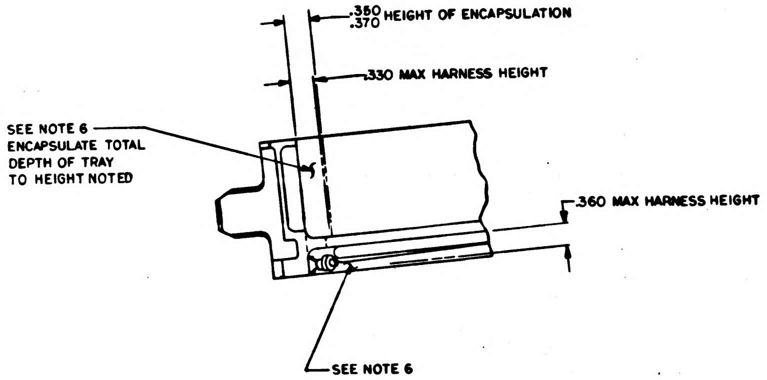
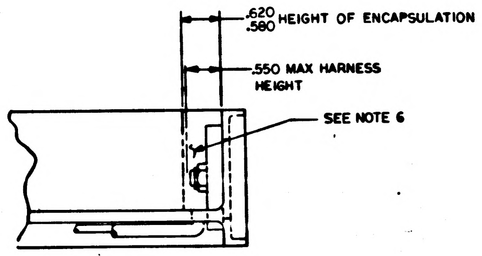
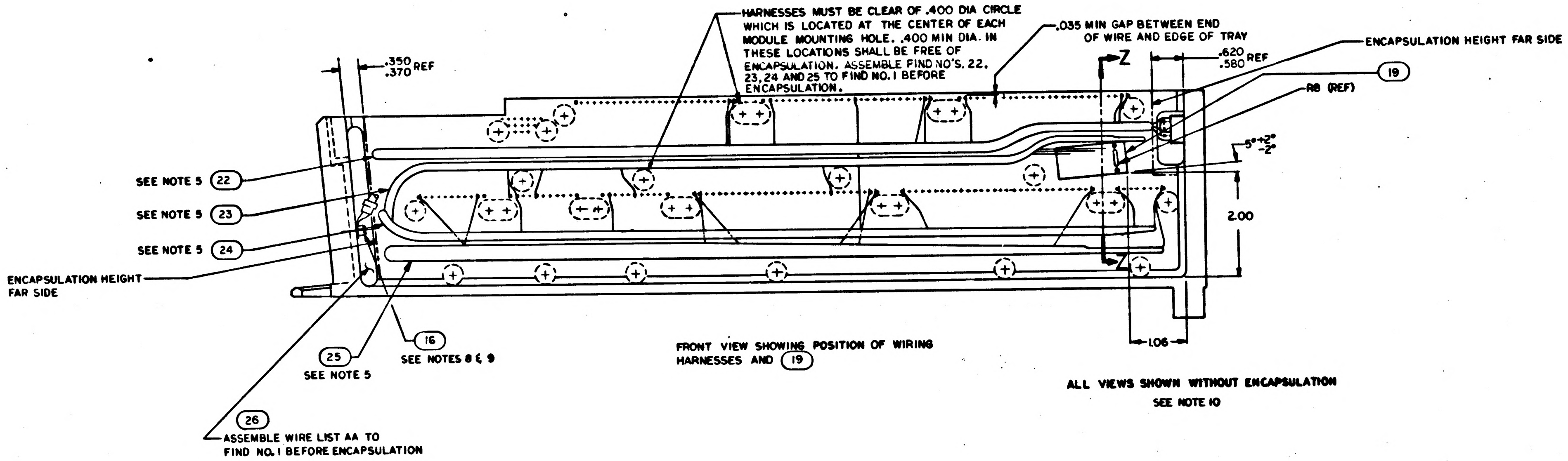
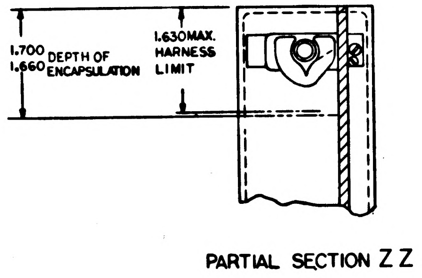

.380 .370 HEIGHT OF ENCAPSULATION
.330 MAX HARNESS HEIGHT
SEE NOTE 6 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HARNESS HEIGHT
SEE NOTE 6


.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS HEIGHT
SEE NOTE 6


HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE. .400 MIN DIA. IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO'S. 22, 23, 24 AND 25 TO FIND NO. 1 BEFORE ENCAPSULATION.
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
ENCAPSULATION HEIGHT FAR SIDE
.350 .370 REF
Z
.620 .580 REF
19
R8 (REF)
5° +2° −2°
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
ENCAPSULATION HEIGHT FAR SIDE
2.00
Z
1.06
25
SEE NOTE 5
16
SEE NOTES 8 & 9
26
ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION

FRONT VIEW SHOWING POSITION OF WIRING HARNESSES AND (19)

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 10


1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX. HARNESS LIMIT

PARTIAL SECTION Z Z

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± .DECIMALS ±.02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN Bradley DATE 1OCT64
CHECKED 6OCT64
APPROVAL 8OCT64
APPROVAL 10-29-64
NASA APPROVAL 11-4-64
MIT APPROVAL 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 5

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007535
SCALE 1/1
WT
SHEET 2 OF 2

1007535 C

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REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
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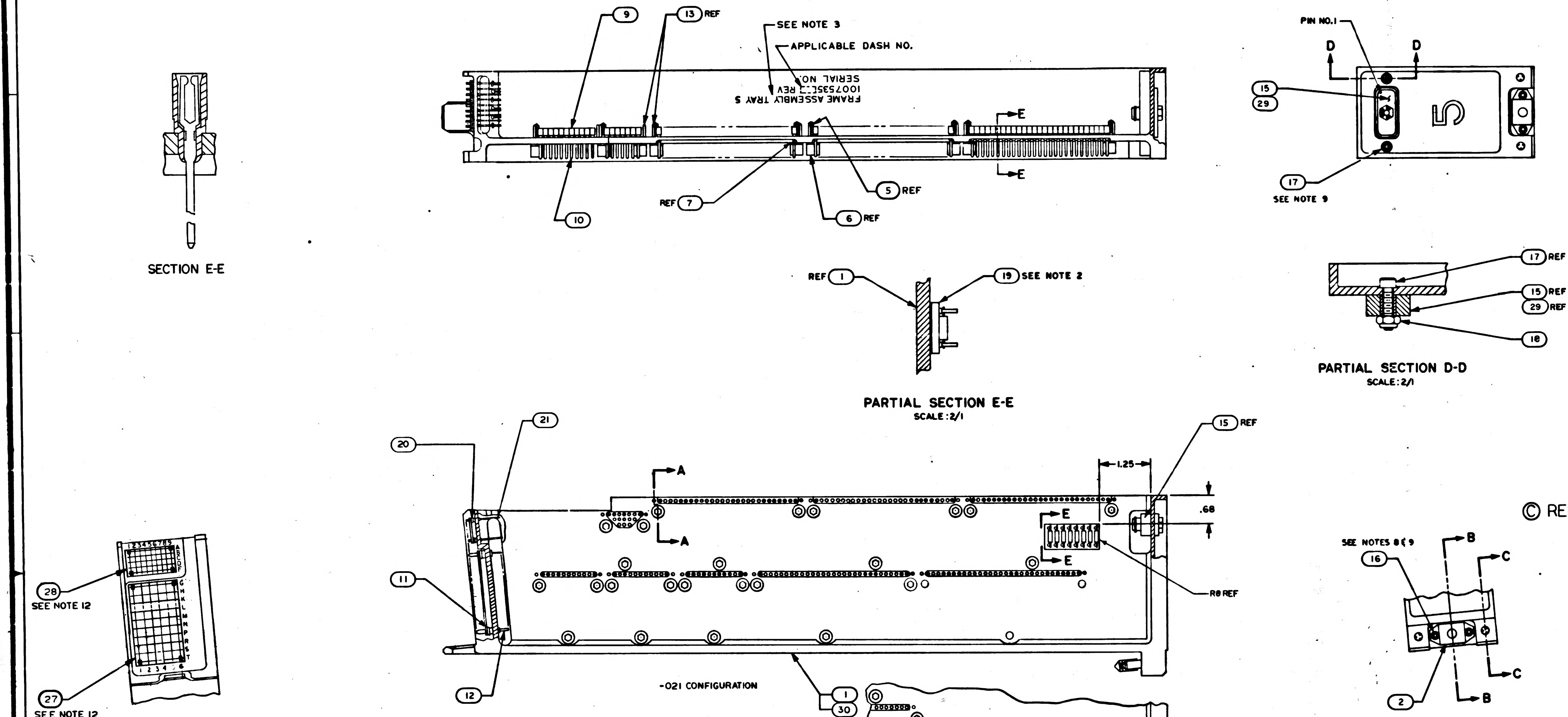
D		REVISED PER TDRR 14703		[illegible]	WR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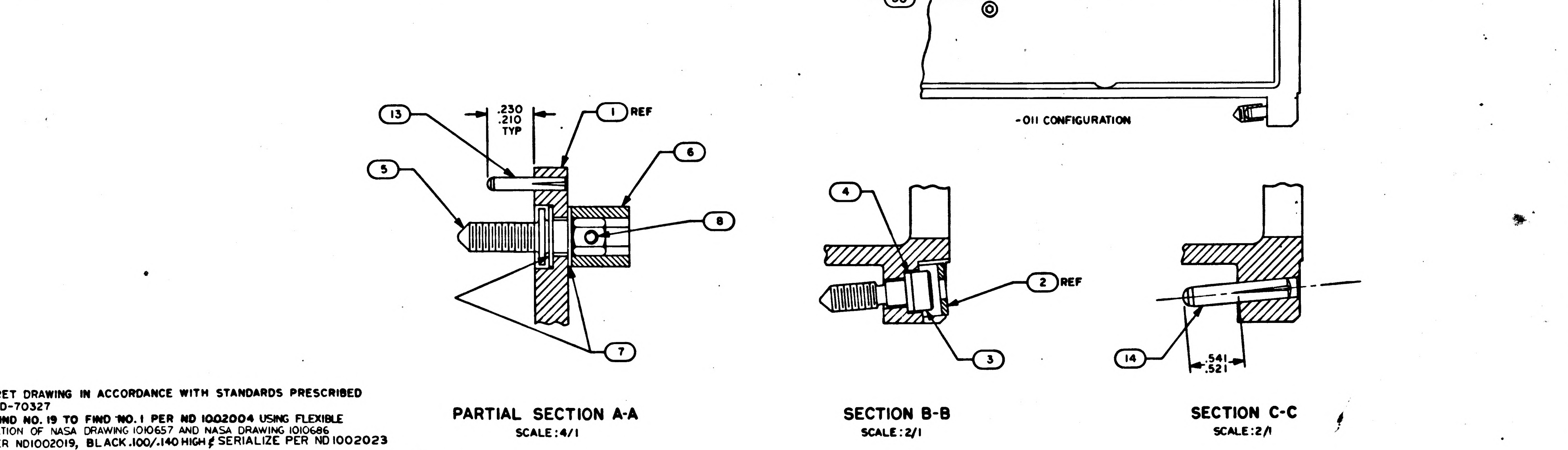
13 REF
SEE NOTE 3
APPLICABLE DASH NO.
FRAME ASSEMBLY TRAY 5
1007535 REV
SERIAL NO.
E
REF 7
6 REF
5 REF
10
SECTION E-E
REF 1
19 SEE NOTE 2
PARTIAL SECTION E-E
SCALE: 2/1
PIN NO. 1
D
15
29
5
17
SEE NOTE 9
17 REF
15 REF
29 REF
18
PARTIAL SECTION D-D
SCALE: 2/1
21
20
15 REF
1.25
.68
A
28
SEE NOTE 12
27
SEE NOTE 12
11
12
R8 REF
© REPLACES WORD DWG REV B
SEE NOTES 8 & 9
16
B
C
2
-021 CONFIGURATION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TYP
1 REF
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SCALE: 4/1
4
2 REF
3
SECTION B-B
SCALE: 2/1
14
.541
.521
SECTION C-C
SCALE: 2/1

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
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5. BOND FIND NOS. 22,23,24.25 AND 26 TO FIND NO. 1 PER ND1002004 TYPE I AS NECESSARY
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12. BOND FIND NOS. 27 AND 28 TO FIND NOS. 11 AND 20 PER ND1002237

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		–	1		1008590	FRAME	30
		1	–		1010622-1	CONNECTOR, RECEPTACLE	29
		X	–		1009555	WIRING DIAGRAM	REF
		1	1		1008553	GASKET CONNECTOR MIN TRAY	28
		–	X		1009565	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	27
		1	–		1015753	WIRE LIST AA	26
		1	–		1015752	WIRING HARNESS D	25
		1	–		1015751	WIRING HARNESS C	24
		1	–		1015750	WIRING HARNESS B	23
		1	–		1015749	WIRING HARNESS A	22
		45	45		1006782-2	CONTACT, WRAPOST MALE MIN	21
		45	45		1006775	INSULATOR, MALE WRAPOST MIN	20
		1	1		1007099	BUFFER RESISTORS ASSEMBLY	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING, HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		–	1		1010821-1	CONNECTOR, RECEPTACLE	15
		2	2		1010620-5	PIN, GUIDE	14
		18	16		1010620-4	PIN, GUIDE	13
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	12
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	11
		188	158		1006781-2	CONTACT, WRAPOST, FEMALE, MIN	10
		188	158		1006774	INSULATOR, WRAPOST, FEMALE, MIN	9
		24	24		MS171433	PIN, SPRING	8
		48	48		1004206	WASHER, THRUST	7
		24	24		1004207	DRIVE CYLINDER	6
		24	24		1008172	SCREW, JACK	5
		1	1		1008099-2	WASHER,	4
		1	1		1008098	SCREW, SOCKET HEAD	3
		1	1		1001317	RETAINER, JACK SCREW	2
		1	–		1008525	FRAME	1

QUANTITY REQUIRED

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007575		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN DATE 1 OCT 64
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-14-64
NASA APPROVAL W J 11-4-64
MIT APPROVAL 4 Nov

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 5

CODE IDENT NO. | SIZE E | NASA DRAWING NO. 1007535
SCALE 1/1 | WT | SHEET 1 OF 2

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REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
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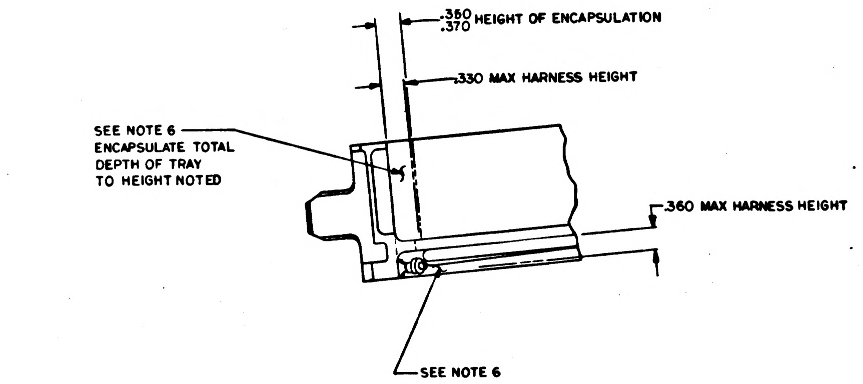
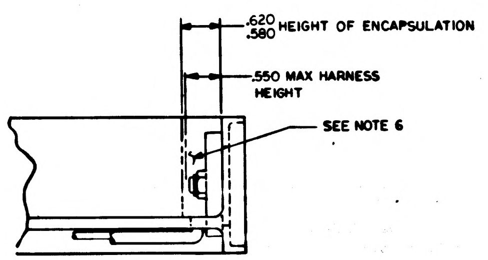
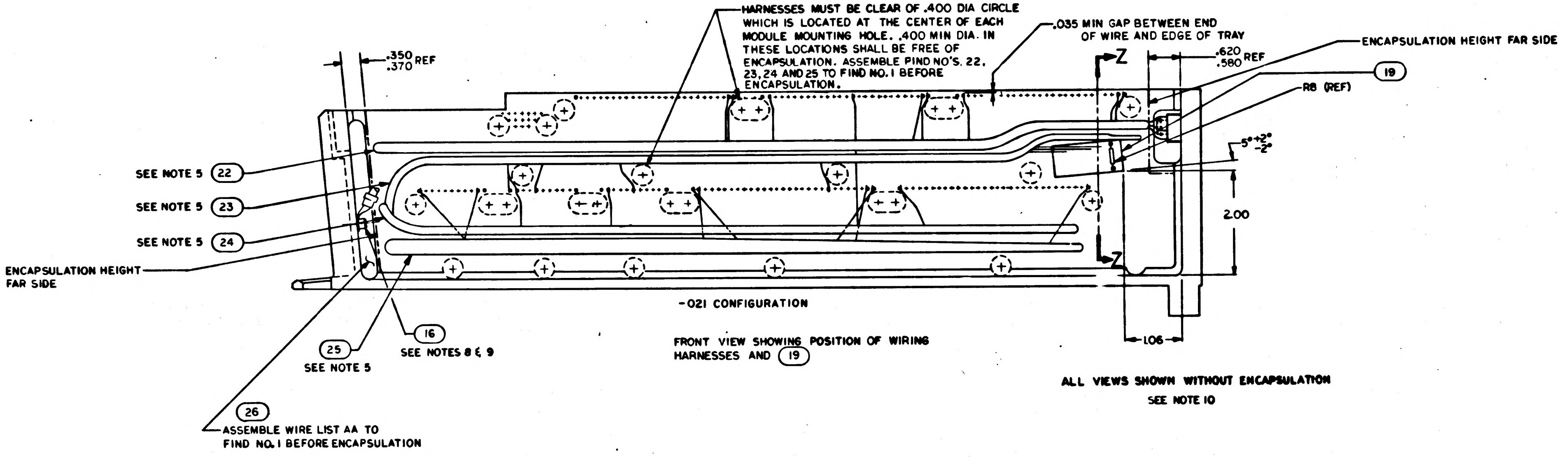
D	REVISED PER TDRR 14703	3/4/..	W/C.


.350
.370 HEIGHT OF ENCAPSULATION
.330 MAX HARNESS HEIGHT
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HARNESS HEIGHT
SEE NOTE 6


.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS HEIGHT
SEE NOTE 6

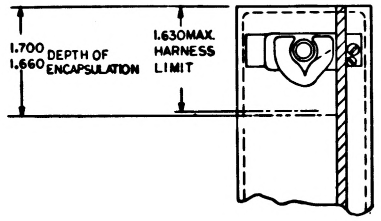

HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE. .400 MIN DIA. IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO'S. 22, 23, 24 AND 25 TO FIND NO. 1 BEFORE ENCAPSULATION.
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
ENCAPSULATION HEIGHT FAR SIDE
.350
.370 REF
.620
.580 REF
Z
19
R8 (REF)
5° +2° −2°
2.00
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
ENCAPSULATION HEIGHT FAR SIDE
Z
1.06
16
SEE NOTES 8 & 9
25
SEE NOTE 5
26
ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION

-021 CONFIGURATION

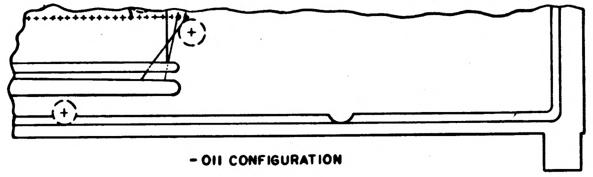
FRONT VIEW SHOWING POSITION OF WIRING HARNESSES AND (19)

ALL VIEWS SHOWN WITHOUT ENCAPSULATION

SEE NOTE 10


1.700
1.660 DEPTH OF ENCAPSULATION
1.630 MAX. HARNESS LIMIT

PARTIAL SECTION Z Z



-011 CONFIGURATION

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN Gradley DATE 1 OCT 64
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-29-64
NASA APPROVAL W J R 12-4-64
MIT APPROVAL 4 Nov 64

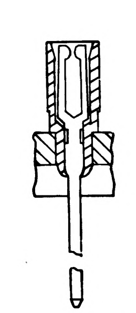
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 5

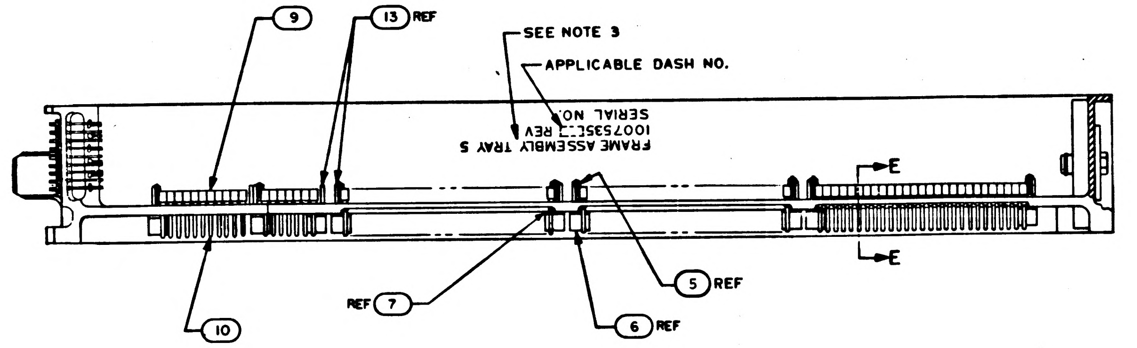
CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007535
SCALE 1/1
WT
SHEET 2 OF 2

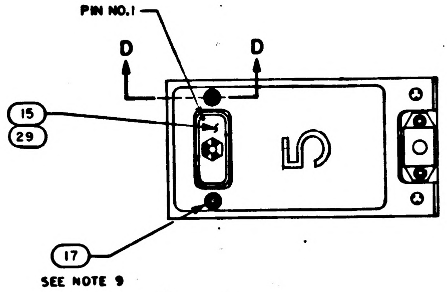
NOTICE:- WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

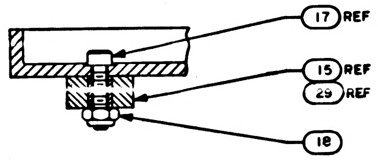
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		REPLACES WORD DWG REV B PER TDRR 13939		[illegible]	WK
D		REVISED PER TDRR [illegible]3		[illegible]	[illegible]
E		REVISED PER TDRR 5155		29 Jan 69	[illegible]



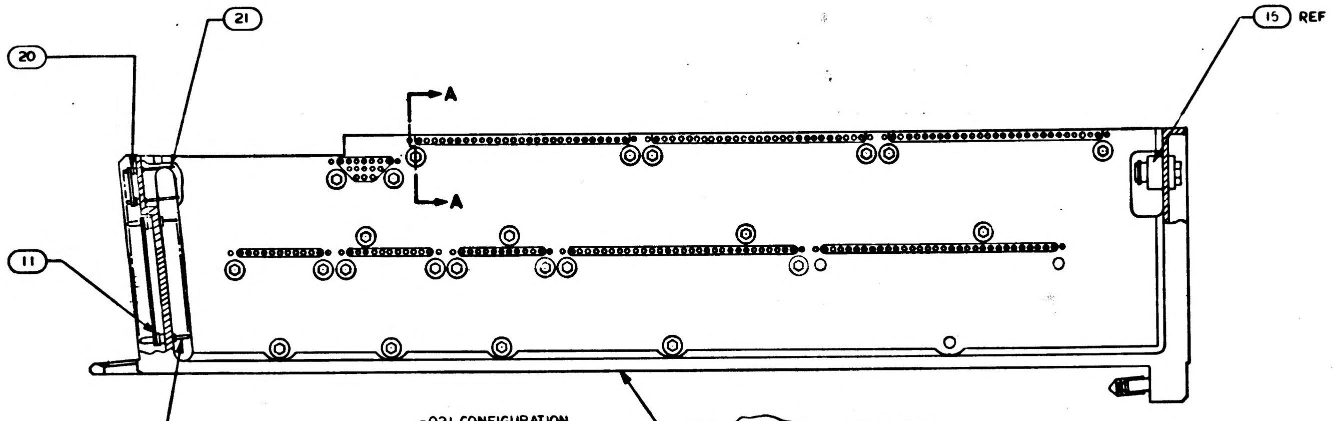
SECTION E-E



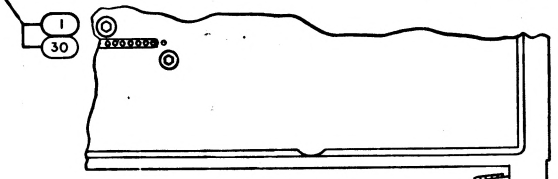




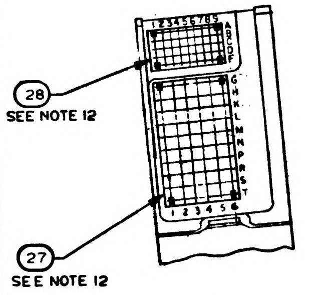
PARTIAL SECTION D-D
SCALE: 2/1



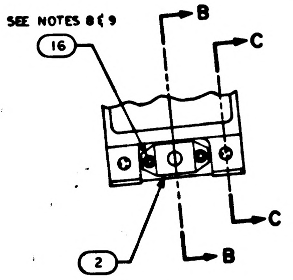
-021 CONFIGURATION

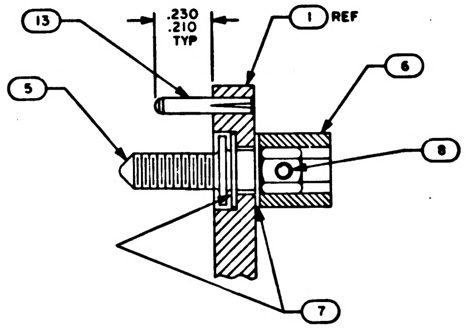


-011 CONFIGURATION

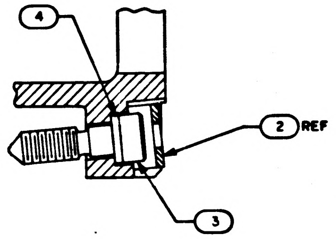


© REPLACES WORD DWG REV B

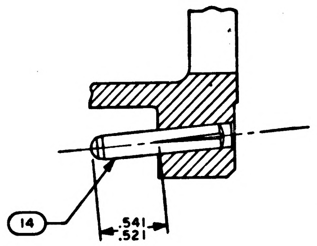




PARTIAL SECTION A-A
SCALE: 4/1



SECTION B-B
SCALE: 2/1



SECTION C-C
SCALE: 2/1

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
3. MARK PER ND1002019, BLACK .100/.140 HIGH & SERIALIZE PER ND 1002023
4. ASSEMBLE FIND NUMBERS 9,10,11 AND 12 PER ND 1002136
5. BOND FIND NOS. 22,23,24,25,26,31,32,33 AND 34 TO FIND NO. 1 PER ND1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME.
7. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
8. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
9. MOUNTING TORQUE FOR FIND NUMBERS 16 & 17 TO FIND NO. 1 TO BE 5.0–5.5 IN. LB
10. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071 ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
11. ~~PROCURE PER PS1007145~~
12. BOND FIND NOS. 27 AND 28 TO FIND NOS. 11 AND 20 PER ND1002237

QUANTITY REQUIRED				EFFECTIVITY	LIST OF MATERIALS		
		021	011		PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		–	1		1008625	WIRE LIST AA	34
		–	1		1008624	WIRING HARNESS C	33
		–	1		1008623	WIRING HARNESS B	32
		–	1		1008622	WIRING HARNESS A	31
		–	1		1008590	FRAME	30
		1	–		1010622-1	CONNECTOR, RECEPTACLE	29
		X	–		1009555	WIRING DIAGRAM	REF
		1	1		1008553	GASKET CONNECTOR MIN TRAY	28
		–	X		1009565	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	27
		1	–		1015753	WIRE LIST AA	26
		1	–		1015752	WIRING HARNESS D	25
		1	–		1015751	WIRING HARNESS C	24
		1	–		1015750	WIRING HARNESS B	23
		1	–		1015749	WIRING HARNESS A	22
		45	45		1006782-2	CONTACT, WRAPOST MALE MIN	21
		45	45		1006775	INSULATOR, MALE WRAPOST MIN	20
		1	1		1007099	BUFFER RESISTORS ASSEMBLY	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING, HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		–	1		1010821-1	CONNECTOR, RECEPTACLE	15
		2	2		1010620-5	PIN, GUIDE	14
		18	16		1010620-4	PIN, GUIDE	13
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	12
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	11
		188	158		1006781-2	CONTACT, WRAPOST, FEMALE, MIN	10
		188	158		1006774	INSULATOR, WRAPOST, FEMALE, MIN	9
		24	24		MS 171433	PIN, SPRING	8
		48	48		1004206	WASHER, THRUST	7
		24	24		1004207	DRIVE CYLINDER	6
		24	24		1008172	SCREW, JACK	5
		1	1		1008099-2	WASHER,	4
		1	1		1008098	SCREW, SOCKET HEAD	3
		1	1		1001317	RETAINER, JACK SCREW	2
		1	–		1008525	FRAME	1

1007535 E

1007575		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. Contract NAS 9-497
DRAWN [illegible] DATE 1 OCT 64
CHECKED [illegible] 6 OCT 64
APPROVAL [illegible] 8 OCT 64
M.B. APPROVAL [illegible] 10-28-64
NASA APPROVAL W J [illegible] 11-4-64
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

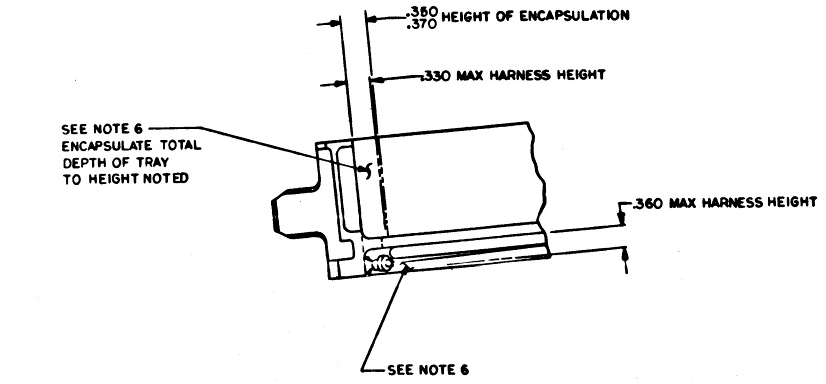
FRAME ASSEMBLY
TRAY 5

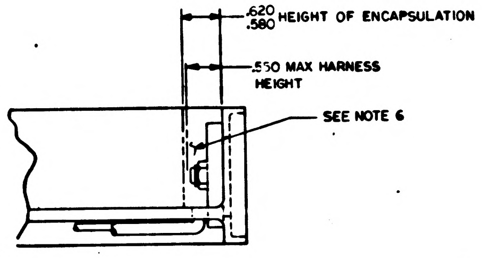
CODE IDENT NO. | SIZE E | NASA DRAWING NO. 1007535
SCALE 1/1 | WT | SHEET 1 OF 2

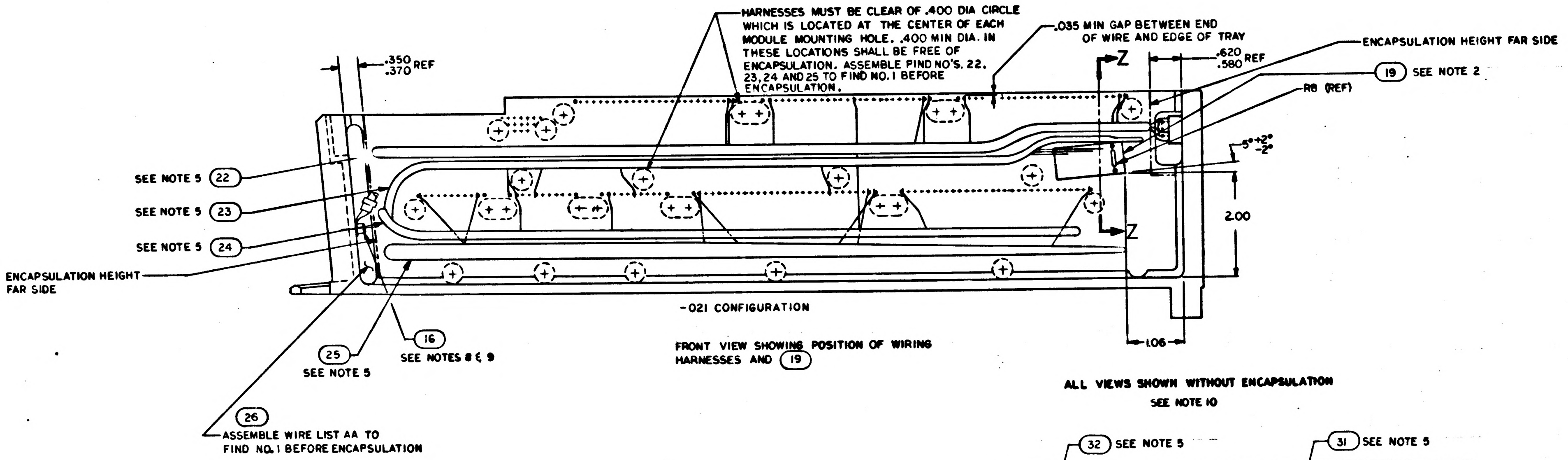
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13937	11/4/64	
D	REVISED PER TDRR 14703		
E	REVISED PER TDRR 15155	23 Dec '64	


.380
.370 HEIGHT OF ENCAPSULATION
.330 MAX HARNESS HEIGHT
SEE NOTE 6
ENCAPSULATE TOTAL
DEPTH OF TRAY
TO HEIGHT NOTED
.360 MAX HARNESS HEIGHT
SEE NOTE 6

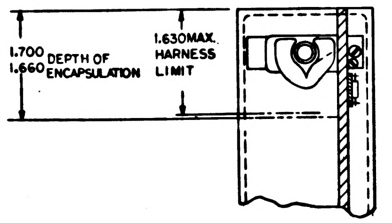

.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS
HEIGHT
SEE NOTE 6


HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE. .400 MIN DIA. IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO'S. 22, 23, 24 AND 25 TO FIND NO. 1 BEFORE ENCAPSULATION.
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
ENCAPSULATION HEIGHT FAR SIDE
.350
.370 REF
Z
.620
.580 REF
19 SEE NOTE 2
R8 (REF)
5° +2° −2°
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
2.00
Z
ENCAPSULATION HEIGHT
FAR SIDE
1.06
25
SEE NOTE 5
16
SEE NOTES 8 & 9
26
ASSEMBLE WIRE LIST AA TO
FIND NO. 1 BEFORE ENCAPSULATION

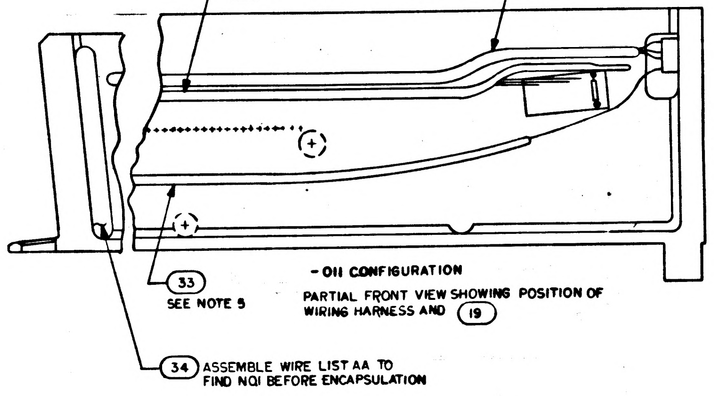
-021 CONFIGURATION

FRONT VIEW SHOWING POSITION OF WIRING HARNESSES AND ⑲

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 10


1.700
1.660 DEPTH OF
ENCAPSULATION
1.630 MAX.
HARNESS
LIMIT

PARTIAL SECTION Z Z


32 SEE NOTE 5
31 SEE NOTE 5
33
SEE NOTE 5
34 ASSEMBLE WIRE LIST AA TO
FIND NO.1 BEFORE ENCAPSULATION

-011 CONFIGURATION

PARTIAL FRONT VIEW SHOWING POSITION OF WIRING HARNESS AND ⑲

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN DATE 1 OCT 64
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-29-64
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 5

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007535
SCALE 1/1
WT
SHEET 2 OF 2

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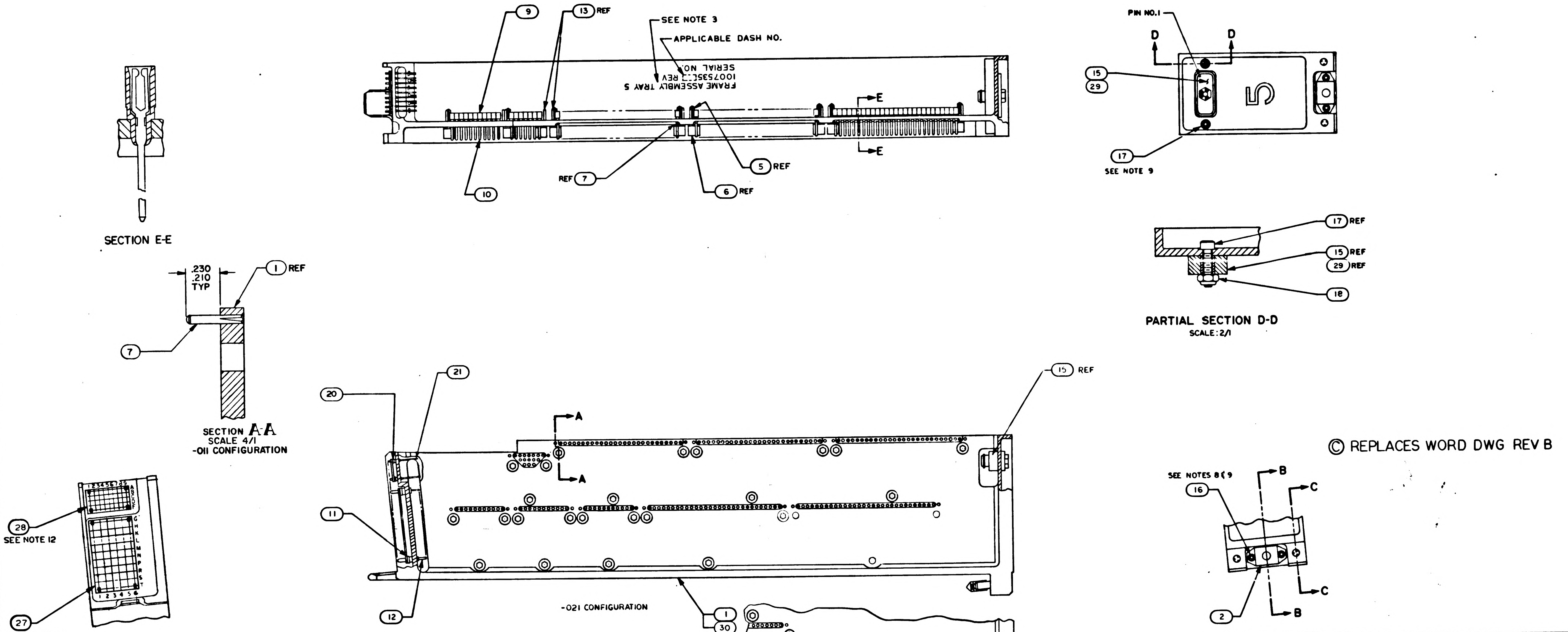
REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		REPLACES WORD DWG REV B PER TDRR 13937			WR
D		REVISED PER TDRR 14703			
E		REVISED PER TDRR 15155			
F		REVISED PER TDRR 15346			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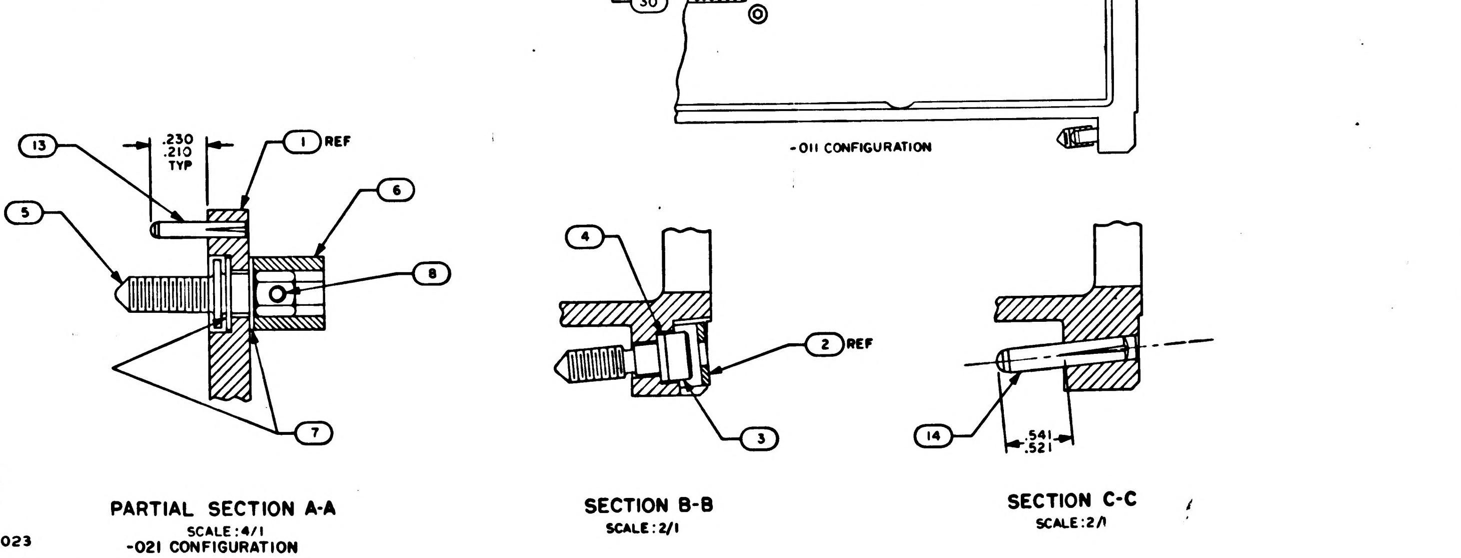
13 REF
SEE NOTE 3
APPLICABLE DASH NO.
FRAME ASSEMBLY TRAY 5
1007535[illegible] REV
SERIAL NO
E
E
REF 7
5 REF
6 REF
10
SECTION E-E
.230
.210
TYP
1 REF
7
SECTION A-A
SCALE 4/1
-011 CONFIGURATION
28
SEE NOTE 12
27
SEE NOTE 12
20
21
A
A
11
12
-021 CONFIGURATION
15 REF
1
30
PIN NO.1
D
D
15
29
5
17
SEE NOTE 9
17 REF
15 REF
29 REF
18
PARTIAL SECTION D-D
SCALE: 2/1
SEE NOTES 8 & 9
16
B
C
C
2
B

© REPLACES WORD DWG REV B


-011 CONFIGURATION
13
.230
.210
TYP
1 REF
6
5
8
7
PARTIAL SECTION A-A
SCALE: 4/1
-021 CONFIGURATION
4
2 REF
3
SECTION B-B
SCALE: 2/1
14
.541
.521
SECTION C-C
SCALE: 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
3. MARK PER ND1002019, BLACK .100/.140 HIGH & SERIALIZE PER ND 1002023
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9. MOUNTING TORQUE FOR FIND NUMBERS 16 & 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
10. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071 ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
11. PROCURE PER PS1007145.
12. BOND FIND NOS. 27 AND 28 TO FIND NOS. 11 AND 20 PER ND1002237

QUANTITY REQUIRED					LIST OF MATERIALS		
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		–	1		1008625	WIRE LIST AA	34
		–	1		1008624	WIRING HARNESS C	33
		–	1		1008623	WIRING HARNESS B	32
		–	1		1008622	WIRING HARNESS A	31
		–	1		1008590	FRAME	30
		1	–		1010622-1	CONNECTOR, RECEPTACLE	29
		☒	–		1009555	WIRING DIAGRAM	REF
		1	1		1008553	GASKET CONNECTOR MIN TRAY	28
		–	☒		1009565	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	27
		1	–		1015753	WIRE LIST AA	26
		1	–		1015752	WIRING HARNESS D	25
		1	–		1015751	WIRING HARNESS C	24
		1	–		1015750	WIRING HARNESS B	23
		1	–		1015749	WIRING HARNESS A	22
		45	45		1006782-2	CONTACT, WRAPOST MALE MIN	21
		45	45		1006775	INSULATOR, MALE WRAPOST MIN	20
		1	1		1007099	BUFFER RESISTORS ASSEMBLY	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING, HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		–	1		1010821-1	CONNECTOR, RECEPTACLE	15
		2	2		1010620-5	PIN, GUIDE	14
		18	16		1010620-4	PIN, GUIDE	13
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	12
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	11
		188	158		1006781-2	CONTACT, WRAPOST, FEMALE, MIN	10
		188	158		1006774	INSULATOR, WRAPOST, FEMALE, MIN	9
		24	—		MS 171433	PIN, SPRING	8
		48	—		1004206	WASHER, THRUST	7
		24	—		1004207	DRIVE CYLINDER	6
		24	—		1008172	SCREW, JACK	5
		1	1		1008099-2	WASHER,	4
		1	1		1008098	SCREW, SOCKET HEAD	3
		1	1		1001317	RETAINER, JACK SCREW	2
		1	–		1008525	FRAME	1

1007575		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO Contract NAS 9-497
DRAWN DATE 1 OCT 64
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
MB APPROVAL
NASA APPROVAL W J 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

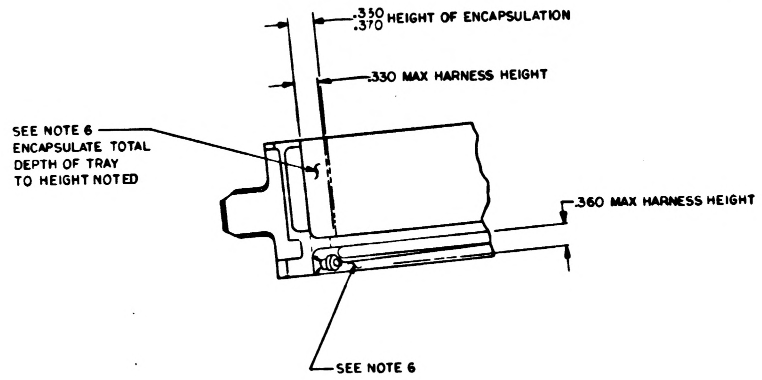
FRAME ASSEMBLY
TRAY 5

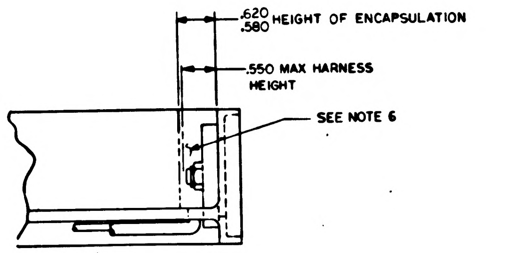
CODE IDENT NO.
SIZE E
NASA DRAWING NO 1007535
SCALE 1/1
WT
SHEET 1 OF 2

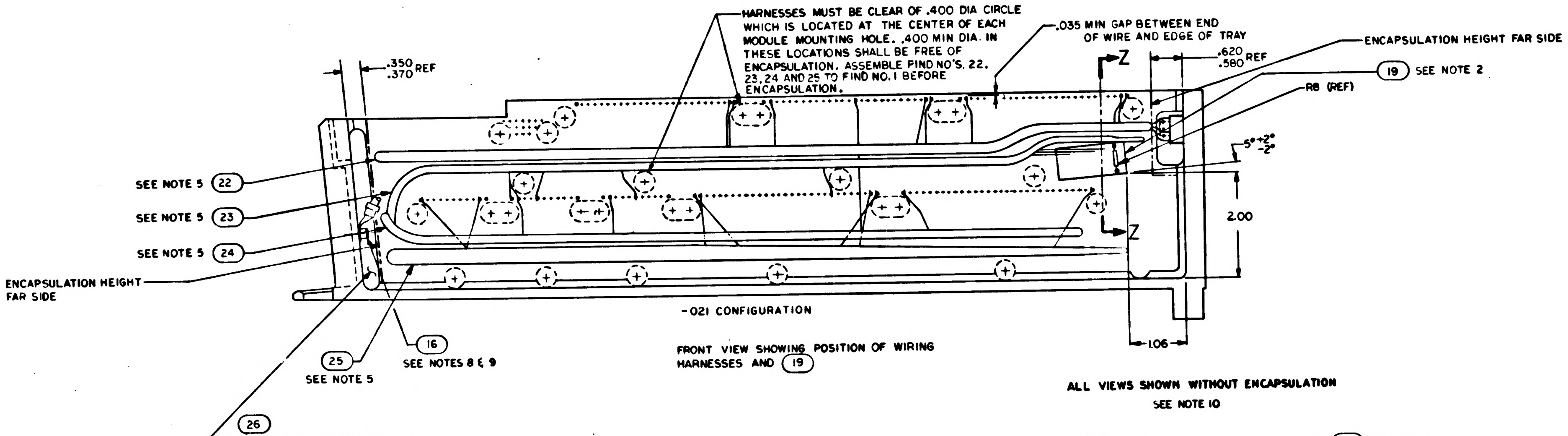
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939	11/4/64	
D	REVISED PER TDRR 14703		
E	REVISED PER TDRR 15155	29 Dec '64	
F	REVISED PER TDRR 15948	11-FEB -65	


.350
.370 HEIGHT OF ENCAPSULATION
.330 MAX HARNESS HEIGHT
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HARNESS HEIGHT
SEE NOTE 6

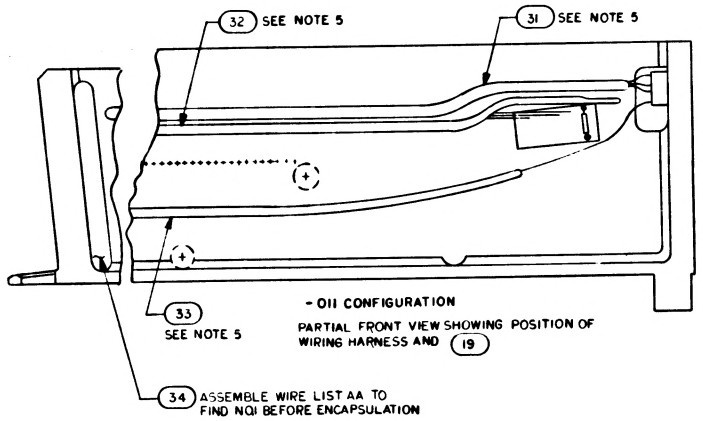

.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS HEIGHT
SEE NOTE 6


HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE. .400 MIN DIA. IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO'S. 22, 23, 24 AND 25 TO FIND NO. 1 BEFORE ENCAPSULATION.
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
ENCAPSULATION HEIGHT FAR SIDE
.350
.370 REF
Z
.620
.580 REF
19 SEE NOTE 2
R8 (REF)
5° +2° -2°
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
2.00
Z
ENCAPSULATION HEIGHT FAR SIDE
1.06
25 SEE NOTE 5
16 SEE NOTES 8 & 9
26 ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION

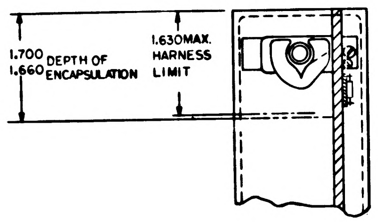
-021 CONFIGURATION

FRONT VIEW SHOWING POSITION OF WIRING HARNESSES AND ⑲

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 10


32 SEE NOTE 5
31 SEE NOTE 5
33 SEE NOTE 5
34 ASSEMBLE WIRE LIST AA TO FIND NO1 BEFORE ENCAPSULATION

-011 CONFIGURATION
PARTIAL FRONT VIEW SHOWING POSITION OF WIRING HARNESS AND ⑲


1.700
1.660 DEPTH OF ENCAPSULATION
1.630 MAX. HARNESS LIMIT

PARTIAL SECTION Z Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN Dachler DATE 1OCT64
CHECKED 6OCT64
APPROVAL Plummer 8OCT64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 5

CODE IDENT NO. | SIZE E | NASA DRAWING NO 1007535
SCALE 1/1 | WT | SHEET 2 OF 2

1007535 F

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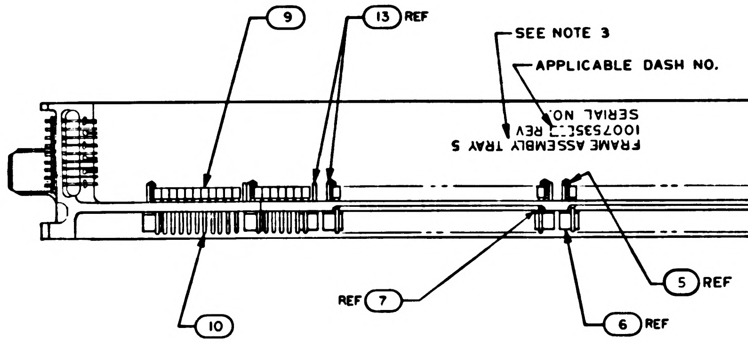
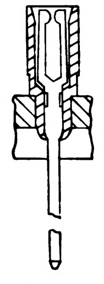
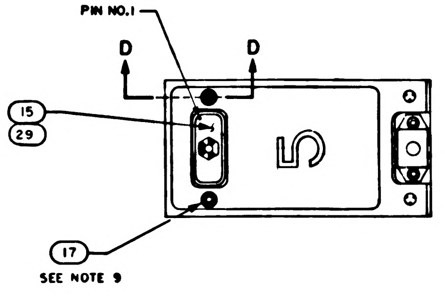
REVISIONS

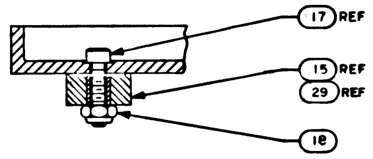
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		REPLACES WORD DWG REV B PER TDRR 13737		[illegible]	[illegible]
D		REVISED PER TDRR 14713		[illegible]	[illegible]
E		REVISED PER TDRR 5155		29 Dec 64	[illegible]
F		REVISED PER TDRR 5948		11 Feb 65	[illegible]
G		REVISED PER TDRR 17613		25 MAR 65	RJJ



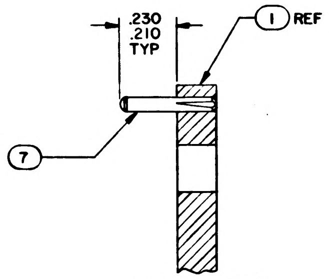


SECTION E-E

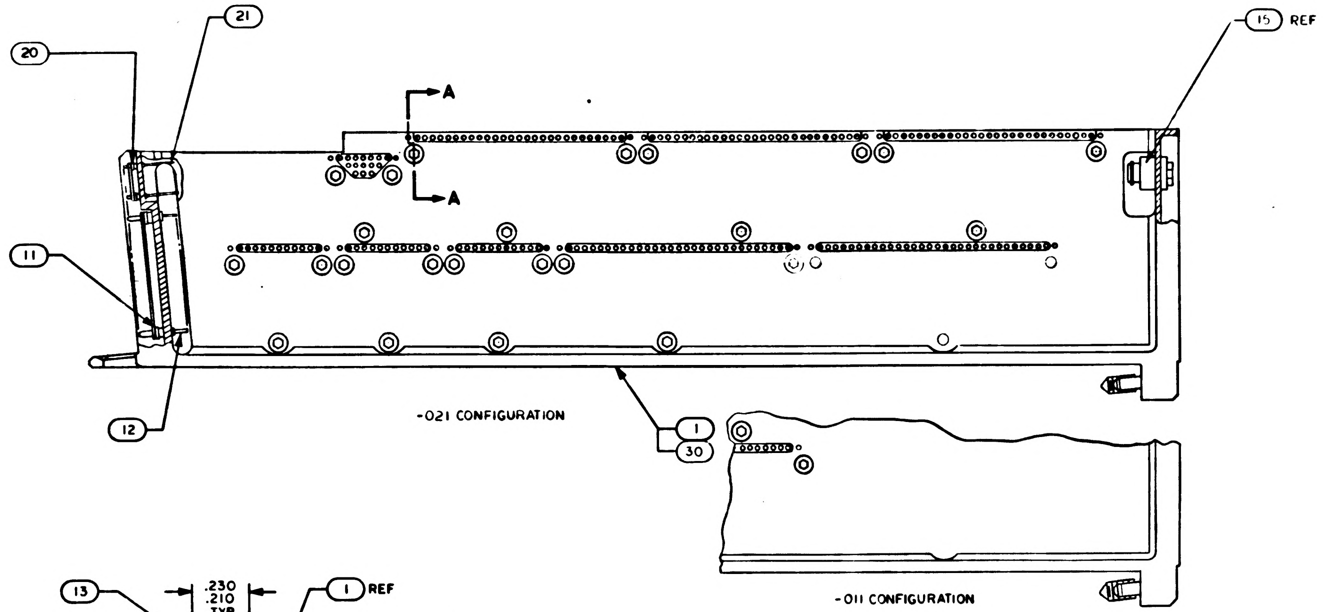




PARTIAL SECTION D-D
SCALE: 2/1

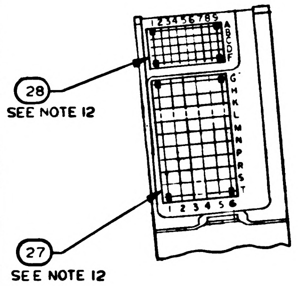


SECTION A-A
SCALE 4/1
-011 CONFIGURATION

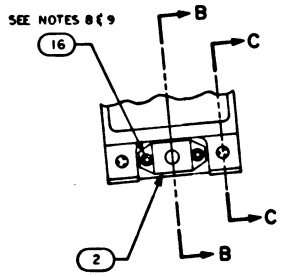


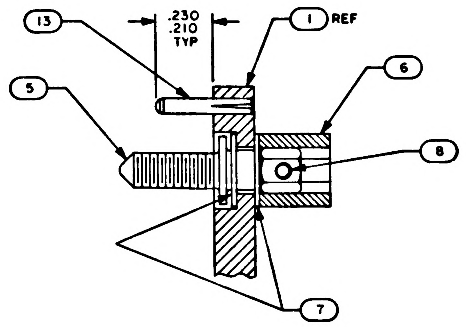
-021 CONFIGURATION

-011 CONFIGURATION

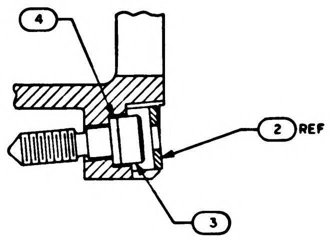


Ⓒ REPLACES WORD DWG REV B

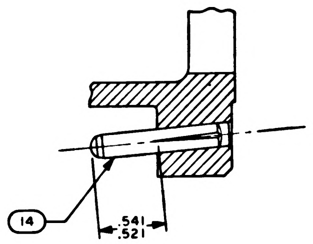




PARTIAL SECTION A-A
SCALE: 4/1
-021 CONFIGURATION



SECTION B-B
SCALE: 2/1



SECTION C-C
SCALE: 2/1

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
3. MARK PER ND1002019, BLACK .100/.140 HIGH & SERIALIZE PER ND 1002023
4. ASSEMBLE FIND NUMBERS 9,10,11 AND 12 PER ND 1002136
5. BOND FIND NOS. 22,23,24,25,26,31,32,33 AND 34 TO FIND NO.1 PER ND1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM). .010 ABOVE TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME UNLESS OTHERWISE SPECIFIED.
7. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
8. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
9. MOUNTING TORQUE FOR FIND NUMBERS 16 & 17 TO FIND NO. 1 TO BE 5.0–5.5 IN. LB
10. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071 ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
11. PROCURE PER PS1007145.
12. BOND FIND NOS. 27 AND 28 TO FIND NOS. 11 AND 20 PER ND1002237

QUANTITY REQUIRED				EFFECTIVITY	LIST OF MATERIALS		FIND NO
		021	011		PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	
		–	1		1008625	WIRE LIST AA	34
		–	1		1008624	WIRING HARNESS C	33
		–	1		1008623	WIRING HARNESS B	32
		–	1		1008622	WIRING HARNESS A	31
		–	1		1008590	FRAME	30
		1	–		1010622-1	CONNECTOR, RECEPTACLE	29
		X	–		1009555	WIRING DIAGRAM	REF
		1	1		1008553	GASKET CONNECTOR MIN TRAY	28
		–	X		1009565	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	27
		1	–		1015753	WIRE LIST AA	26
		1	–		1015752	WIRING HARNESS D	25
		1	–		1015751	WIRING HARNESS C	24
		1	–		1015750	WIRING HARNESS B	23
		1	–		1015749	WIRING HARNESS A	22
		45	45		1006782-2	CONTACT, WRAPOST MALE MIN	21
		45	45		1006775	INSULATOR, MALE WRAPOST MIN	20
		1	1		1007099	BUFFER RESISTORS ASSEMBLY	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING, HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		–	1		1010821-1	CONNECTOR, RECEPTACLE	15
		2	2		1010620-5	PIN, GUIDE	14
		18	16		1010620-4	PIN, GUIDE	13
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	12
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	11
		188	158		1006781-2	CONTACT, WRAPOST, FEMALE, MIN	10
		188	158		1006774	INSULATOR, WRAPOST, FEMALE, MIN	9
		24	—		MS 171433	PIN, SPRING	8
		48	—		1004206	WASHER, THRUST	7
		24	—		1004207	DRIVE CYLINDER	6
		24	—		1008172	SCREW, JACK	5
		1	1		1008099-2	WASHER,	4
		1	1		1008098	SCREW, SOCKET HEAD	3
		1	1		1001317	RETAINER, JACK SCREW	2
		1	–		1008525	FRAME	1

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007575		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ±
DECIMALS ±.02
ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN [illegible] DATE 1 OCT 64
CHECKED [illegible] 6 OCT 64
APPROVAL [illegible] 8 OCT 64
MIT APPROVAL [illegible]
NASA APPROVAL W J [illegible] 11-4-64
MIT APPROVAL [illegible] 4 Nov.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 5

CODE IDENT NO
SIZE E
NASA DRAWING NO 1007535
SCALE 1/1
WT
SHEET 1 OF 2

1007535 G

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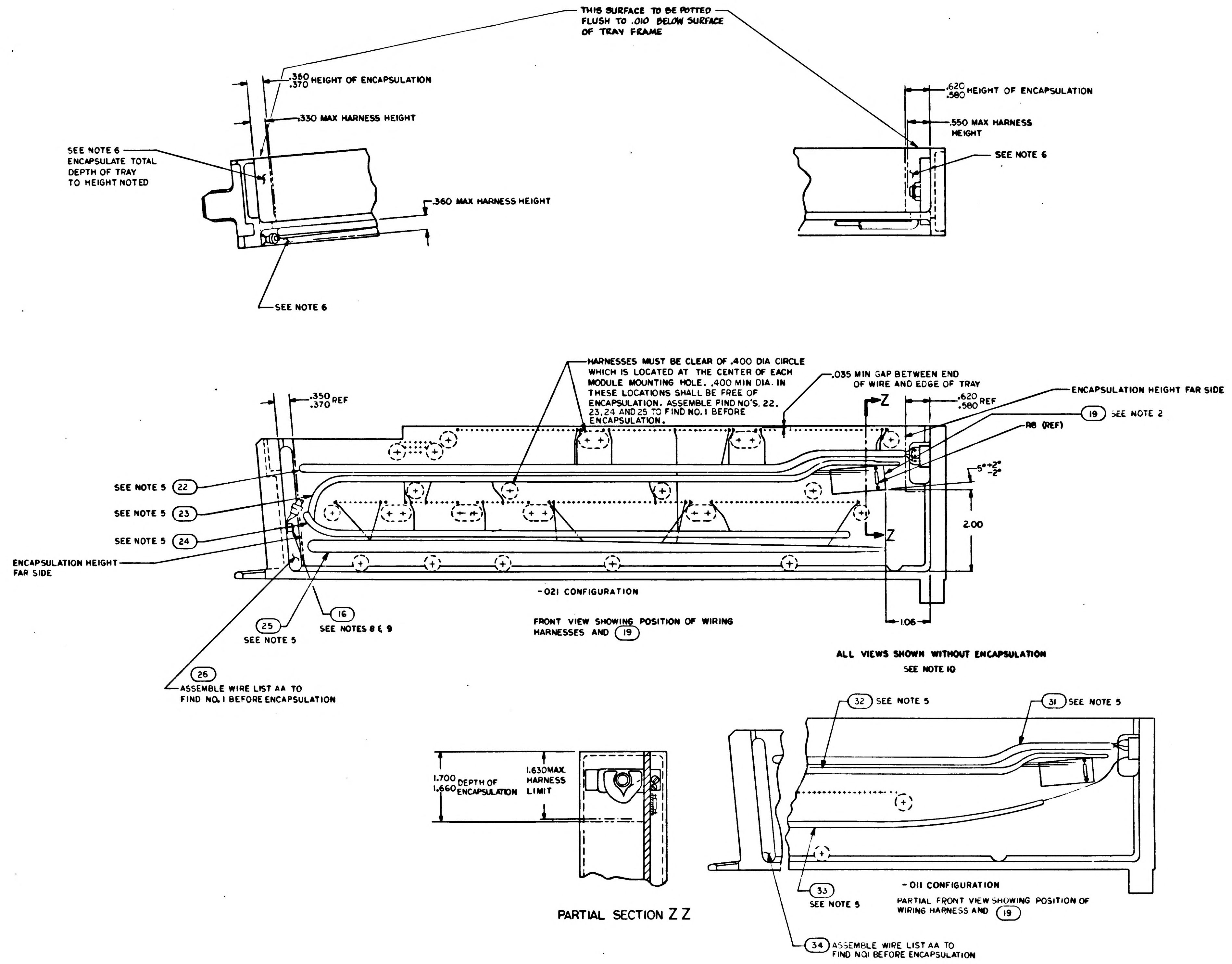
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939		
D	REVISED PER TDRR 14703		
E	REVISED PER TDRR 15155	23 Dec '64	
F	REVISED PER TDRR 15948	11-FEB -65	
G	REVISED PER TDRR 17613	MAR 65	RJJ


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.360 .370 HEIGHT OF ENCAPSULATION
.330 MAX HARNESS HEIGHT
SEE NOTE 6 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HARNESS HEIGHT
SEE NOTE 6
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS HEIGHT
SEE NOTE 6
HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE. .400 MIN DIA. IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO'S. 22, 23, 24 AND 25 TO FIND NO. 1 BEFORE ENCAPSULATION.
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350 .370 REF
.620 .580 REF
ENCAPSULATION HEIGHT FAR SIDE
Z
19 SEE NOTE 2
R8 (REF)
5° +2° -2°
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
ENCAPSULATION HEIGHT FAR SIDE
2.00
Z
1.06
25 SEE NOTE 5
16 SEE NOTES 8 & 9
26 ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION
1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX. HARNESS LIMIT
32 SEE NOTE 5
31 SEE NOTE 5
33 SEE NOTE 5
34 ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION

-021 CONFIGURATION

FRONT VIEW SHOWING POSITION OF WIRING HARNESSES AND (19)

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 10

PARTIAL SECTION Z Z

-011 CONFIGURATION

PARTIAL FRONT VIEW SHOWING POSITION OF WIRING HARNESS AND (19)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ±.02 ANGLES ± DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB Cambridge Mass DWG NO Contract NAS 9-497	MANNED SPACECRAFT CENTER HOUSTON TEXAS
MATERIAL	DRAWN DATE 1 OCT 64 CHECKED 6 OCT 64 APPROVAL 8 OCT 64 APPROVAL	FRAME ASSEMBLY TRAY 5
HEAT TREATMENT	NASA APPROVAL W J R 11-4-64	CODE IDENT NO / SIZE E / NASA DRAWING NO 1007535
FINAL FINISH	MIT APPROVAL	SCALE 1/1 / WT / SHEET 2 OF 2

1007535 G

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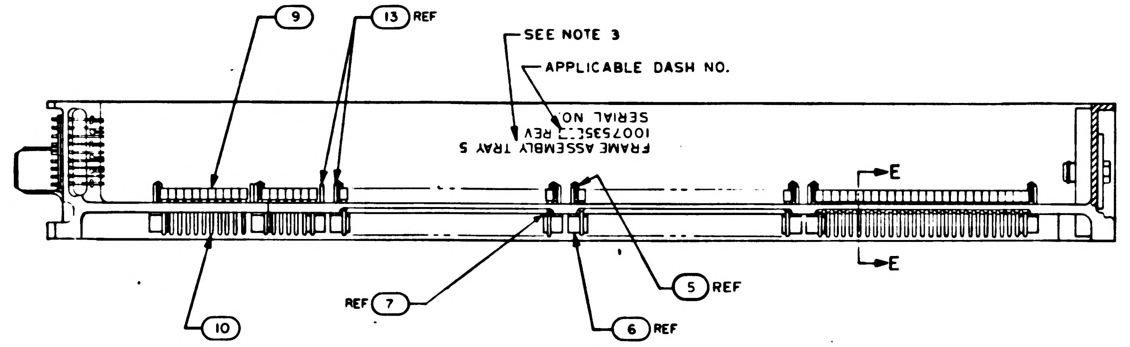
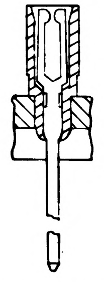
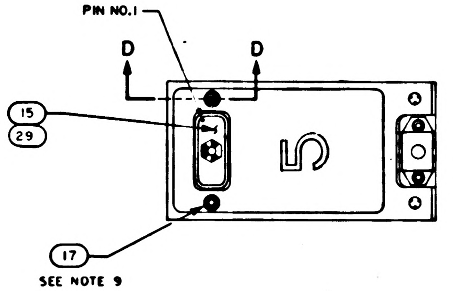
REVISIONS

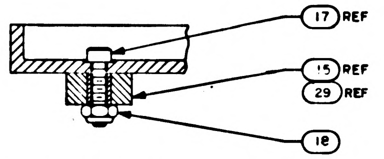
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		REPLACES WORD DWG REV B PER TDRR [illegible]		[illegible]	W
D		REVISED PER TDRR 14703		[illegible]	[illegible]
E		REVISED PER TDRR 5155		[illegible]	[illegible]
F		REVISED PER TDRR 15946		[illegible] 65	[illegible]
G		REVISED PER TDRR 17613		25 MAR 65	RJ WD
H		REVISED PER TDRR 18690		4 MAY 65	EF W.D.



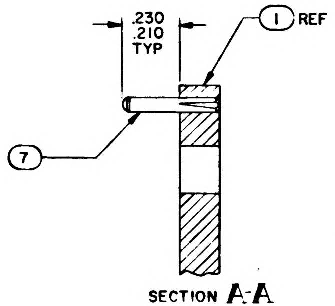


SECTION E-E

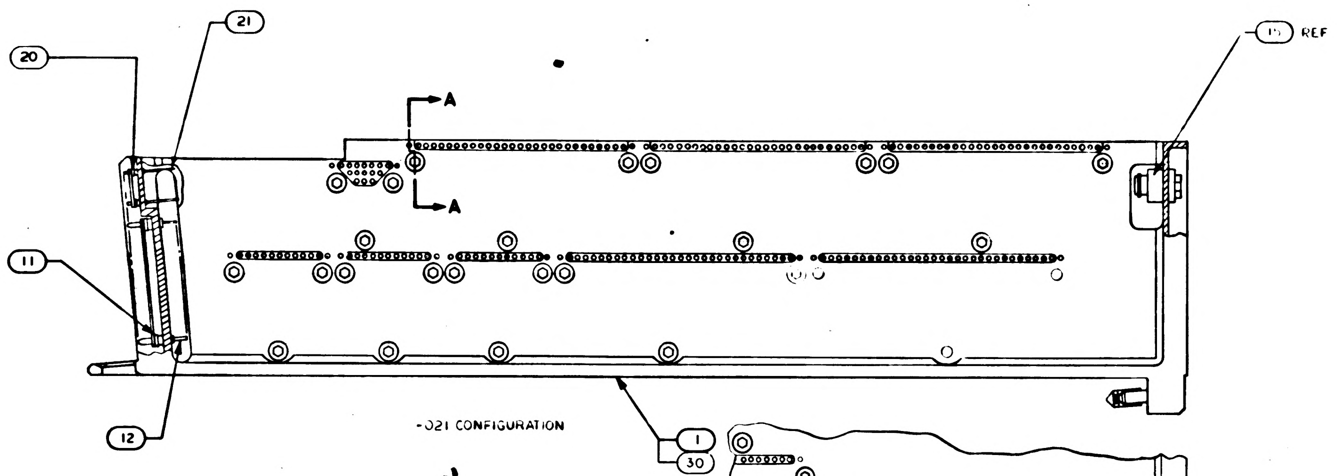




PARTIAL SECTION D-D
SCALE:2/1

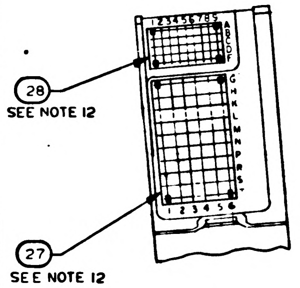


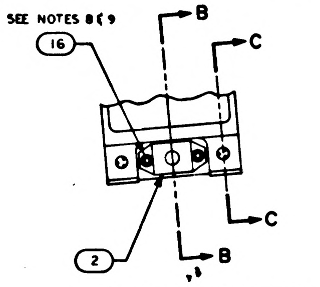
SECTION A-A
SCALE 4/1
-011 CONFIGURATION

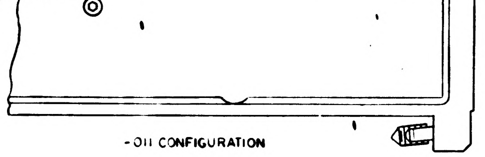


-021 CONFIGURATION

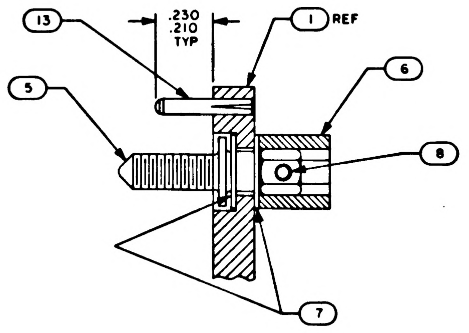
Ⓒ REPLACES WORD DWG REV B



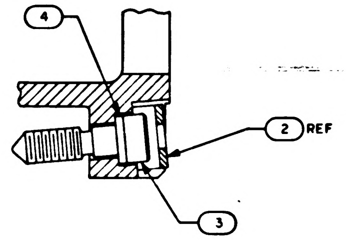




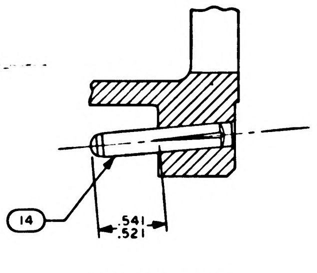
-011 CONFIGURATION



PARTIAL SECTION A-A
SCALE:4/1
-021 CONFIGURATION



SECTION B-B
SCALE:2/1



SECTION C-C
SCALE:2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
3. MARK PER ND1002019, BLACK .100/.140 HIGH & SERIALIZE PER ND 1002023
4. ASSEMBLE FIND NUMBERS 9,10,11 AND 12 PER ND 1002136
5. BOND FIND NOS. 22,23,24,25,26,31,32,33 AND 34 TO FIND NO.1 PER ND1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM).010 ABOVE TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME UNLESS OTHERWISE SPECIFIED.
7. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
8. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
9. MOUNTING TORQUE FOR FIND NUMBERS 16 & 17 TO FIND NO. 1 TO BE 5.0–5.5 IN. LB
10. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071 ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
11. PROCURE PER PS1007145.
12. BOND FIND NOS. 27 AND 28 TO FIND NOS. 11 AND 20 PER ND1002237

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		–	1		1008625	WIRE LIST AA	34
		–	1		1008624	WIRING HARNESS C	33
		–	1		1008623	WIRING HARNESS B	32
		–	1		1008622	WIRING HARNESS A	31
		–	1		1008590	FRAME	30
		1	–		1010622-1	CONNECTOR, RECEPTACLE	29
		☒	–		1009555	WIRING DIAGRAM	REF
		1	1		1008553	GASKET CONNECTOR MIN TRAY	28
		–	☒		1009565	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	27
		1	–		1015753	WIRE LIST AA	26
		1	–		1015752	WIRING HARNESS D	25
		1	–		1015751	WIRING HARNESS C	24
		1	–		1015750	WIRING HARNESS B	23
		1	–		1015749	WIRING HARNESS A	22
		45	45		1006782-2	CONTACT, WRAPOST MALE MIN	21
		45	45		1006775	INSULATOR, MALE WRAPOST MIN	20
		1	1		1007099	BUFFER RESISTORS ASSEMBLY	19
		2	2		MA21045C04	NUT, SELF-LOCKING, HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		–	1		1010821-1	CONNECTOR, RECEPTACLE	15
		2	2		1010620-5	PIN, GUIDE	14
		18	10		MS16556-604	PIN, GUIDE	13
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	12
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	11
		188	158		1006781-2	CONTACT, WRAPOST, FEMALE, MIN	10
		188	158		1006774	INSULATOR, WRAPOST, FEMALE, MIN	9
		24	—		MS171433	PIN, SPRING	8
		48	—		1004206	WASHER, THRUST	7
		24	—		1004207	DRIVE CYLINDER	6
		24	—		1008172	SCREW, JACK	5
		1	1		1008099-2	WASHER,	4
		1	1		1008098	SCREW, SOCKET HEAD	3
		1	1		1001317	RETAINER, JACK SCREW	2
		1	–		1008525	FRAME	1

QUANTITY REQUIRED
LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007575		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ±
DECIMALS ± .02
ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

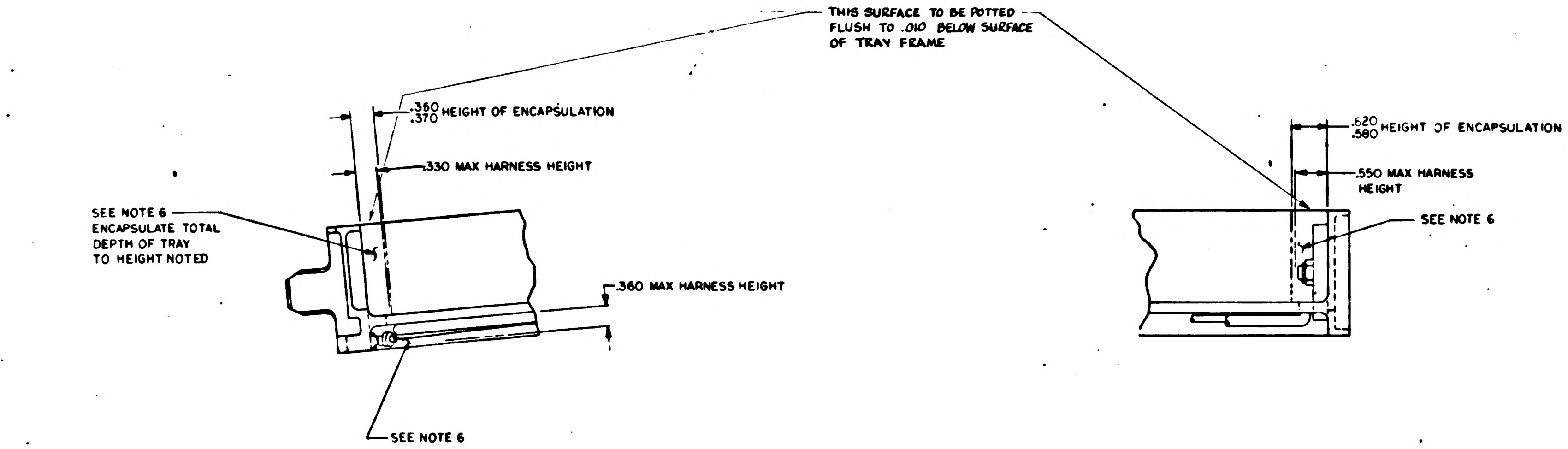
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN DATE 7 OCT 64
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

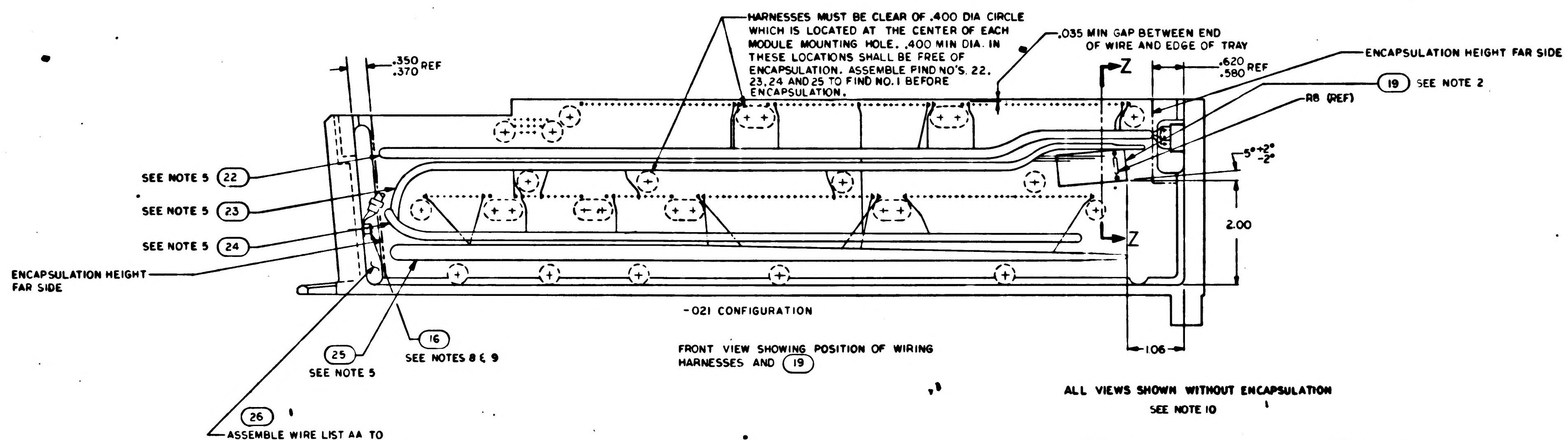
MANNED SPACECRAFT CENTER
HOUSTON TEXAS

FRAME ASSEMBLY
TRAY 5

CODE IDENT NO
SIZE E
NASA DRAWING NO 1007535
SCALE 1/1
WT
SHEET 1 OF 2

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV. B PER TDRR 13939	[illegible]	WR
D	REVISED PER TDRR 14703	[illegible]	WR
E	REVISED PER TDRR [illegible]	29 Dec '64	[illegible]
F	REVISED PER TDRR 15948	11-FEB-65	[illegible]
G	REVISED PER TDRR 17618	MAR 65	RJ WR
H	REVISED PER TDRR 18690	MAY 65	CF WR

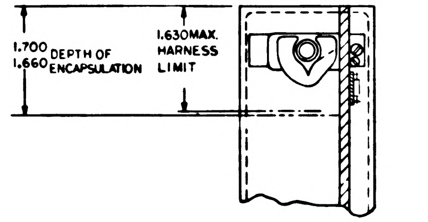

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.380 .370 HEIGHT OF ENCAPSULATION
.330 MAX HARNESS HEIGHT
SEE NOTE 6 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HARNESS HEIGHT
SEE NOTE 6
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS HEIGHT
SEE NOTE 6


.350 .370 REF
HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE. .400 MIN DIA. IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO'S. 22, 23, 24 AND 25 TO FIND NO. 1 BEFORE ENCAPSULATION.
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
Z
.620 .580 REF
ENCAPSULATION HEIGHT FAR SIDE
19 SEE NOTE 2
R8 (REF)
5° +2° -2°
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
ENCAPSULATION HEIGHT FAR SIDE
2.00
Z
.106
25 SEE NOTE 5
16 SEE NOTES 8 & 9
26 ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION

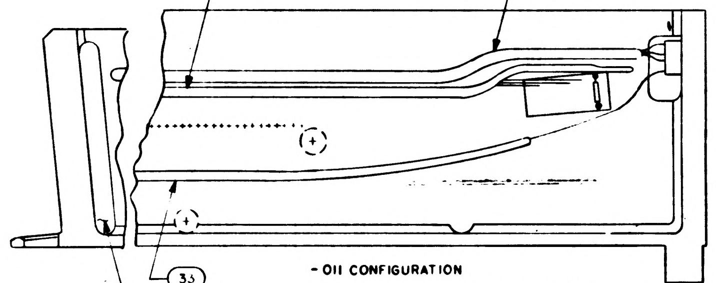
-021 CONFIGURATION

FRONT VIEW SHOWING POSITION OF WIRING HARNESSES AND (19)

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 10


1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX. HARNESS LIMIT

PARTIAL SECTION Z Z


32 SEE NOTE 5
31 SEE NOTE 5
33 SEE NOTE 5
34 ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION

-011 CONFIGURATION

PARTIAL FRONT VIEW SHOWING POSITION OF WIRING HARNESS AND (19)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN [illegible] DATE 1 OCT 64
CHECKED [illegible] 6 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible] 11-20-64
NASA APPROVAL W. J. [illegible] 11-4-64
MIT APPROVAL [illegible] 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

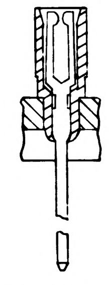
FRAME ASSEMBLY
TRAY 5

CODE IDENT NO.
SIZE E
NASA DRAWING NO 1007535
SCALE 1/1
WT
SHEET 2 OF 2

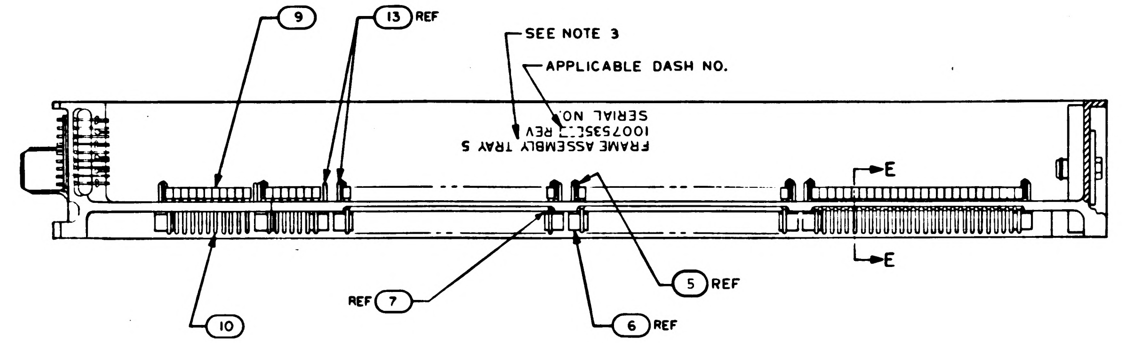
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

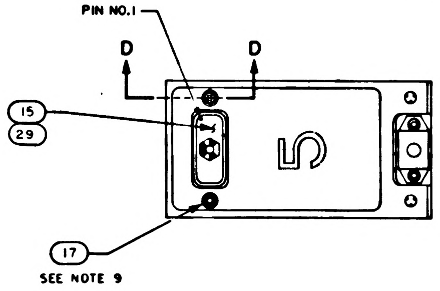
REVISIONS

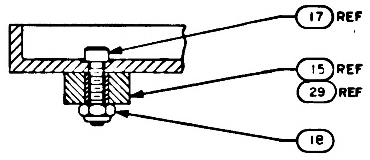
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		REPLACES WORD DWG REV B PER TDRR 13737		[illegible]	W
D		REVISED PER TDRR 14703		[illegible]	WH
E		REVISED PER TDRR 15155		19 Jan 65	[illegible]
F		REVISED PER TDRR 15948		11-FEB-65	[illegible]
G		REVISED PER TDRR 17613		25 MAR 65	RW W.D.
H		REVISED PER TDRR 18690		4 MAY 65	EF W.D.
J		REVISED PER TDRR 18691		7 MAY 65	JJJ EF



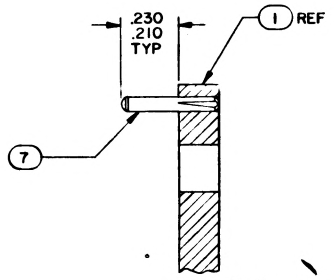
SECTION E-E



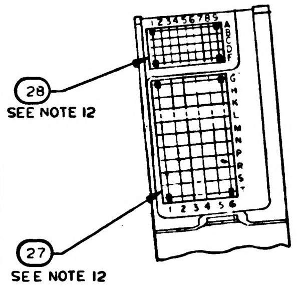


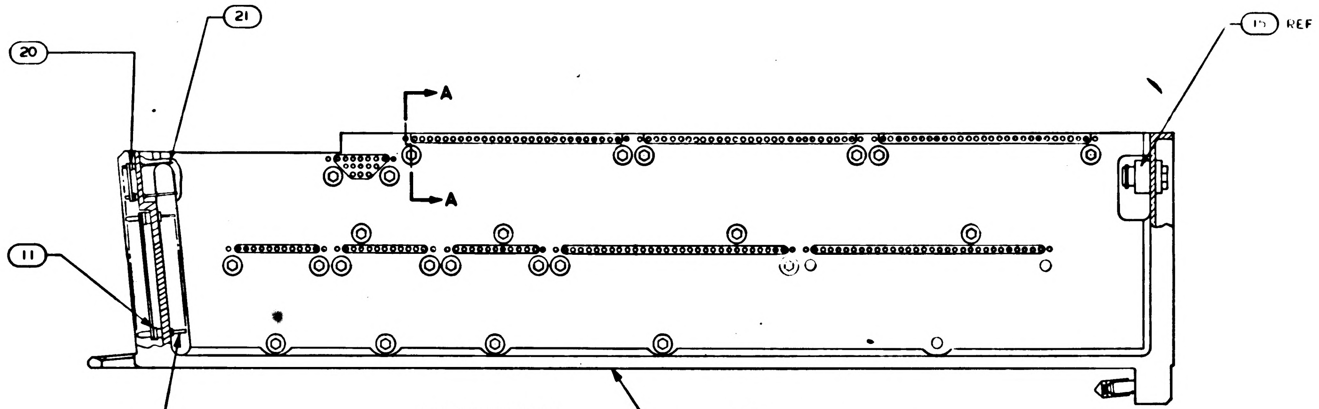


PARTIAL SECTION D-D
SCALE: 2/1

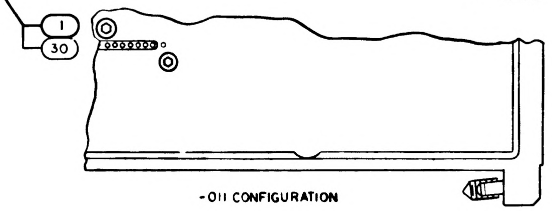


SECTION A-A
SCALE 4/1
-011 CONFIGURATION



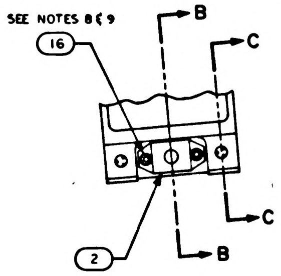


-021 CONFIGURATION



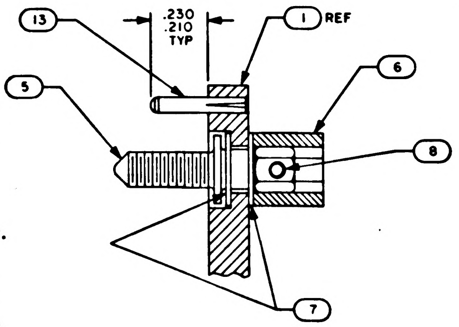
-011 CONFIGURATION

© REPLACES WORD DWG REV B

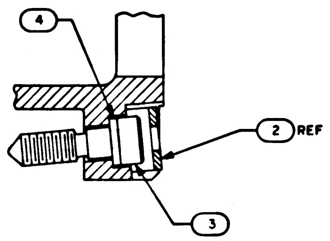


NOTES:

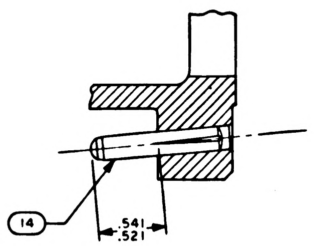
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
3. MARK PER ND 1002019, BLACK .100/.140 HIGH AND SERIALIZE PER ND 1002023
4. ASSEMBLE FIND NUMBERS 9, 10, 11 AND 12 PER ND 1002136
5. BOND FIND NOS. 22, 23, 24, 25, 26, 31, 32, 33 AND 34 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
8. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
9. MOUNTING TORQUE FOR FIND NUMBERS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
10. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
11. PROCURE PER PS 1007145
12. BOND FIND NOS. 27 AND 28 TO FIND NOS. 11 AND 20 PER ND 1002237
13. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH OR WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.



PARTIAL SECTION A-A
SCALE: 4/1
-021 CONFIGURATION



SECTION B-B
SCALE: 2/1



SECTION C-C
SCALE: 2/1

QUANTITY REQUIRED 021	QUANTITY REQUIRED 011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
–	1		1008625	WIRE LIST AA	34
–	1		1008624	WIRING HARNESS C	33
–	1		1008623	WIRING HARNESS B	32
–	1		1008622	WIRING HARNESS A	31
–	1		1008590	FRAME	30
1	–		1010622-1	CONNECTOR, RECEPTACLE	29
X	–		1009555	WIRING DIAGRAM	REF
1	1		1008553	GASKET CONNECTOR MIN TRAY	28
–	X		1009565	WIRING DIAGRAM	REF
1	1		1008552	GASKET CONNECTOR TRAY	27
1	–		1015753	WIRE LIST AA	26
1	–		1015752	WIRING HARNESS D	25
1	–		1015751	WIRING HARNESS C	24
1	–		1015750	WIRING HARNESS B	23
1	–		1015749	WIRING HARNESS A	22
45	45		1006782-2	CONTACT, WRAPOST MALE MIN	21
45	45		1006775	INSULATOR, MALE WRAPOST MIN	20
1	1		1007099	BUFFER RESISTORS ASSEMBLY	19
2	2		MA21045 C 04	NUT, SELF-LOCKING, HEX	18
2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
–	1		1010821-1	CONNECTOR, RECEPTACLE	15
2	2		1010620-5	PIN, GUIDE	14
18	16		MS16556-604	PIN, GUIDE	13
60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	12
60	60		1010383-1	INSULATOR, WRAPOST, MALE	11
188	158		1006781-2	CONTACT, WRAPOST, FEMALE, MIN	10
188	158		1006774	INSULATOR, WRAPOST, FEMALE, MIN	9
24	—		MS 171433	PIN, SPRING	8
48	—		1004206	WASHER, THRUST	7
24	—		1004207	DRIVE CYLINDER	6
24	—		1008172	SCREW, JACK	5
1	1		1008099-2	WASHER,	4
1	1		1008098	SCREW, SOCKET HEAD	3
1	1		1001317	RETAINER, JACK SCREW	2
1	–		1008525	FRAME	1

LIST OF MATERIALS

1007535 J

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007575		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN DATE 1 OCT 64
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL W J 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

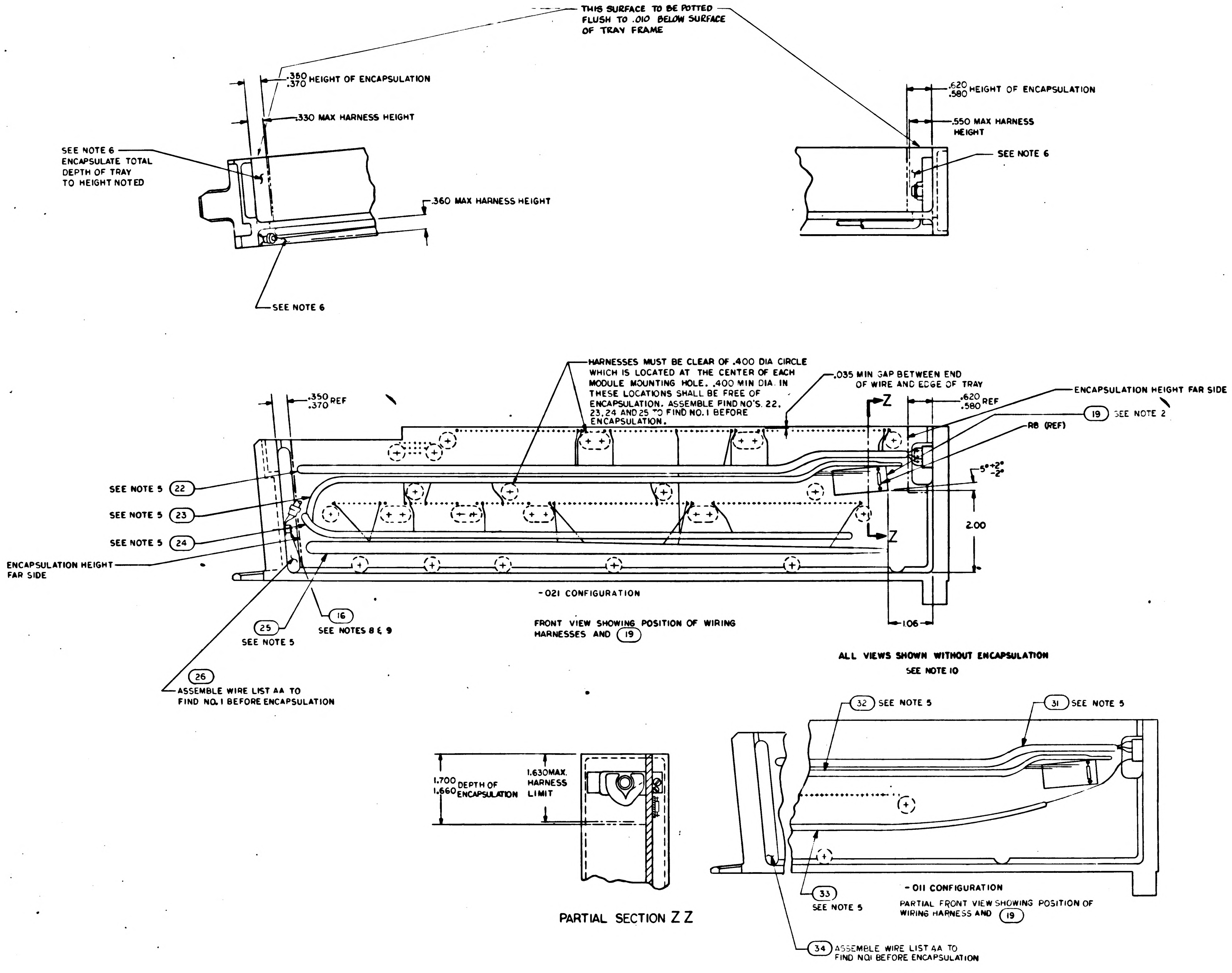
FRAME ASSEMBLY
TRAY 5

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO 1007535
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939	11/4/64	WR
D	REVISED PER TDRR 14703	12/1/64	WR
E	REVISED PER TDRR 15155	22 Dec 64	WR
F	REVISED PER TDRR 15948	11-FEB-65	CW
G	REVISED PER TDRR 17618	24 MAR 65	RJJ W.D.
H	REVISED PER TDRR 18690	4 MAY 65	CF W.D.
J	REVISED PER TDRR 18691	7 MAY 65	JJJ CF


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.350 .370 HEIGHT OF ENCAPSULATION
.330 MAX HARNESS HEIGHT
SEE NOTE 6 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HARNESS HEIGHT
SEE NOTE 6
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS HEIGHT
SEE NOTE 6
HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE. .400 MIN DIA. IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO'S. 22, 23, 24 AND 25 TO FIND NO. 1 BEFORE ENCAPSULATION.
.350 .370 REF
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
Z
.620 .580 REF
ENCAPSULATION HEIGHT FAR SIDE
19 SEE NOTE 2
R8 (REF)
5° +2° −2°
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
ENCAPSULATION HEIGHT FAR SIDE
2.00
Z
1.06
25 SEE NOTE 5
16 SEE NOTES 8 & 9
26 ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION
1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX. HARNESS LIMIT
32 SEE NOTE 5
31 SEE NOTE 5
33 SEE NOTE 5
34 ASSEMBLE WIRE LIST AA TO FIND NO 1 BEFORE ENCAPSULATION

-021 CONFIGURATION

FRONT VIEW SHOWING POSITION OF WIRING HARNESSES AND (19)

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 10

PARTIAL SECTION Z Z

-011 CONFIGURATION

PARTIAL FRONT VIEW SHOWING POSITION OF WIRING HARNESS AND (19)

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ±.02 ANGLES ± DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB CAMBRIDGE MASS Contract NAS 9-497	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
MATERIAL	DRAWN Beckler DATE 1 OCT 64 CHECKED 6 OCT 64 APPROVAL 8 OCT 64 APPROVAL 11-20-64	FRAME ASSEMBLY TRAY 5
HEAT TREATMENT	NASA APPROVAL 11-4-64	CODE IDENT NO 80230 · SIZE E · NASA DRAWING NO 1007535
FINAL FINISH	MIT APPROVAL 4 Nov 64	SCALE 1/1 · WT · SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
REVISIONS					
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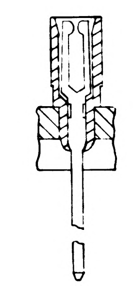
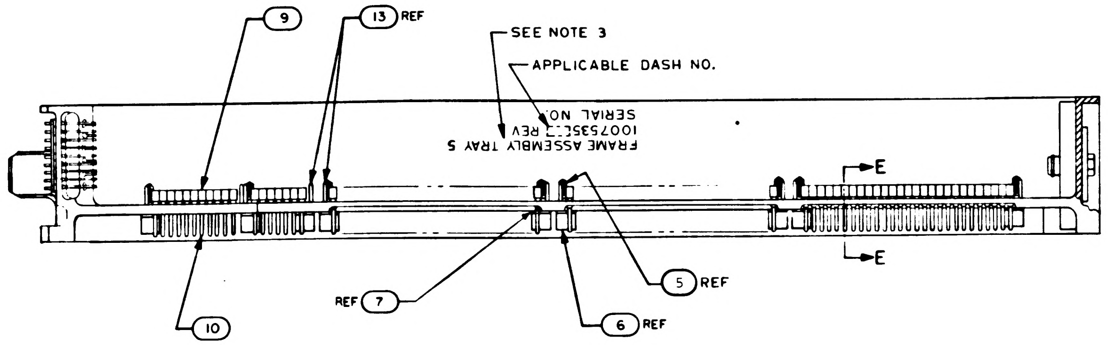
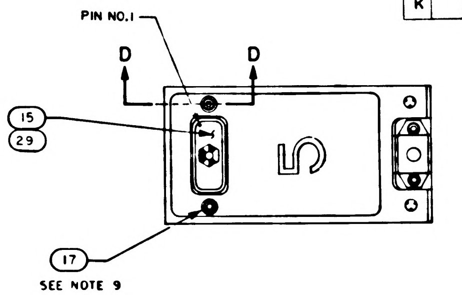
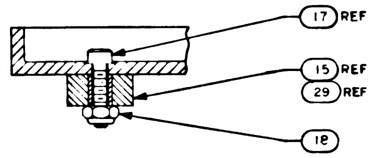
D		REVISED PER TDRR 4[illegible]			[illegible]
E		[illegible]			[illegible]
F		REVISED PER TDRR [illegible]345		-65	[illegible]
G		REVISED PER TDRR 17613		25 MAR 65	RW
H		REVISED PER TDRR 18690		4 MAY 65	EF
J		REVISED PER TDRR 18691		MAY 65	JJJ EF
K		REVISED PER TDRR 18695		MAY 65	[illegible]

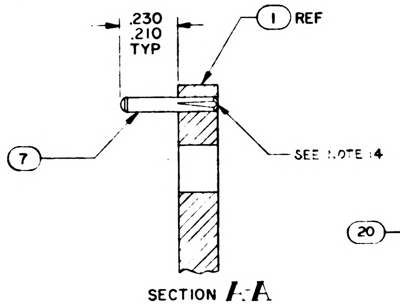

SECTION E-E



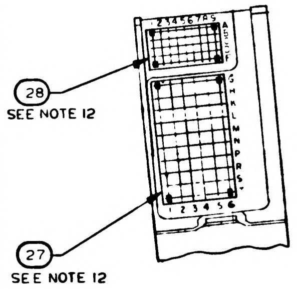


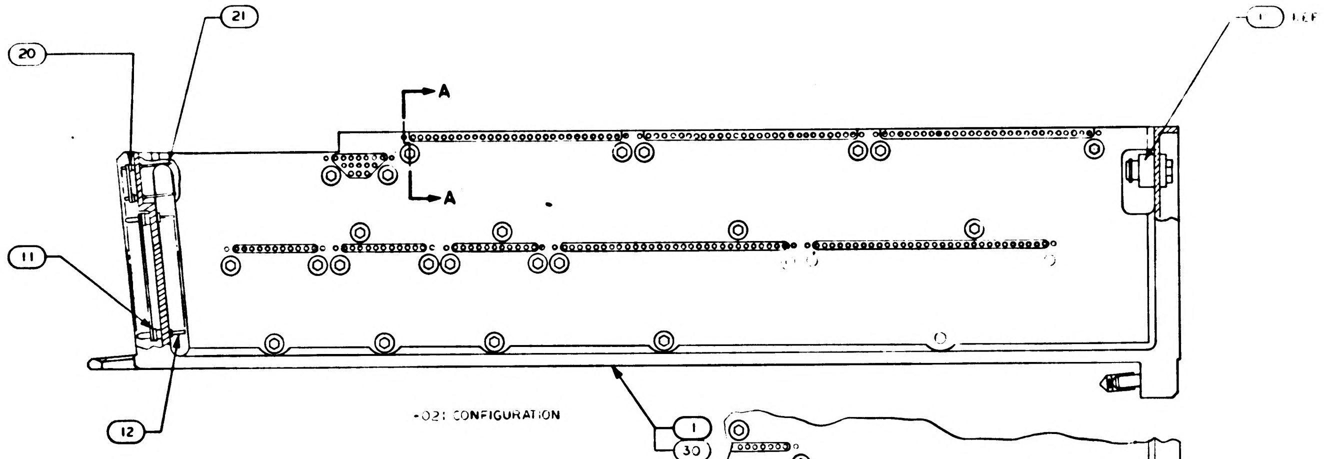


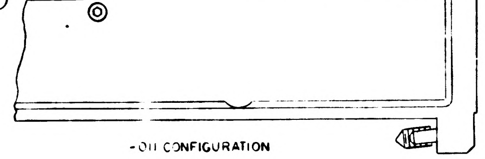
PARTIAL SECTION D-D
SCALE: 2/1



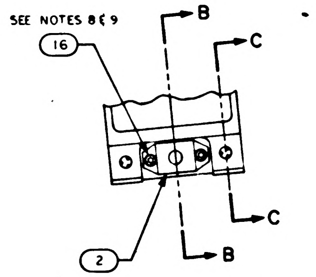
SECTION A-A
SCALE 4/1
-011 CONFIGURATION





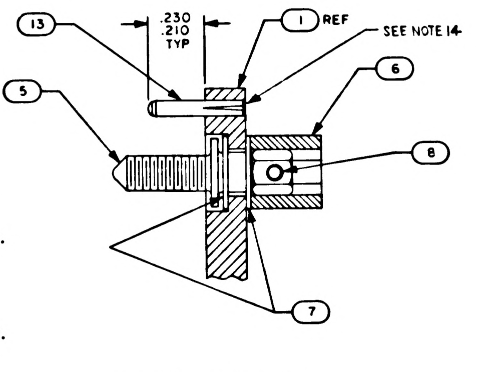

-011 CONFIGURATION

© REPLACES WORD DWG REV B

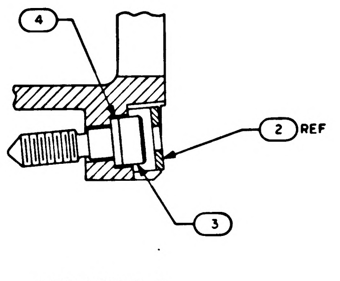


NOTES:

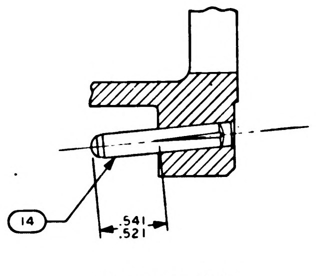
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
3. MARK PER ND 1002019, BLACK .100/.140 HIGH AND SERIALIZE PER ND 1002023
4. ASSEMBLE FIND NUMBERS 9, 10, 11 AND 12 PER ND 1002136
5. BOND FIND NOS. 22, 23, 24, 25, 26, 31, 32, 33 AND 34 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
8. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
9. MOUNTING TORQUE FOR FIND NUMBERS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
10. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
11. PROCURE PER PS 1007145
12. BOND FIND NOS. 27 AND 28 TO FIND NOS. 11 AND 20 PER ND 1002237
13. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH OR WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.
14. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.



PARTIAL SECTION A-A
SCALE: 4/1
-021 CONFIGURATION



SECTION B-B
SCALE: 2/1



SECTION C-C
SCALE: 2/1

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		–	1		1008625	WIRE LIST AA	34
		–	1		1008624	WIRING HARNESS C	33
		–	1		1008623	WIRING HARNESS B	32
		–	1		1008622	WIRING HARNESS A	31
		–	1		1008590	FRAME	30
		1	–		1010622-1	CONNECTOR, RECEPTACLE	29
		☒	–		1009555	WIRING DIAGRAM	REF
		1	1		1008553	GASKET CONNECTOR MIN TRAY	28
		–	☒		1009565	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	27
		1	–		1015753	WIRE LIST AA	26
		1	–		1015752	WIRING HARNESS D	25
		1	–		1015751	WIRING HARNESS C	24
		1	–		1015750	WIRING HARNESS B	23
		1	–		1015749	WIRING HARNESS A	22
		45	45		1006782-2	CONTACT, WRAPOST MALE MIN	21
		45	45		1006775	INSULATOR, MALE WRAPOST MIN	20
		1	1		1007099	BUFFER RESISTORS ASSEMBLY	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING, HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		–	1		1010821-1	CONNECTOR, RECEPTACLE	15
		2	2		1010620-5	PIN, GUIDE	14
		18	[illegible]		MS [illegible]-604	PIN, GUIDE	13
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	12
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	11
		188	[illegible]		1006781-2	CONTACT, WRAPOST, FEMALE, MIN	10
		188	158		1006774	INSULATOR, WRAPOST, FEMALE, MIN	9
		24	–		MS 171433	PIN, SPRING	8
		48	–		1004206	WASHER, THRUST	7
		24	–		1004207	DRIVE CYLINDER	6
		24	–		1008172	SCREW, JACK	5
		1	1		1008099-2	WASHER,	4
		1	1		1008098	SCREW, SOCKET HEAD	3
		1	1		1001317	RETAINER, JACK SCREW	2
		1	–		1008525	FRAME	1

QUANTITY REQUIRED
LIST OF MATERIALS

1007535 K

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007575		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

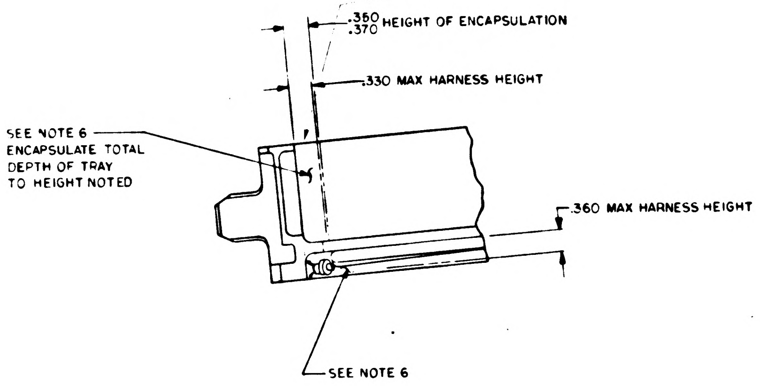
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
Contract NAS 9-497
DRAWN [illegible] DATE 1 OCT 64
CHECKED [illegible] 6 OCT 64
APPROVAL [illegible] 8 OCT 64
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible] 4 NOV

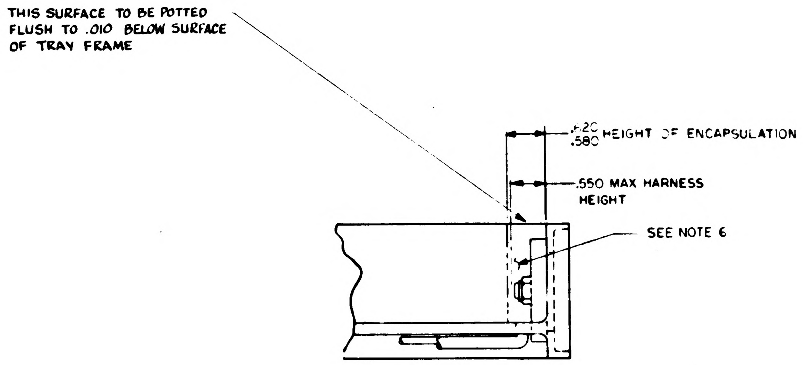
MANNED SPACECRAFT CENTER
HOUSTON TEXAS

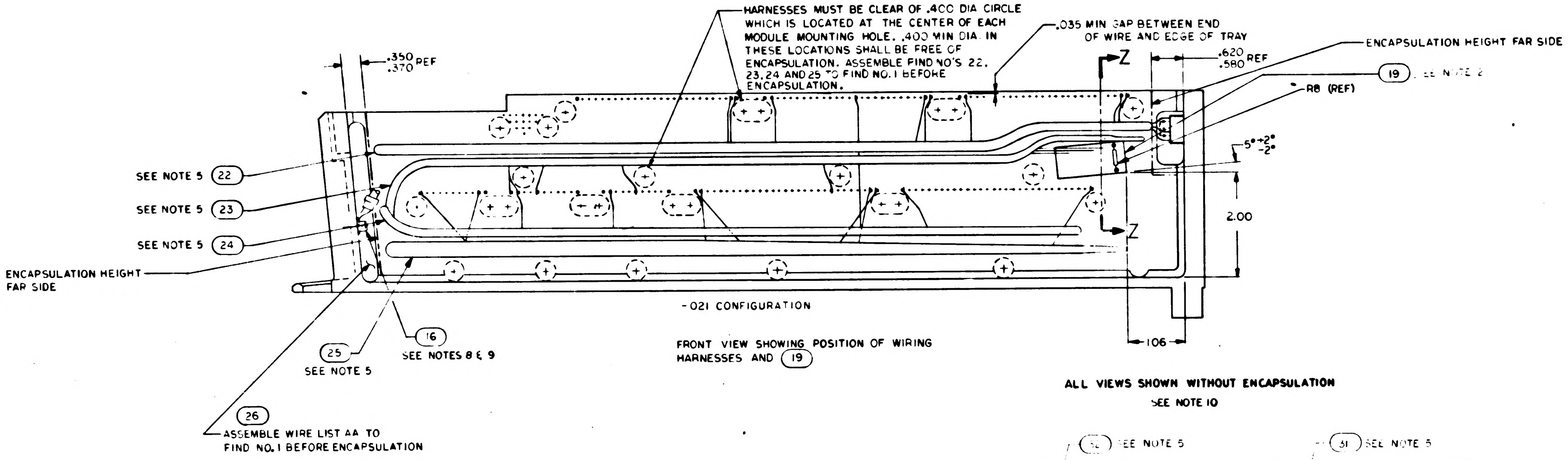
FRAME ASSEMBLY
TRAY 5

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007535
SCALE 1/1
WT
SHEET 1 OF 2

SYM	REVISIONS DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR		
D	REVISED PER TDRR		
E	REVISED PER TDRR	29 Dec 64	FWP
F	REVISED PER TDRP 15948	11 FEB 65	
G	REVISED PER TDRR 17613	24 MAR 65	RJJ
H	EVISED PER TDRR 18690	4 MAY 65	CF
J	REVISED PER TDRR 18291	7 MAY 65	CF
K	REVISED PER TDRR 18695	11 MAY 65	AN

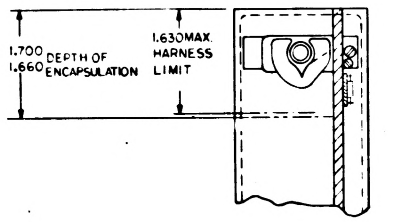

.350
.370 HEIGHT OF ENCAPSULATION
.330 MAX HARNESS HEIGHT
SEE NOTE 6
ENCAPSULATE TOTAL
DEPTH OF TRAY
TO HEIGHT NOTED
.360 MAX HARNESS HEIGHT
SEE NOTE 6


THIS SURFACE TO BE POTTED
FLUSH TO .010 BELOW SURFACE
OF TRAY FRAME
.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS
HEIGHT
SEE NOTE 6

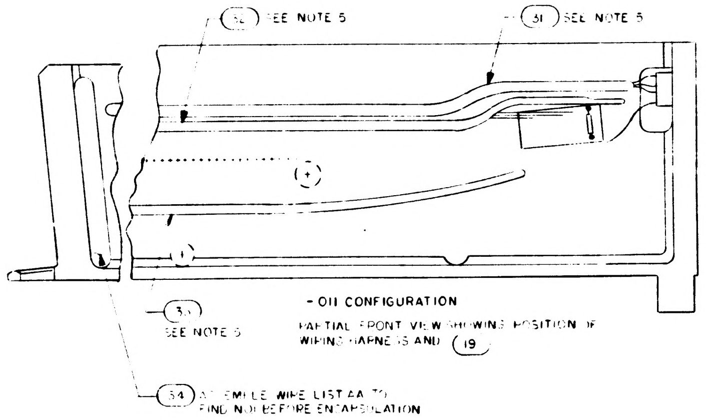

HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE
WHICH IS LOCATED AT THE CENTER OF EACH
MODULE MOUNTING HOLE. .400 MIN DIA. IN
THESE LOCATIONS SHALL BE FREE OF
ENCAPSULATION. ASSEMBLE FIND NO'S 22.
23, 24 AND 25 TO FIND NO. 1 BEFORE
ENCAPSULATION.
.035 MIN GAP BETWEEN END
OF WIRE AND EDGE OF TRAY
.350
.370 REF
.620
.580 REF
ENCAPSULATION HEIGHT FAR SIDE
19 SEE NOTE 2
R8 (REF)
Z
Z
5° +2° -2°
2.00
.106
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
ENCAPSULATION HEIGHT
FAR SIDE
25
SEE NOTE 5
16
SEE NOTES 8 & 9
26
ASSEMBLE WIRE LIST AA TO
FIND NO. 1 BEFORE ENCAPSULATION
-021 CONFIGURATION

FRONT VIEW SHOWING POSITION OF WIRING
HARNESSES AND (19)

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 10


1.700
1.660 DEPTH OF
ENCAPSULATION
1.630 MAX.
HARNESS
LIMIT

PARTIAL SECTION Z Z


32 SEE NOTE 5
31 SEE NOTE 5
33
SEE NOTE 5
34 ASSEMBLE WIRE LIST AA TO
FIND NO. 1 BEFORE ENCAPSULATION
-011 CONFIGURATION

PARTIAL FRONT VIEW SHOWING POSITION OF
WIRING HARNESS AND (19)

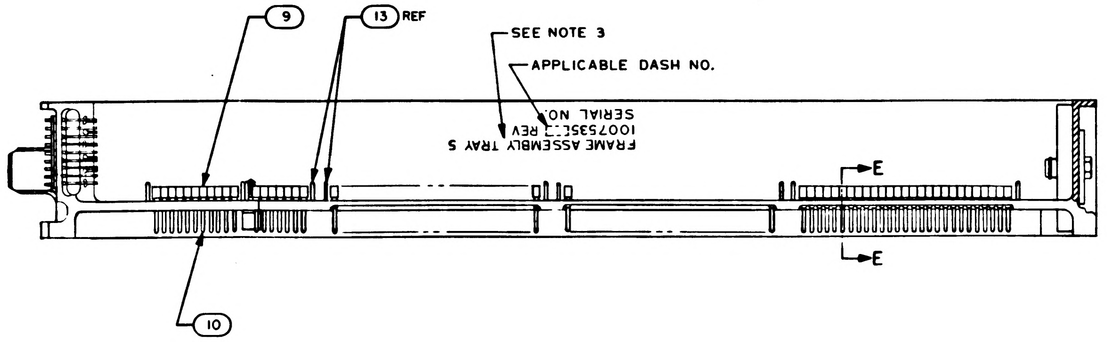
QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

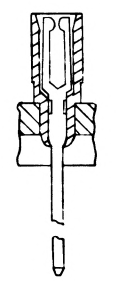
LIST OF MATERIALS

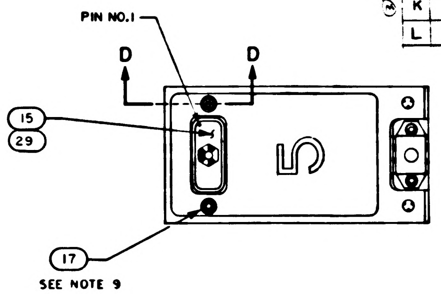
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ±.02 ANGLES ± DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB Cambridge Mass Contract NAS 9-497	MANNED SPACECRAFT CENTER HOUSTON TEXAS
MATERIAL	DRAWN DATE 1 OCT 64 CHECKED 6 OCT 64 APPROVAL APPROVAL	FRAME ASSEMBLY TRAY 5
HEAT TREATMENT	NASA APPROVAL	CODE IDENT NO 80230 SIZE E NASA DRAWING NO 1007535
FINAL FINISH	MIT APPROVAL	SCALE 1/1 WT SHEET 2 OF 2

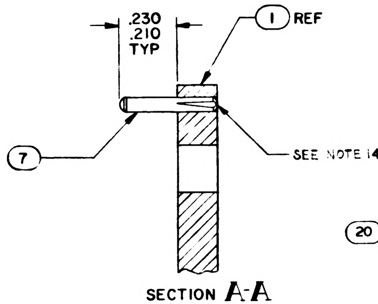
1007535 K

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
REVISIONS					
C		REPLACES WORD DWG REV B PER TDRR			
D		REVISED PER TDRR			
E		REVISED PER TDRR 5 55			
F		REVISED PER TDRR 15348			
G		REVISED PER TDRR 17613		25 MAR 65	RJJ
H		REVISED PER TDRR 18690			
J		REVISED PER TDRR 18691			
K		REVISED PER TDRR 18695			
L		REVISED PER TDRR 20 19			

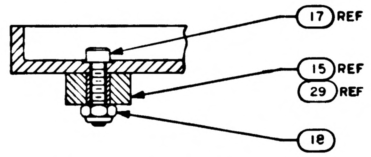



SECTION E-E

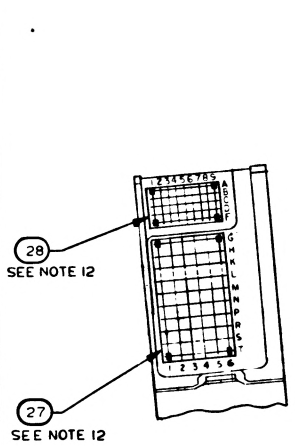


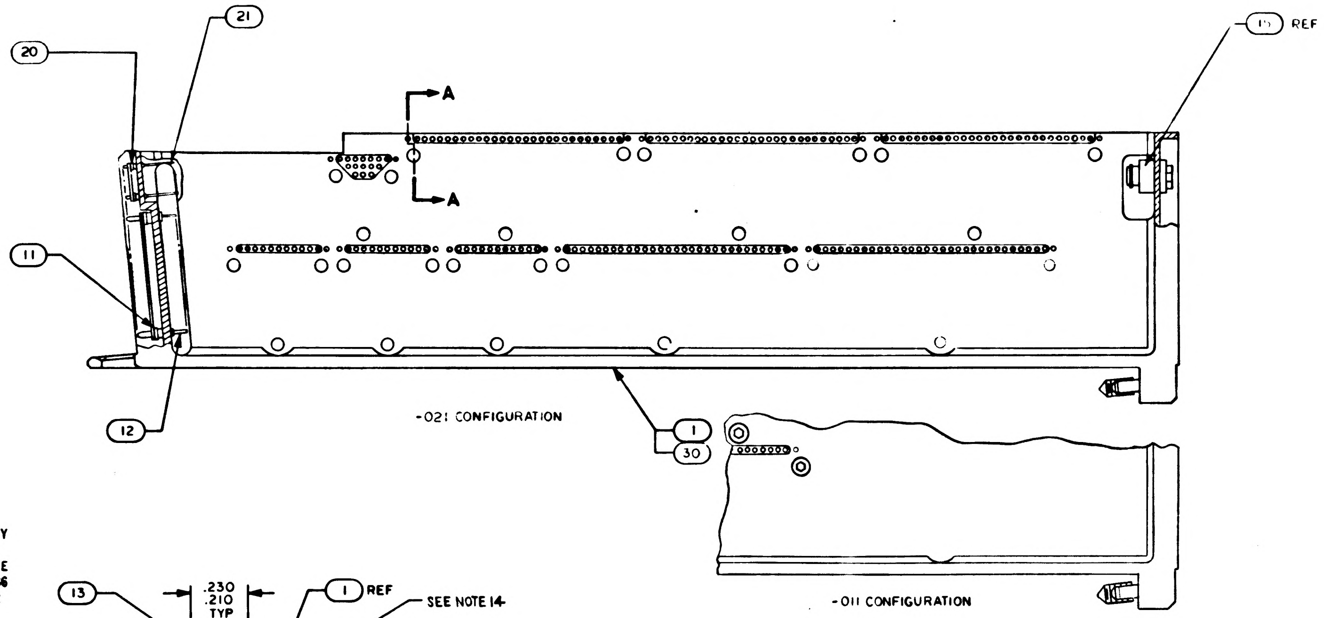


SECTION A-A
SCALE 4/1
-011 CONFIGURATION

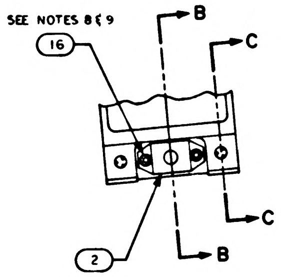


PARTIAL SECTION D-D
SCALE:2/1





© REPLACES WORD DWG REV B



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
3. MARK PER ND 1002019, BLACK .100/.140 HIGH AND SERIALIZE PER ND 1002023
4. ASSEMBLE FIND NUMBERS 9, 10, 11 AND 12 PER ND 1002136
5. BOND FIND NOS. 22, 23, 24, 25, 26, 31, 32, 33 AND 34 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
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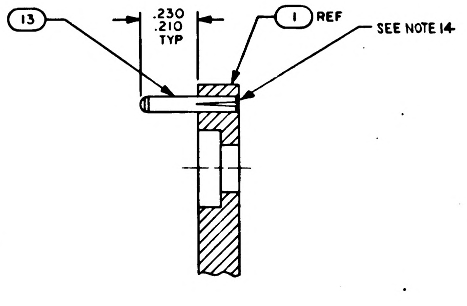
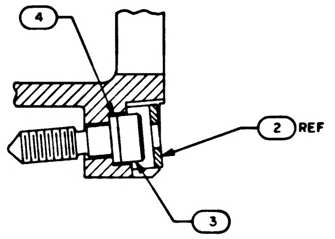
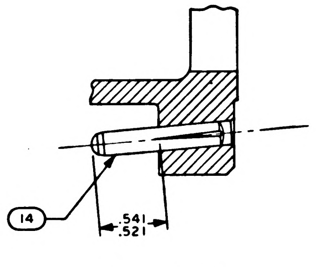
9. MOUNTING TORQUE FOR FIND NUMBERS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
10. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
11. PROCURE PER PS 1007145
12. BOND FIND NOS. 27 AND 28 TO FIND NOS. 11 AND 20 PER ND 1002237
13. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH OR WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.
14. FILL [illegible] ODULE GU [illegible] HOLES AND ANY ASSOCIATED CRAC- PLA [illegible] 6 (AFTE [illegible] PIN INSERTION) USING TYPE [illegible] VE PER [illegible] D1002004, [illegible] SIDE ONLY.



PARTIAL SECTION A-A
SCALE:4/1
-021 CONFIGURATION



SECTION B-B
SCALE:2/1



SECTION C-C
SCALE:2/1

		QUANTITY REQUIRED			LIST OF MATERIALS		
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		–	1		1008625	WIRE LIST AA	34
		–	1		1008624	WIRING HARNESS C	33
		–	1		1008623	WIRING HARNESS B	32
		–	1		1008622	WIRING HARNESS A	31
		–	1		1008590	FRAME	30
		1	–		1010622-1	CONNECTOR, RECEPTACLE	29
		☒	–		1009555	WIRING DIAGRAM	REF
		1	1		1008553	GASKET CONNECTOR MIN TRAY	28
		–	☒		1009565	WIRING DIAGRAM	REF
		1	1		1008552	GASKET CONNECTOR TRAY	27
		1	–		1015753	WIRE LIST AA	26
		1	–		1015752	WIRING HARNESS D	25
		1	–		1015751	WIRING HARNESS C	24
		1	–		1015750	WIRING HARNESS B	23
		1	–		1015749	WIRING HARNESS A	22
		45	45		1006782-2	CONTACT, WRAPOST MALE MIN	21
		45	45		1006775	INSULATOR, MALE WRAPOST MIN	20
		1	1		1007099	BUFFER RESISTORS ASSEMBLY	19
		2	2		MA21045 C 04	NUT, SELF-LOCKING, HEX	18
		2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
		3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
		–	1		1010821-1	CONNECTOR, RECEPTACLE	15
		2	2		1010620-5	PIN, GUIDE	14
		18	1[illegible]		MS[illegible]556-604	PIN, GUIDE	13
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	12
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	11
		188	158		1006781-2	CONTACT, WRAPOST, FEMALE, MIN	10
		188	158		1006774	INSULATOR, WRAPOST, FEMALE, MIN	9
		~~24~~	–		~~MS 171433~~	~~PIN, SPRING~~	8
		~~48~~	–		~~1004206~~	~~WASHER, THRUST~~	7
		~~24~~	–		~~1004207~~	~~DRIVE CYLINDER~~	6
		~~24~~	–		~~1008172~~	~~SCREW, JACK~~	5
		1	1		1008099-2	WASHER,	4
		1	1		1008098	SCREW, SOCKET HEAD	3
		1	1		1001317	RETAINER, JACK SCREW	2
		1	–		1008525	FRAME	1

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007575		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
Contract NAS 9-497
DRAWN DATE 1 OCT 64
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
MB APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL 4 NOV

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 5

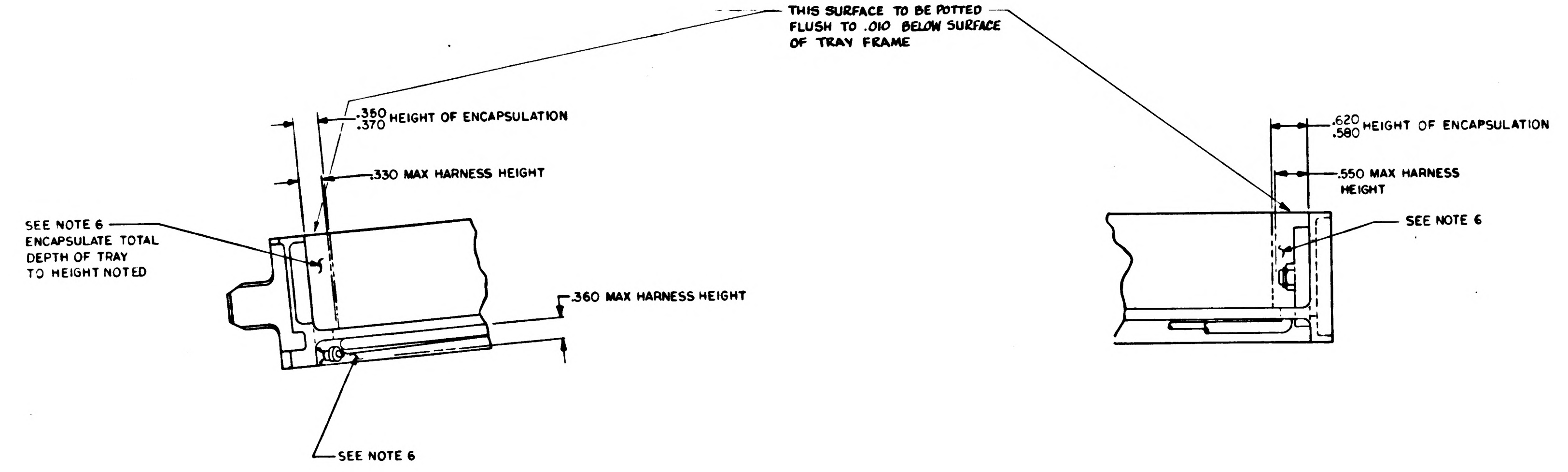
CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007535
SCALE 1/1
WT
SHEET 1 OF 2

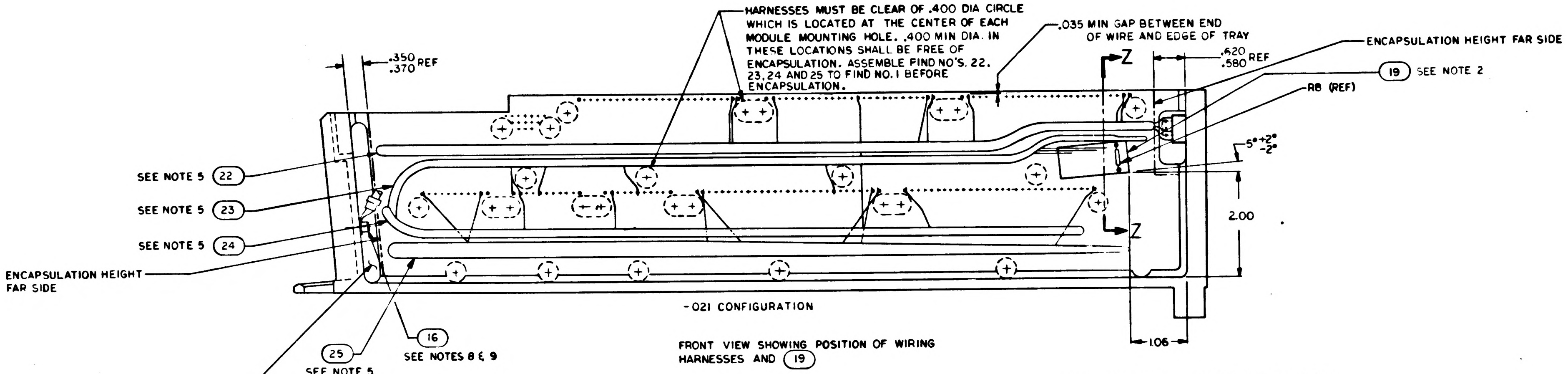
1007535 L

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR [illegible]		
D	REVISED PER TDRR 14703		
E	REVISED PER TDRR 15155	29 Dec '64	FWP
F	REVISED PER TDRR 15948	1-FEB-65	
G	REVISED PER TDRR 17613	24 MAR 65	RJJ
H	REVISED PER TDRR 18690	4 MAY 65	CF
J	REVISED PER TDRR 18829	7 MAY 65	
K	REVISED PER TDRR 18695	MAY 65	
L	REVISION STATUS CHANGED	2 JUN 65	


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.380 .370 HEIGHT OF ENCAPSULATION
.330 MAX HARNESS HEIGHT
SEE NOTE 6 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HARNESS HEIGHT
SEE NOTE 6
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS HEIGHT
SEE NOTE 6

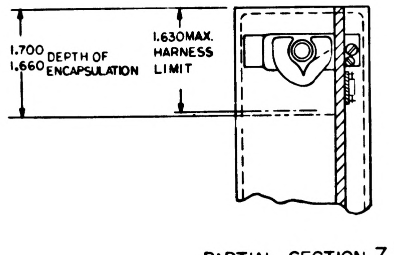

HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE. .400 MIN DIA. IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO'S. 22, 23, 24 AND 25 TO FIND NO. 1 BEFORE ENCAPSULATION.
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
ENCAPSULATION HEIGHT FAR SIDE
.350 .370 REF
Z
.620 .580 REF
19 SEE NOTE 2
R8 (REF)
5° +2° -2°
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
2.00
Z
ENCAPSULATION HEIGHT FAR SIDE
.106
25 SEE NOTE 5
16 SEE NOTES 8 & 9

-021 CONFIGURATION

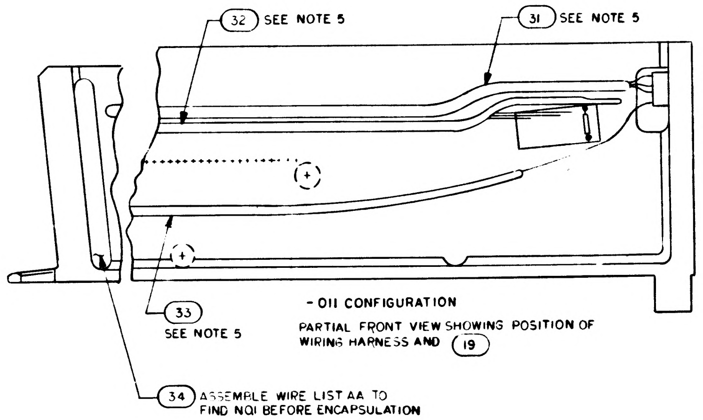
FRONT VIEW SHOWING POSITION OF WIRING HARNESSES AND ⑲

26 ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 10


1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX. HARNESS LIMIT

PARTIAL SECTION Z Z


32 SEE NOTE 5
31 SEE NOTE 5
33 SEE NOTE 5

-011 CONFIGURATION

PARTIAL FRONT VIEW SHOWING POSITION OF WIRING HARNESS AND ⑲

34 ASSEMBLE WIRE LIST AA TO FIND NO1 BEFORE ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN DATE 1 OCT 64
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL
MIT APPROVAL

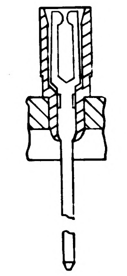
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

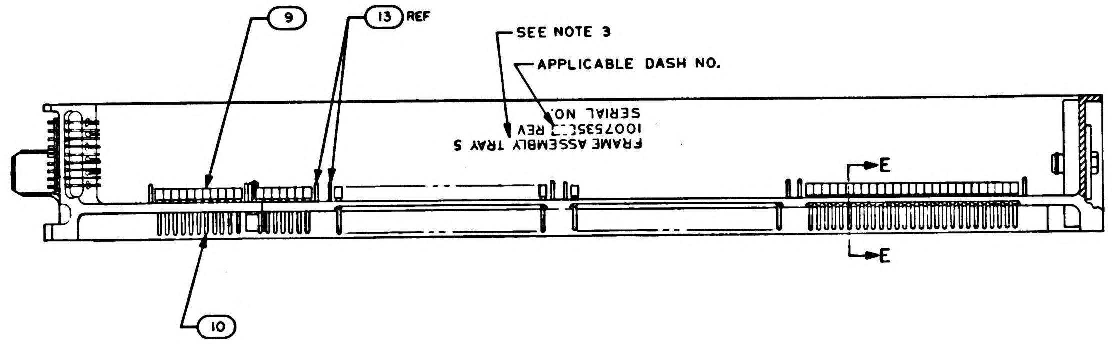
FRAME ASSEMBLY
TRAY 5

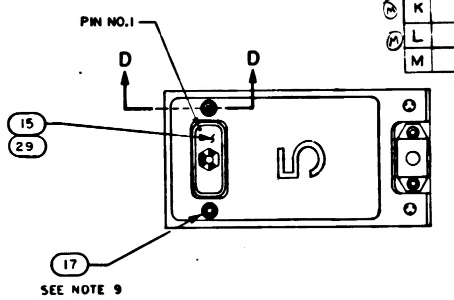
CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007535
SCALE 1/1
WT
SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

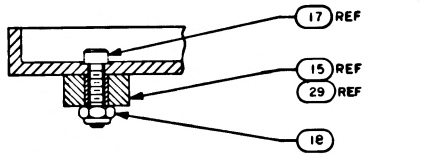
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		REPLACES WORD DWG REV B PER TDRR [illegible]			
D		REVISED PER TDRR 4713			
E		REVISED PER TDRR 5155			
F		REVISED PER TDRR 15948		5 FEB 65	
G		REVISED PER TDRR 17613		25 MAR 65	RW
H		REVISED PER TDRR 18690		MAY 65	EF
J		REVISED PER TDRR 18691		MAY 65	JJJ
K		REVISED PER TDRR 18695		MAY 65	
L		REVISED PER TDRR 20119		JUN 65	NG
M		REVISED PER TDRR 20785		JUL 65	EF


SECTION E-E

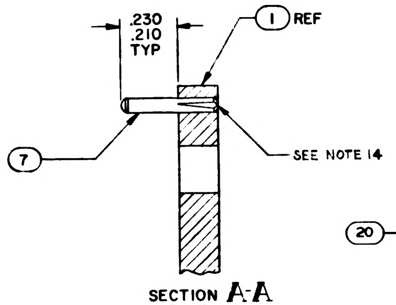




SEE NOTE 9

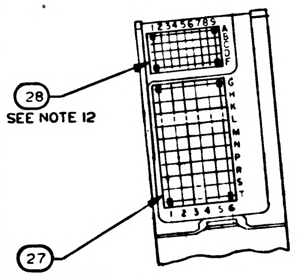


PARTIAL SECTION D-D
SCALE: 2/1

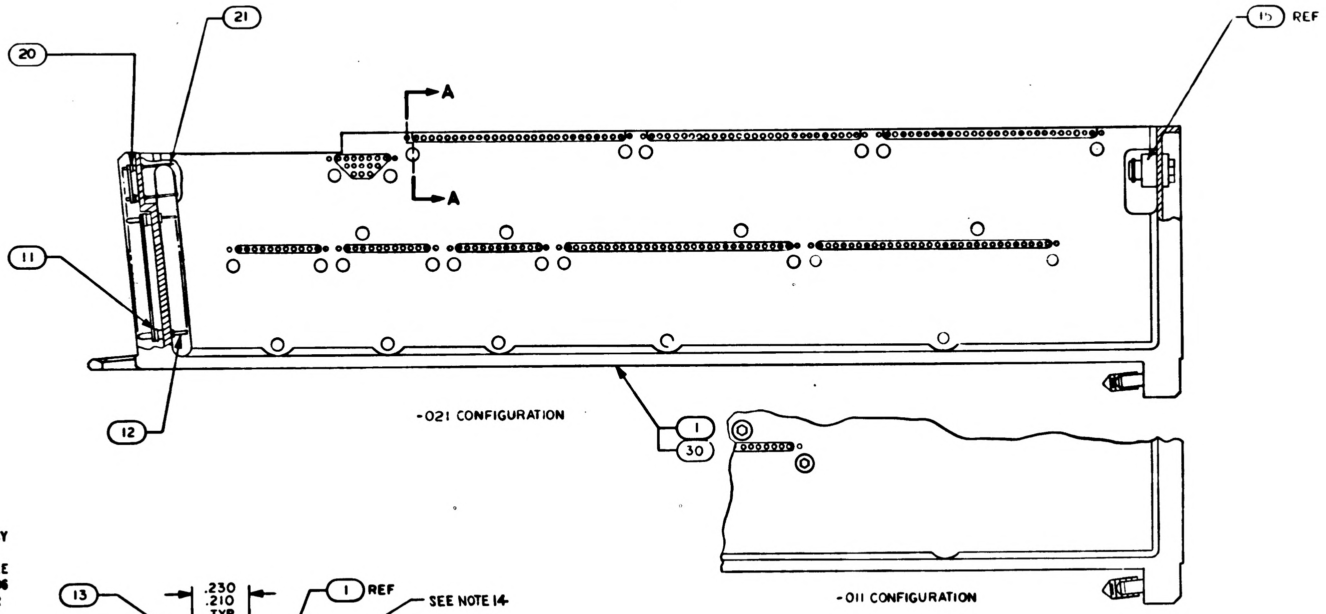


SECTION A-A
SCALE 4/1
-011 CONFIGURATION

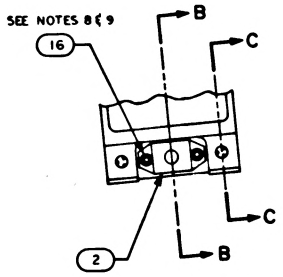
© REPLACES WORD DWG REV B



SEE NOTE 12
SEE NOTE 12

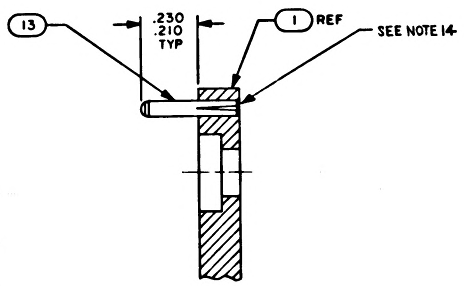


-021 CONFIGURATION
-011 CONFIGURATION

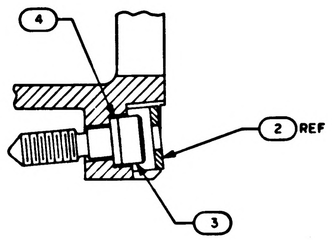


NOTES:

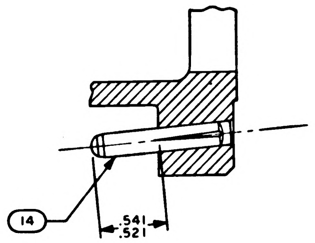
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
3. MARK PER ND 1002019, BLACK .100/.140 HIGH AND SERIALIZE PER ND 1002023
4. ASSEMBLE FIND NUMBERS 9, 10, 11 AND 12 PER ND 1002136
5. BOND FIND NOS. 22, 23, 24, 25, 26, 31, 32, 33 AND 34 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
8. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
9. MOUNTING TORQUE FOR FIND NUMBERS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
10. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
11. PROCURE PER PS 1007145
12. BOND FIND NOS. 27 AND 28 TO FIND NOS. 11 AND 20 PER ND 1002237
13. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A FORMULATION CONSISTING OF 40 PARTS BY WT. 1010959-1, 100 PARTS BY WT. 1010959-2, AND 7 PARTS BY WT. 1006277 AND CURE AT ROOM TEMPERATURE FOR THREE HOURS OR ONE HOUR AT 140°F. LIMITED AMOUNT ALLOWED TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004, TYPE I.
14. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND 1002004, POTTING [illegible].



PARTIAL SECTION A-A
SCALE: 4/1
-021 CONFIGURATION



SECTION B-B
SCALE: 2/1



SECTION C-C
SCALE: 2/1

QUANTITY REQUIRED 021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
–	1		1008625	WIRE LIST AA	34
–	1		1008624	WIRING HARNESS C	33
–	1		1008623	WIRING HARNESS B	32
–	1		1008622	WIRING HARNESS A	31
–	1		1008590	FRAME	30
1	–		1010622-1	CONNECTOR, RECEPTACLE	29
╳	–		1009555	WIRING DIAGRAM	REF
1	1		1008553	GASKET CONNECTOR MIN TRAY	28
–	╳		1009565	WIRING DIAGRAM	REF
1	1		1008552	GASKET CONNECTOR TRAY	27
1	–		1015753	WIRE LIST AA	26
1	–		1015752	WIRING HARNESS D	25
1	–		1015751	WIRING HARNESS C	24
1	–		1015750	WIRING HARNESS B	23
1	–		1015749	WIRING HARNESS A	22
45	45		1006782-2	CONTACT, WRAPOST MALE MIN	21
45	45		1006775	INSULATOR, MALE WRAPOST MIN	20
1	1		1007099	BUFFER RESISTORS ASSEMBLY	19
2	2		MA21045 C 04	NUT, SELF-LOCKING, HEX	18
2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
–	1		1010821-1	CONNECTOR, RECEPTACLE	15
2	2		1010620-5	PIN, GUIDE	14
18	16		MS16556-604	PIN, GUIDE	13
60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	12
60	60		1010383-1	INSULATOR, WRAPOST, MALE	11
188	158		1006781-2	CONTACT, WRAPOST, FEMALE, MIN	10
188	158		1006774	INSULATOR, WRAPOST, FEMALE, MIN	9
~~24~~	—		~~MS 171433~~	~~PIN, SPRING~~	8
~~48~~	—		~~1004206~~	~~WASHER, THRUST~~	7
~~24~~	—		~~1004207~~	~~DRIVE CYLINDER~~	6
~~24~~	—		~~1008172~~	~~SCREW, JACK~~	5
1	1		1008099-2	WASHER,	4
1	1		1008098	SCREW, SOCKET HEAD	3
1	1		1001317	RETAINER, JACK SCREW	2
1	–		1008525	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007575		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO Contract NAS 9-497
DRAWN [illegible] DATE 1 OCT 64
CHECKED [illegible] 6 OCT 64
APPROVAL [illegible] 8 OCT 64
MB APPROVAL [illegible]
NASA APPROVAL W. J. [illegible] 11-9-64
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

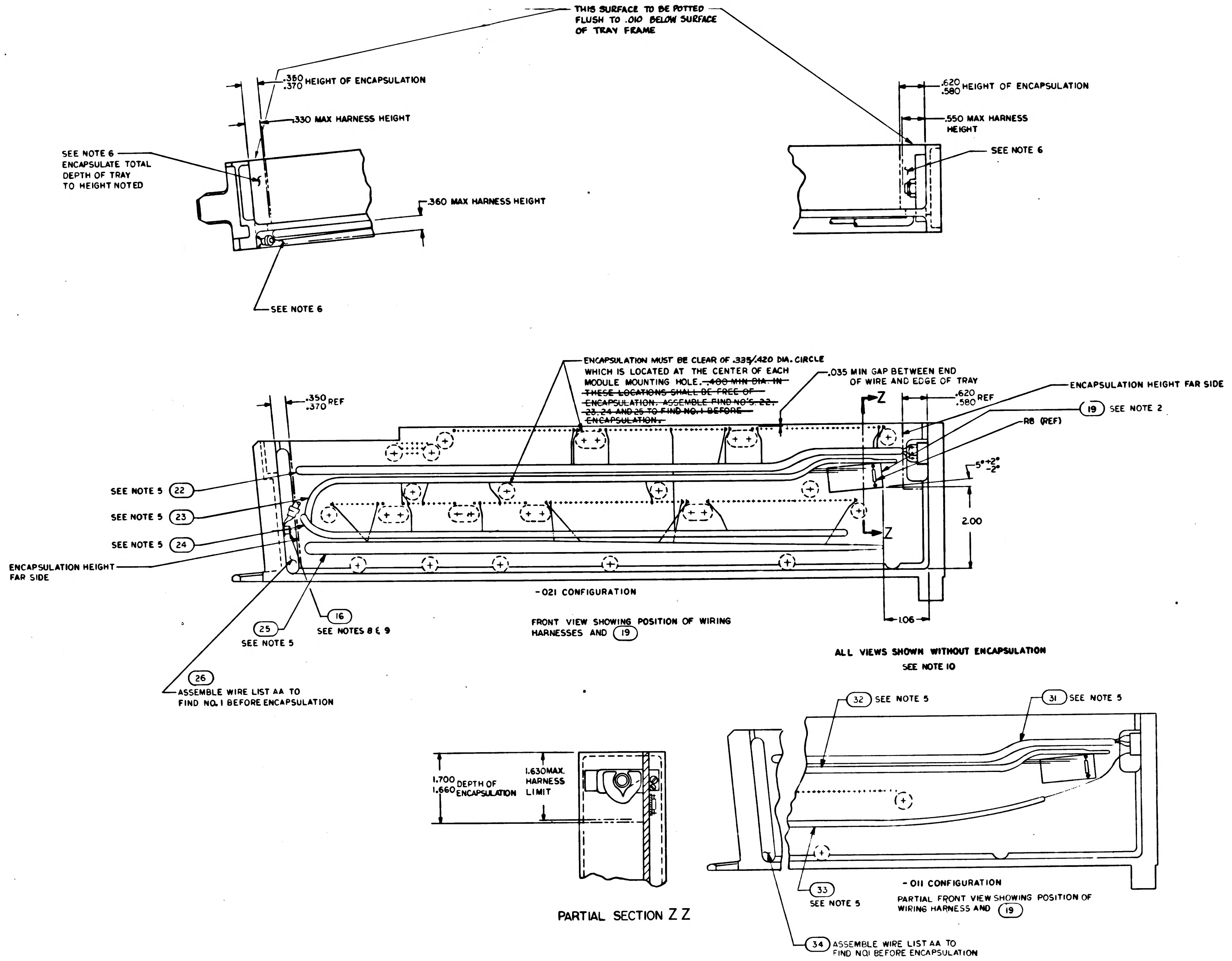
FRAME ASSEMBLY
TRAY 5

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO 1007535
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939	[illegible]	[illegible]
D	REVISED PER TDRR 14723	[illegible]	[illegible]
E	REVISED PER TDRR 15155	29 Dec '64	FWP [illegible]
F	REVISED PER TDRR 15949	11-FEB -65	[illegible]
G	REVISED PER TDRR 17613	MAR 65	RJJ
H	REVISED PER TDRR 18690	4 MAY 65	[illegible]
J	REVISED PER TDRR 18691	7 MAY 65	[illegible]
K	REVISED PER TDRR 18695	MAY 65	[illegible]
L	REVISION STATUS CHANGED	JUN 65	[illegible]
M	REVISED PER TDRR 20785	22 65	E.P. RW


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.350 .370 HEIGHT OF ENCAPSULATION
.330 MAX HARNESS HEIGHT
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HARNESS HEIGHT
SEE NOTE 6
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS HEIGHT
SEE NOTE 6
ENCAPSULATION MUST BE CLEAR OF .335/.420 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE. ~~.400 MIN DIA. IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO'S. 22, 23, 24 AND 25 TO FIND NO. 1 BEFORE ENCAPSULATION.~~
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
ENCAPSULATION HEIGHT FAR SIDE
.350 .370 REF
Z
.620 .580 REF
19 SEE NOTE 2
R8 (REF)
5° +2° -2°
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
ENCAPSULATION HEIGHT FAR SIDE
2.00
Z
1.06
25 SEE NOTE 5
16 SEE NOTES 8 & 9
26 ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION
1.700 1.660 DEPTH OF ENCAPSULATION
1.630MAX. HARNESS LIMIT
32 SEE NOTE 5
31 SEE NOTE 5
33 SEE NOTE 5
34 ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION

-021 CONFIGURATION

FRONT VIEW SHOWING POSITION OF WIRING HARNESSES AND ⑲

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 10

PARTIAL SECTION Z Z

-011 CONFIGURATION

PARTIAL FRONT VIEW SHOWING POSITION OF WIRING HARNESS AND ⑲

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN Gaschler DATE 1 OCT 64
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

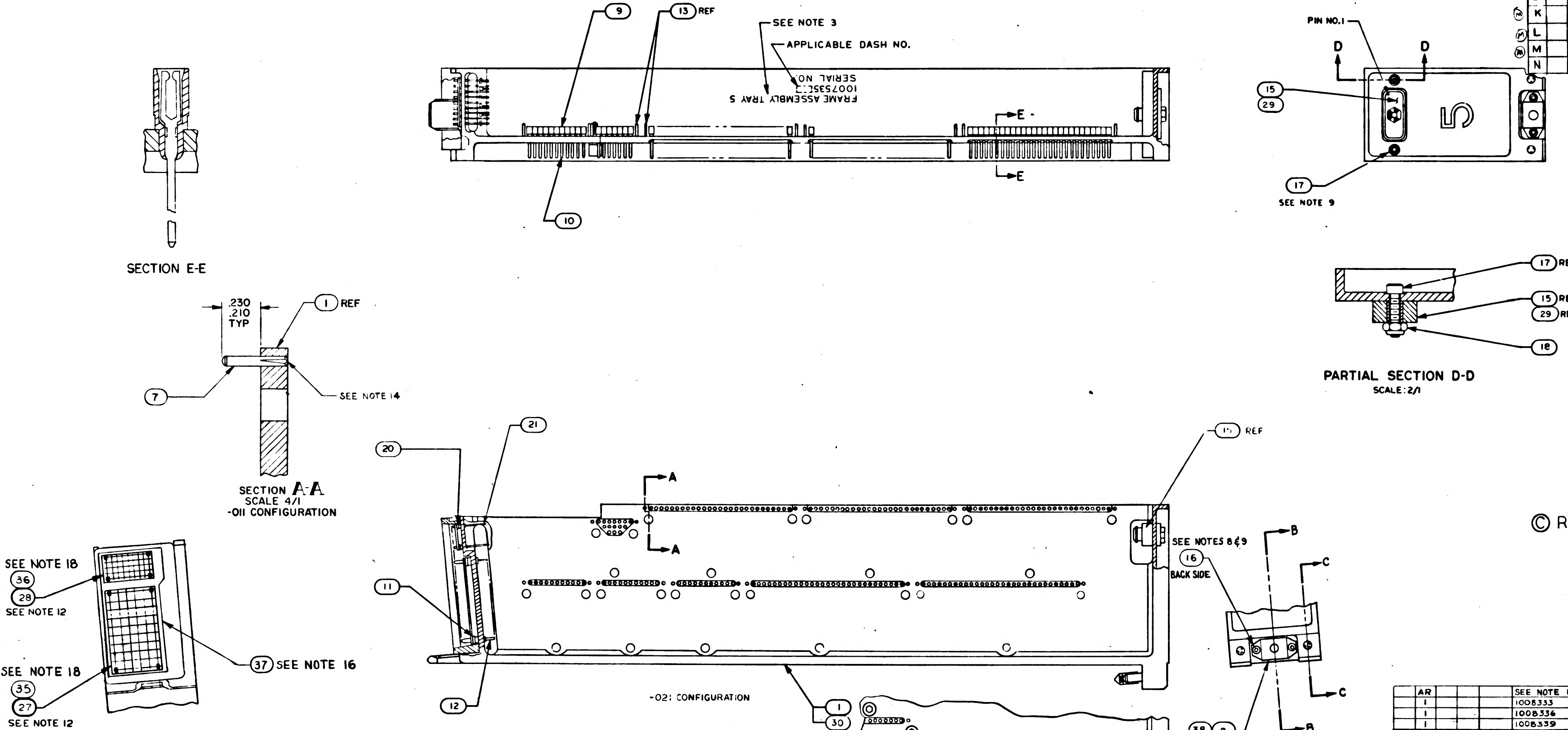
FRAME ASSEMBLY
TRAY 5

CODE IDENT NO	SIZE	NASA DRAWING NO
80230	E	1007535

SCALE 1/1 WT SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		REPLACES WORD DWG REV B PER TDRR [illegible]		[illegible]	[illegible]
D		REVISED PER TDRR [illegible]		[illegible]	[illegible]
E		REVISED PER TDRR [illegible]5155		[illegible]	[illegible]
F		REVISED PER TDRR 16348		11-FEB-65	[illegible]
G		REVISED PER TDRR 17613		25 MAR 65	RW W.T.
H		REVISED PER TDRR 18690		4 MAY 65	EF W.N.
J		REVISED PER TDRR 18691		7 MAY 65	JJJ EF
K		REVISED PER TDRR 18695		11 MAY 65	A.N.
L		REVISED PER TDRR 20119		21-JUN 65	MG MGM
M		REVISED PER TDRR 20785		22 JUL 65	RLP RWH
N		REVISED PER TDRR 26396		24 FEB 66	JNP



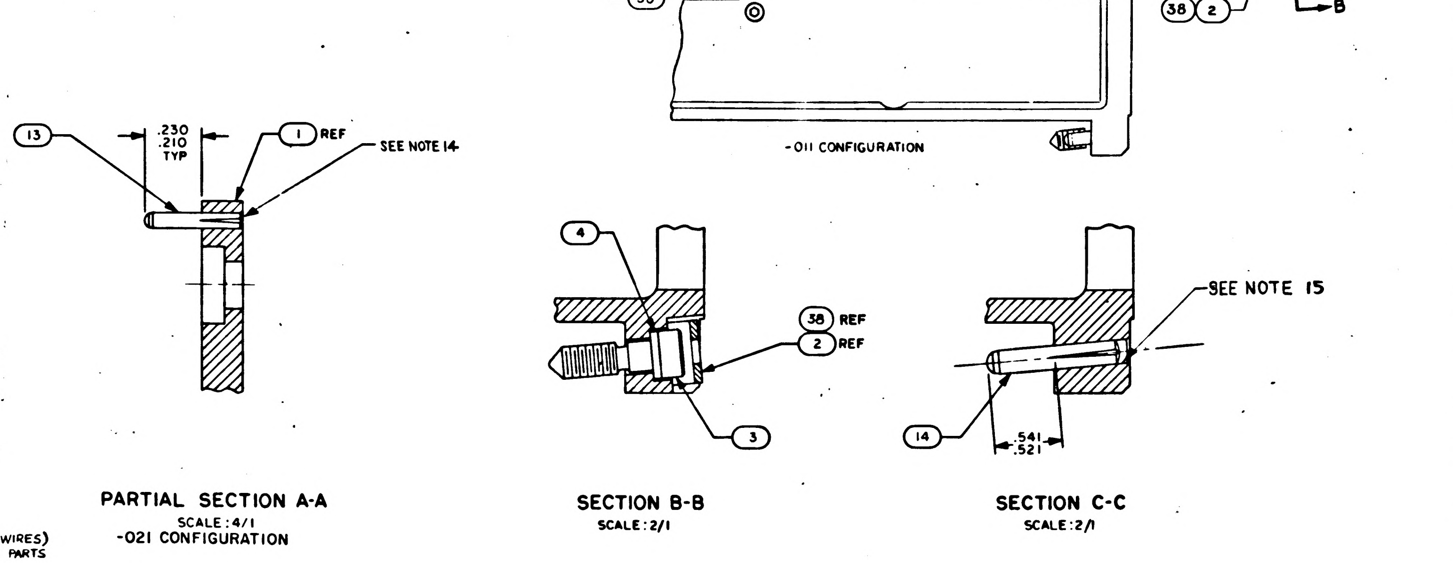
SECTION E-E

PARTIAL SECTION D-D
SCALE:2/1

SECTION A-A
SCALE 4/1
-011 CONFIGURATION

-021 CONFIGURATION

Ⓒ REPLACES WORD DWG REV B



PARTIAL SECTION A-A
SCALE:4/1
-021 CONFIGURATION

SECTION B-B
SCALE:2/1

SECTION C-C
SCALE:2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND FIND NO. 19 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
3. MARK PER ND 1002019, BLACK .100/.140 HIGH AND SERIALIZE PER ND 1002023
4. ASSEMBLE FIND NUMBERS 9, 10, 11 AND 12 PER ND 1002136
5. BOND FIND NOS. 22, 23, 24, 25, 26, 31, 32, 33 AND 34 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
8. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
9. MOUNTING TORQUE FOR FIND NUMBERS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
10. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
11. PROCURE PER PS 1007145
12. BOND FIND NOS. 27 AND 28 TO FIND NOS. 11 AND 20 PER ND 1002237
13. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A FORMULATION CONSISTING OF 40 PARTS BY WT. 1010959-1, 100 PARTS BY WT. 1010959-2, AND 7 PARTS BY WT. 1006277 AND CURE AT ROOM TEMPERATURE FOR THREE HOURS OR ONE HOUR AT 140°F. LIMITED AMOUNT ALLOWED TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004, TYPE I.
14. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND 1002004, POTTING SIDE ONLY.
15. FILL CAVITY PER ND 1002009, METHOD J.
16. BOND FIND NO. 37 TO FIND NO. 30 PER ND1002151, USING ADHESIVE MIL-A-25457.
17. PAINT THE MODULE MOUNTING SURFACE AND THE SURFACE PERPENDICULAR TO THE MODULE MOUNTING SURFACE PER ND1002292, USING MIL-C-15328, WASH PRIMER FOLLOWED BY MIL-P-8585, ZINC CHROMATE PRIMER, FOLLOWED BY 1012543-003 PAINT. MODULE GUIDE PINS, CONNECTOR FEMALE PINS AND INSULATORS ARE TO FREE OF PAINT. SEE FIND NO. 40.
18. APPLY A BEAD OF SILICONE GREASE MIL-S-8660 BETWEEN THE ROWS OF MALCO PINS IN BOTH DIRECTIONS BETWEEN THE GASKETS AND THE TRAY FRAME AND AROUND THE PERIMETER OF THE GASKETS ON THE MALCO CONNECTOR. NOMINAL BEAD DIA. TO BE 1/8

	031	021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
	AR				SEE NOTE 17	MOISTURE PROOFING	39
	1				1008333	RETAINER, JACK SCREW	38
	1				1008336	GASKET, MINI-WASP	37
	1				1008339	GASKET, CONNECTOR TRAY	36
	1				1008338	GASKET, CONNECTOR TRAY	35
	1	–	1		1008625	WIRE LIST AA	34
	1	–	1		1008624	WIRING HARNESS C	33
	1	–	1		1008623	WIRING HARNESS B	32
	1	–	1		1008622	WIRING HARNESS A	31
	1	–	1		1008590	FRAME	30
	–	1	–		1010622-1	CONNECTOR, RECEPTACLE	29
	–	☒	–		1009555	WIRING DIAGRAM	REF
	–	1	1		1008553	GASKET CONNECTOR MIN TRAY	28
	☒	–	☒		1009565	WIRING DIAGRAM	REF
	–	1	1		1008552	GASKET CONNECTOR TRAY	27
	–	1	–		1015753	WIRE LIST AA	26
	–	1	–		1015752	WIRING HARNESS D	25
	–	1	–		1015751	WIRING HARNESS C	24
	–	1	–		1015750	WIRING HARNESS B	23
	–	1	–		1015749	WIRING HARNESS A	22
	45	45	45		1006782-2	CONTACT, WRAPOST MALE MIN	21
	45	45	45		1006775	INSULATOR, MALE WRAPOST MIN	20
	1	1	1		1007099	BUFFER RESISTORS ASSEMBLY	19
	2	2	2		MA21045 C04	NUT, SELF-LOCKING, HEX	18
	2	2	2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
	3	3	3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
	1	–	1		1010821-1	CONNECTOR, RECEPTACLE	15
	2	2	2		1010620-5	PIN, GUIDE	14
	16	18	16		MS16556-604	PIN, GUIDE	13
	60	60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	12
	60	60	60		1010383-1	INSULATOR, WRAPOST, MALE	11
	158	188	158		1006781-2	CONTACT, WRAPOST, FEMALE, MIN	10
	158	188	158		1006774	INSULATOR, WRAPOST, FEMALE, MIN	9
	–	~~24~~	–		~~MS 171433~~	~~PIN, SPRING~~	~~8~~
	–	~~48~~	–		~~1004206~~	~~WASHER, THRUST~~	~~7~~
	–	~~24~~	–		~~1004207~~	~~DRIVE CYLINDER~~	~~6~~
	–	~~24~~	–		~~1008172~~	~~SCREW, JACK~~	~~5~~
	1	1	1		1008099-2	WASHER,	4
	1	1	1		1008098	SCREW, SOCKET HEAD	3
	–	1	1		1001317	RETAINER, JACK SCREW	2
	–	1	–		1008525	FRAME	1
QUANTITY REQUIRED					LIST OF MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007575		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN [illegible] DATE [illegible]
CHECKED [illegible] 6 OCT 64
APPROVAL [illegible] 8 OCT 64
M B APPROVAL [illegible]
NASA APPROVAL [illegible] 11-4-64
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 5

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007535
SCALE 1/1
WT
SHEET 1 OF 2

1007535 N

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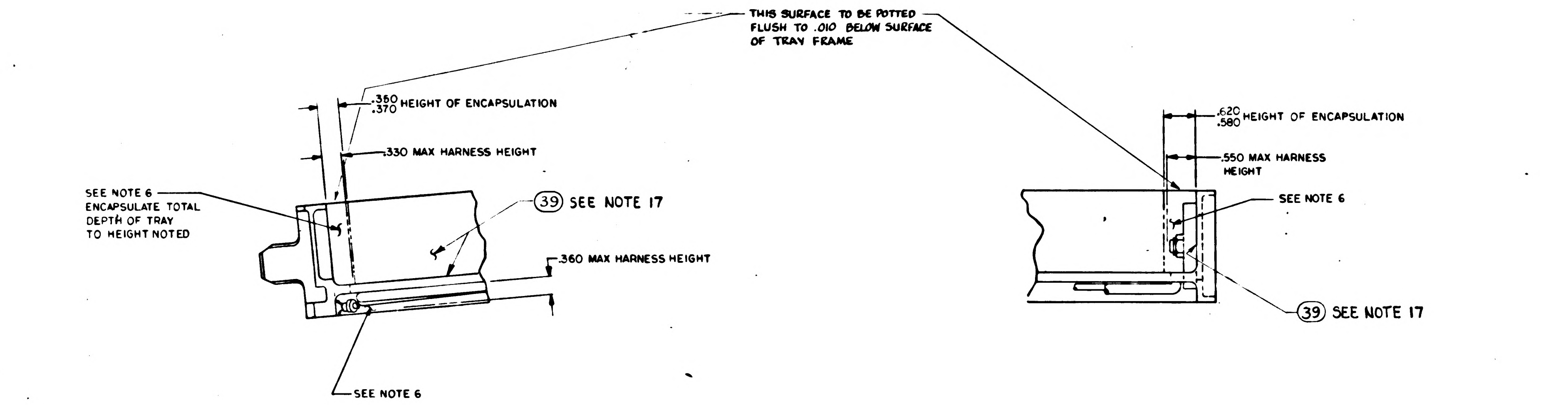
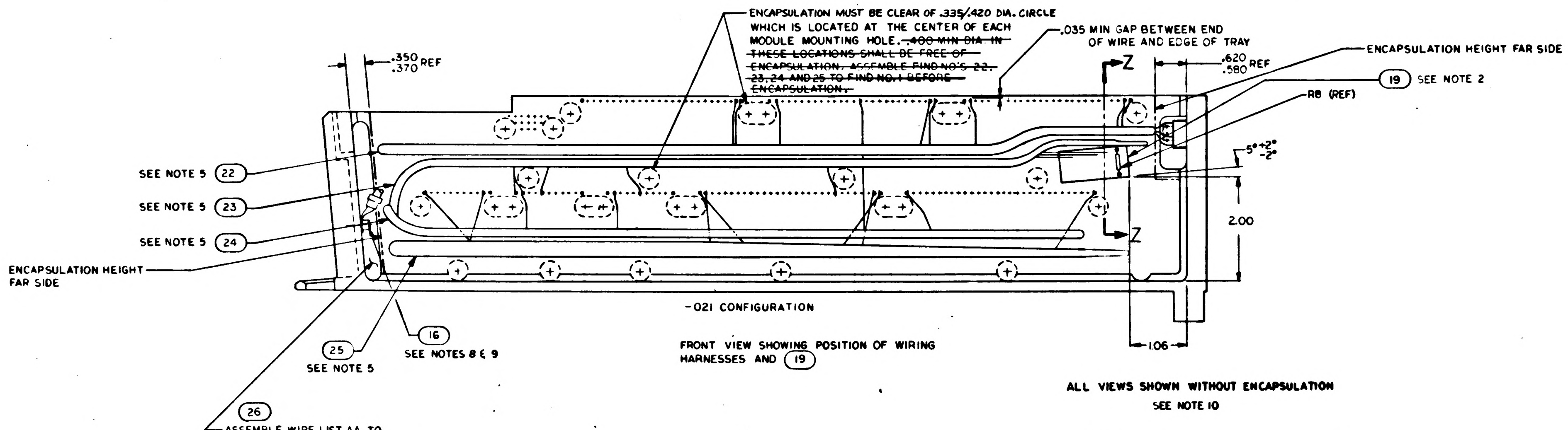
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13739	[illegible]	WK
D	REVISED PER TDRR 14703	[illegible]	WK
E	REVISED PER TDRR [illegible]	29 Dec 64	EWP [illegible] WK
F	REVISED PER TDRR 15948	11-FEB-65	[illegible]
G	REVISED PER TDRR 17613	[illegible] MAR 65	RJ WT
H	REVISED PER TDRR 18690	4 MAY 65	CF W.T.
J	REVISED PER TDRR 18691	7 MAY 65	CF
K	REVISED PER TDRR 18695	11 MAY 65	A.N.
L	REVISION STATUS CHANGED	21-JUN 65	M.G. MGM
M	REVISED PER TDRR 20785	22 JUL 65	RLP RWH
N	REVISED PER TDRR 26396	24 FEB 66	J.H.P.

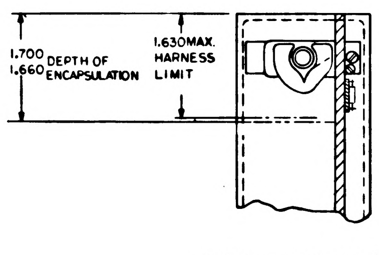

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.360 .370 HEIGHT OF ENCAPSULATION
.330 MAX HARNESS HEIGHT
SEE NOTE 6 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
39 SEE NOTE 17
.360 MAX HARNESS HEIGHT
SEE NOTE 6
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS HEIGHT
SEE NOTE 6
39 SEE NOTE 17


ENCAPSULATION MUST BE CLEAR OF .335/.420 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE. ~~.400 MIN DIA. IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO'S 22, 23, 24 AND 25 TO FIND NO. 1 BEFORE ENCAPSULATION.~~
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350 .370 REF
Z
Z
.620 .580 REF
ENCAPSULATION HEIGHT FAR SIDE
19 SEE NOTE 2
R8 (REF)
5° +2° −2°
2.00
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
ENCAPSULATION HEIGHT FAR SIDE
1.06
25 SEE NOTE 5
16 SEE NOTES 8 & 9
26 ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION

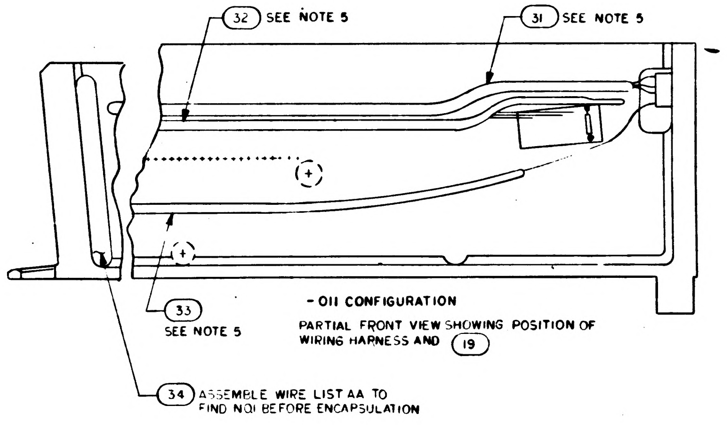
-021 CONFIGURATION

FRONT VIEW SHOWING POSITION OF WIRING HARNESSES AND (19)

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 10


1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX. HARNESS LIMIT

PARTIAL SECTION Z Z


32 SEE NOTE 5
31 SEE NOTE 5
33 SEE NOTE 5
34 ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION

-011 CONFIGURATION

PARTIAL FRONT VIEW SHOWING POSITION OF WIRING HARNESS AND (19)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
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DWG NO Contract NAS 9-497
DRAWN DATE 1 OCT 64
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
APPROVAL 11-20-64
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 5

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007535
SCALE 1/1
WT
SHEET 2 OF 2

1007535 N

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1007535

REVISIONS 12031			
SYM	DESCRIPTION	DATE	APPROVAL

DASH NO. 011

PART NO.	DESCRIPTION	REQD.
1008525-001	Frame, Tray 5	1
1006774	Insulator, Wrapost, Female Miniature	158
1006781-2	Contact, Wrapost, Female Miniature	158
1010382-1	Contact, Blade Edge Connector	60
1010383-1	Insulator, Wrapost, Male	60
1010622-1	Connector Receptacle	1
1010620-4	Pin, Guide	16
1010620-5	Pin, Guide	2
1001317	Retainer, Jack Screw	1
1008172	Screw, Jack	24
1008098	Screw, Socket Head	1
1004206	Washer, Thrust	48
1008099-2	Washer	1
1004207	Drive Cylinder	24
MS 16995-10	Screw, Cap, Socket Head	3
MS 16995-11	Screw, Cap, Socket Head	2
MS 21045 C 04	Nut, Self-Locking Hex	2
1006782-2	Contact, Wrapost-Male, Miniature	45
1006775	Insulator, Wrapost-Male, Miniature	45
MS 171433	Pin, Spring	24
1008552-001	Gasket, Connector	1
1008553-001	Gasket, Connector	1

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007575	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
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DWG. NO. CONTRACT
DRAWN DATE 7/15/64
CHECKED
APPROVAL
APPROVAL 8/24/64
NASA APPROVAL
MIT APPROVAL

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FRAME ASSEMBLY
TRAY 5
(100 SERIES)

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007535
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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1007536 | A

REVISIONS 12031

SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED BY CONFIGURATION DWG REV B PER TDRR 13923	11/4/64	WK

DASH NO. 011

PART NO.	DESCRIPTION	REQD.
1008526-001	Frame, Tray 6	1
1006774	Insulator, Wrapost, Female Miniature	160
1006781-2	Contact, Wrapost, Female Miniature	160
1010382-1	Contact, Blade Edge Connector	60
1010383-1	Insulator, Wrapost, Male	60
1010622-1	Connector Receptacle	1
1010620-4	Pin, Guide	16
1010620-5	Pin, Guide	2
1001317	Retainer, Jack Screw	1
1008172	Screw, Jack	25
1008098	Screw, Socket Head	1
1004206	Washer, Thrust	50
1008099-2	Washer	1
1004207	Drive Cylinder	25
MS 16995-10	Screw, Cap, Socket Head	3
MS 16995-11	Screw, Cap, Socket Head	2
MS 21045 C 04	Nut, Self-Locking Hex	2
1006782-2	Contact, Wrapost-Male, Miniature	45
1006775	Insulator, Wrapost-Male, Miniature	45
MS 171433	Pin, Spring	25
1007110	Buffer Resistors Ass'y	1
1008552-001	~~Gasket, Connector~~	1
1008553-001	Gasket, Connector	1

Ⓐ REPLACED BY CONFIGURATION DWG REV B

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007576	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
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FRACTIONS ± DECIMALS ± ANGLES ±
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CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN Koren DATE 7/25/64
CHECKED
APPROVAL
APPROVAL D. A. Test 8/24/64
NASA APPROVAL 8/25/64
MIT APPROVAL W Kupfer 25 Aug 64

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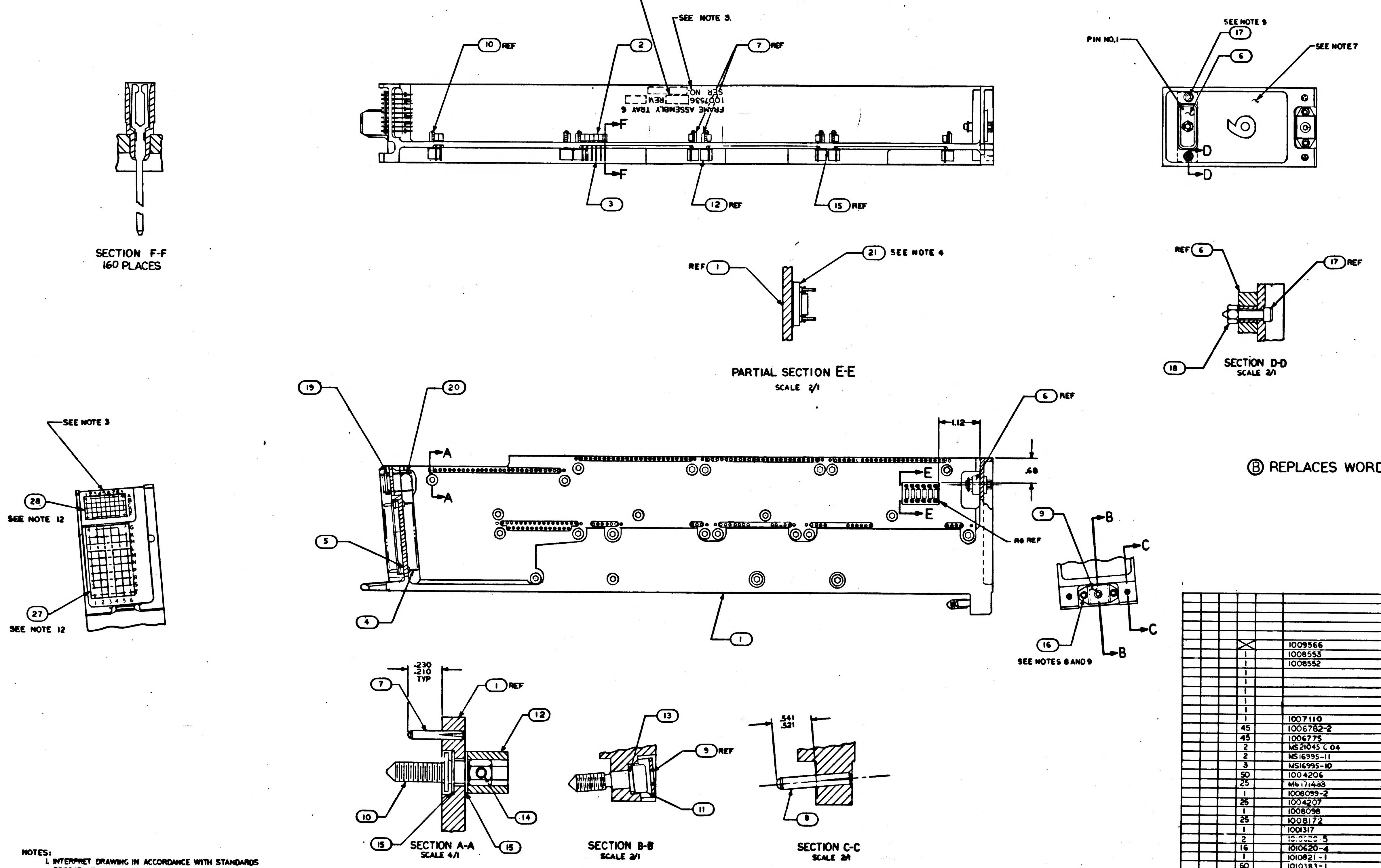
FRAME ASSEMBLY
TRAY 6
(100 SERIES)

CODE IDENT NO. | SIZE C | NASA DRAWING NO. 1007536
SCALE | WT | SHEET 1 OF 1

MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES WORD DWG REV A PER TDRR 13923	[illegible]	WR


APPLICABLE DASH NO.
SEE NOTE 3.
SER NO.
REV
1007536
FRAME ASSEMBLY TRAY 6
10 REF
2
7 REF
3
12 REF
15 REF
F
SECTION F-F
160 PLACES
PIN NO.1
SEE NOTE 9
17
6
SEE NOTE 7
D
REF 1
21 SEE NOTE 4
PARTIAL SECTION E-E
SCALE 2/1
REF 6
17 REF
18
SECTION D-D
SCALE 2/1
SEE NOTE 3
28
SEE NOTE 12
27
SEE NOTE 12
19
20
A
5
4
1
1.12
.68
6 REF
E
R6 REF
9
B
C
16
SEE NOTES 8 AND 9
.230
.210
TYP
7
1 REF
12
10
14
15
SECTION A-A
SCALE 4/1
13
9 REF
11
SECTION B-B
SCALE 2/1
.541
.521
8
SECTION C-C
SCALE 2/1

Ⓑ REPLACES WORD DWG REV A

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,19 AND 20 PER ND 1002136
3. MARK PER ND 1002019 (BLACK) $\frac{.140}{.100}$ HIGH AND SERIALIZE PER ND 1002023.
4. BOND FIND NO.21 TO FIND NO.1 PER ND 1002004 USING FLEXIBLE FORMULATION PER NASA DRAWING 1010657 AND NASA DRAWING 1010686
5. BOND FIND NOS 22,23,24,25, & 26 TO FIND NO.1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
7. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
8. COAT THREADS OF FIND NO.16 DURING ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
9. MOUNTING TORQUE FOR FIND NUMBERS 16 AND 17 TO FIND NO.1 TO BE 5.0-5.5 IN LB.
10. ~~PROCURE PER PS1007146.~~
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071 ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. BOND FIND NO'S. 27 AND 28 TO FIND NO'S. 5 AND 19 PER ND 1002237.
13. WORKMANSHIP REQUIREMENTS TO BE IN ACCORDANCE WITH ND 1002069

MASTER

QUANTITY REQUIRED							
			OH	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
			X		1009566	WIRING DIAGRAM	REF
			1		1008553	GASKET CONNECTOR MIN TRAY	28
			1		1008552	GASKET CONNECTOR TRAY	27
			1			WIRE LIST A A	26
			1			WIRING HARNESS D	25
			1			WIRING HARNESS C	24
			1			WIRING HARNESS B	23
			1			WIRING HARNESS A	22
			1		1007110	BUFFER RESISTORS ASSEMBLY	21
			45		1006782-2	CONTACT, WRAPOST, MALE MIN	20
			45		1006775	INSULATOR, WRAPOST, MALE MIN	19
			2		MS21045 C 04	NUT, SELF-LOCKING HEX	18
			2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
			3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
			50		1004206	WASHER, THRUST	15
			25		MS171433	PIN, SPRING	14
			1		1008099-2	WASHER,	13
			25		1004207	DRIVE CYLINDER	12
			1		1008098	SCREW, SOCKET HEAD	11
			25		1008172	SCREW, JACK	10
			1		1001317	RETAINER, JACK SCREW	9
			2		1010620-5	PIN, GUIDE	8
			16		1010620-4	PIN, GUIDE	7
			1		1010821-1	CONNECTOR, RECEPTACLE	6
			60		1010383-1	INSULATOR, WRAPOST MALE	5
			60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
			160		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
			160		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
			1		1008526	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007576		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
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DRAWN R J Fox DATE OCT 64
CHECKED 8 OCT 64
APPROVAL 14 OCT 64
APPROVAL
NASA APPROVAL W J Rhine 11-4-64
MIT APPROVAL 4/1/64

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FRAME ASSEMBLY TRAY 6

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007536
SCALE 1/1
WT
SHEET 1 OF 2

1007536 B

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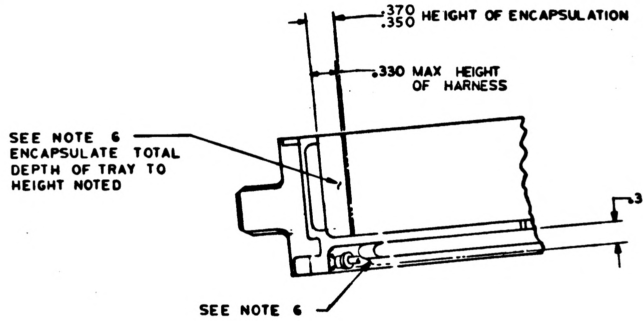
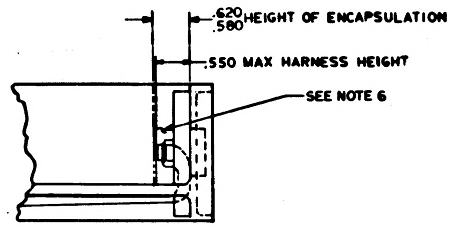
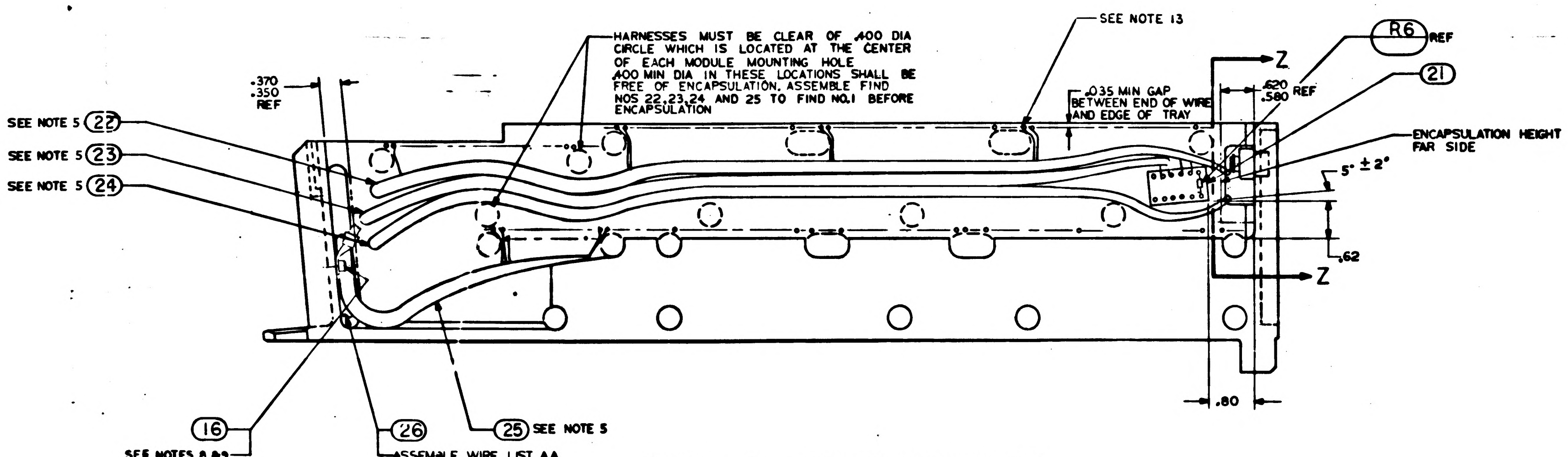
REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
	B	REPLACES WORD DWG REV A PER TDRR 13923		11/4/64	WK

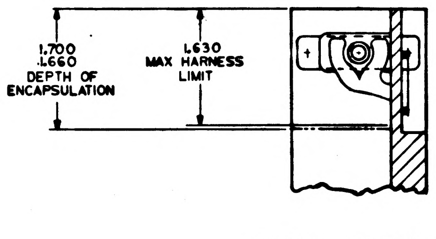

.370
.350 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 6 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6


.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS HEIGHT
SEE NOTE 6


HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE .400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS 22,23,24 AND 25 TO FIND NO.1 BEFORE ENCAPSULATION
SEE NOTE 13
R6 REF
21
.370
.350
REF
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
Z
.620
.580 REF
ENCAPSULATION HEIGHT FAR SIDE
5° ± 2°
.62
Z
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
.80
16
SEE NOTES 8 & 9
26
ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION
25 SEE NOTE 5

FRONT VIEW SHOWING POSITION OF WIRING HARNESSES AND ITEM 21

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 10


1.700
1.660
DEPTH OF ENCAPSULATION
1.630
MAX HARNESS LIMIT

PARTIAL SECTION Z-Z

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS — DECIMALS XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

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DRAWN [illegible] DATE OCT. 64
CHECKED [illegible] 8 OCT 64
APPROVAL [illegible] 14 OCT 64
I & S APPROVAL [illegible] 11-2-64
NASA APPROVAL W J [illegible] 11-4-64
MIT APPROVAL W [illegible]

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HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 6

CODE IDENT NO. SIZE E NASA DRAWING NO. 1007536
SCALE 1/1 WT SHEET 2 OF 2

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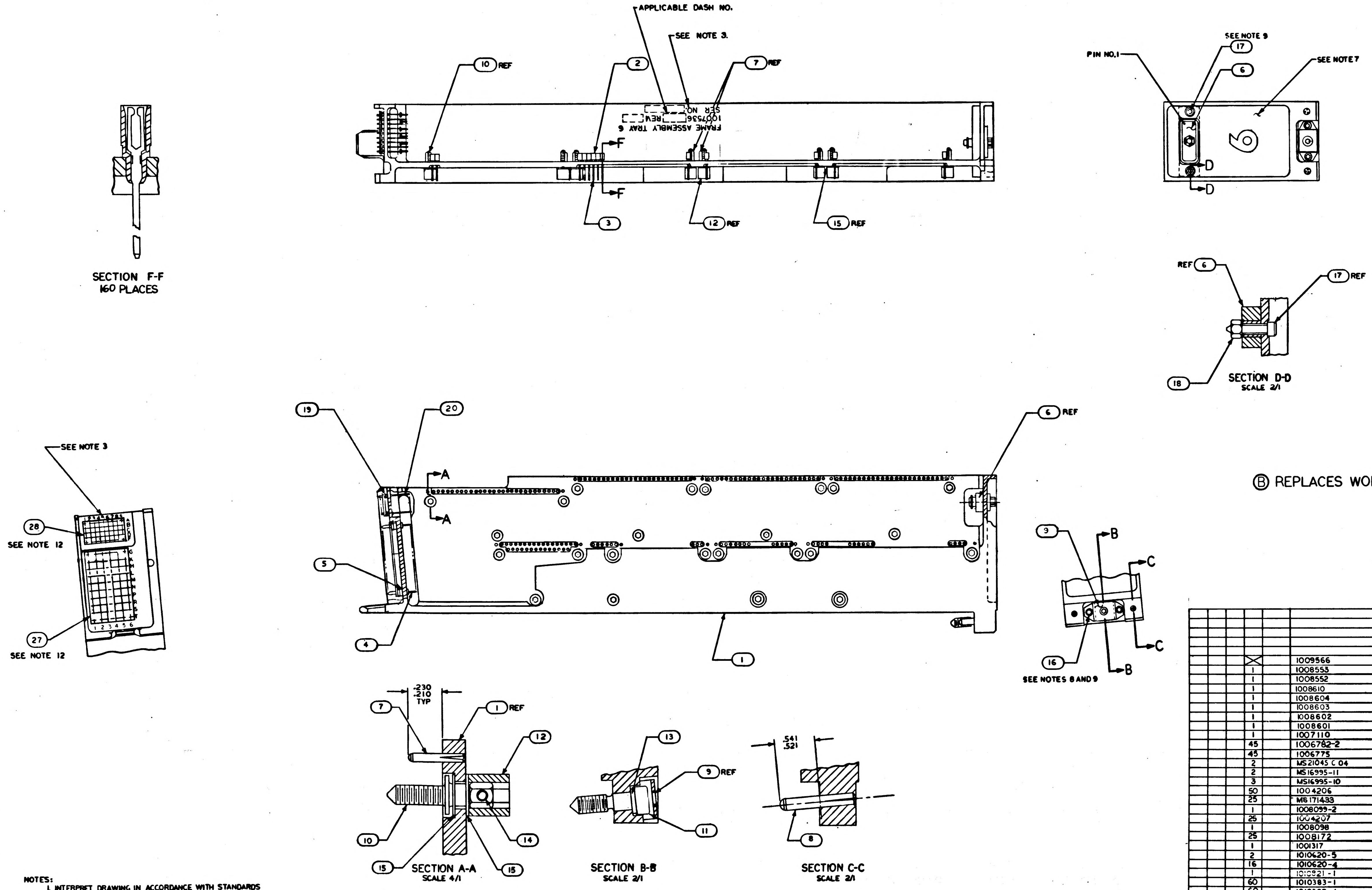
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES WORD DWG REV A PER TDRR 3-:3		
C	REVISED PER TDRR 15151		



Ⓑ REPLACES WORD DWG REV A

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,19 AND 20 PER ND 1002136
3. MARK PER ND 1002019 (BLACK) $\frac{.140}{.100}$ HIGH AND SERIALIZE PER ND 1002023.
4. BOND FIND NO.21 TO FIND NO.1 PER ND 1002004 USING FLEXIBLE FORMULATION PER NASA DRAWING 1010657 AND NASA DRAWING 1010686
5. BOND FIND NOS 22,23,24,25, & 26 TO FIND NO.1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
7. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
8. COAT THREADS OF FIND NO.16 DURING ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
9. MOUNTING TORQUE FOR FIND NUMBERS 16 AND 17 TO FIND NO.1 TO BE 5.0-5.5 IN LB.
10. ~~PROCURE PER PS1007146~~.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071 ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. BOND FIND NO'S. 27 AND 28 TO FIND NO'S. 5 AND 19 PER ND 1002237.
13. WORKMANSHIP REQUIREMENTS TO BE IN ACCORDANCE WITH ND 1002069

LIST OF MATERIALS

QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
			011				
			X		1009566	WIRING DIAGRAM	REF
			1		1008553	GASKET CONNECTOR MIN TRAY	28
			1		1008552	GASKET CONNECTOR TRAY	27
			1		1008610	WIRE LIST A A	26
			1		1008604	WIRING HARNESS D	25
			1		1008603	WIRING HARNESS C	24
			1		1008602	WIRING HARNESS B	23
			1		1008601	WIRING HARNESS A	22
			1		1007110	BUFFER RESISTORS ASSEMBLY	21
			45		1006782-2	CONTACT, WRAPOST, MALE MIN	20
			45		1006775	INSULATOR, WRAPOST, MALE MIN	19
			2		MS21045 C 04	NUT, SELF-LOCKING HEX	18
			2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
			3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
			50		1004206	WASHER, THRUST	15
			25		MS171433	PIN, SPRING	14
			1		1008099-2	WASHER,	13
			25		1004207	DRIVE CYLINDER	12
			1		1008098	SCREW, SOCKET HEAD	11
			25		1008172	SCREW, JACK	10
			1		1001317	RETAINER, JACK SCREW	9
			2		1010620-5	PIN, GUIDE	8
			16		1010620-4	PIN, GUIDE	7
			1		1010821-1	CONNECTOR, RECEPTACLE	6
			60		1010383-1	INSULATOR, WRAPOST MALE	5
			60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
			160		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
			160		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
			1		1008526	FRAME	1

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007576		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN R. J. Fox DATE OCT. 64
CHECKED 8 OCT 64
APPROVAL 14 OCT 64
APPROVAL
NASA APPROVAL W J Rhine 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY TRAY 6

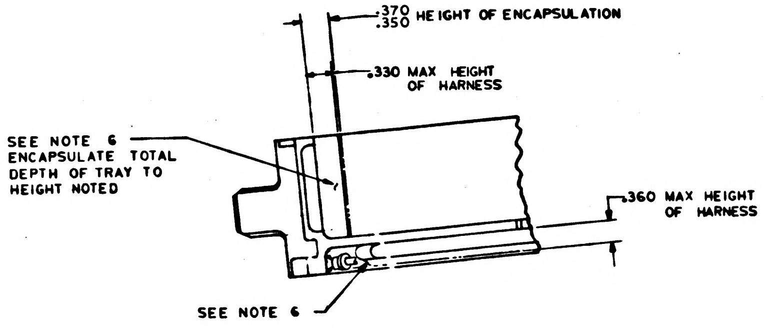
CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007536
SCALE 1/1 WT SHEET 1 OF 2

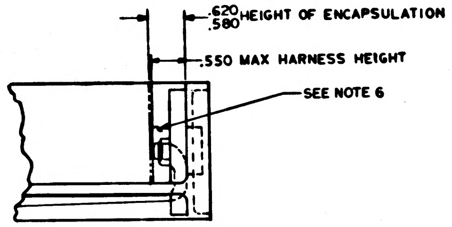
1007536 C

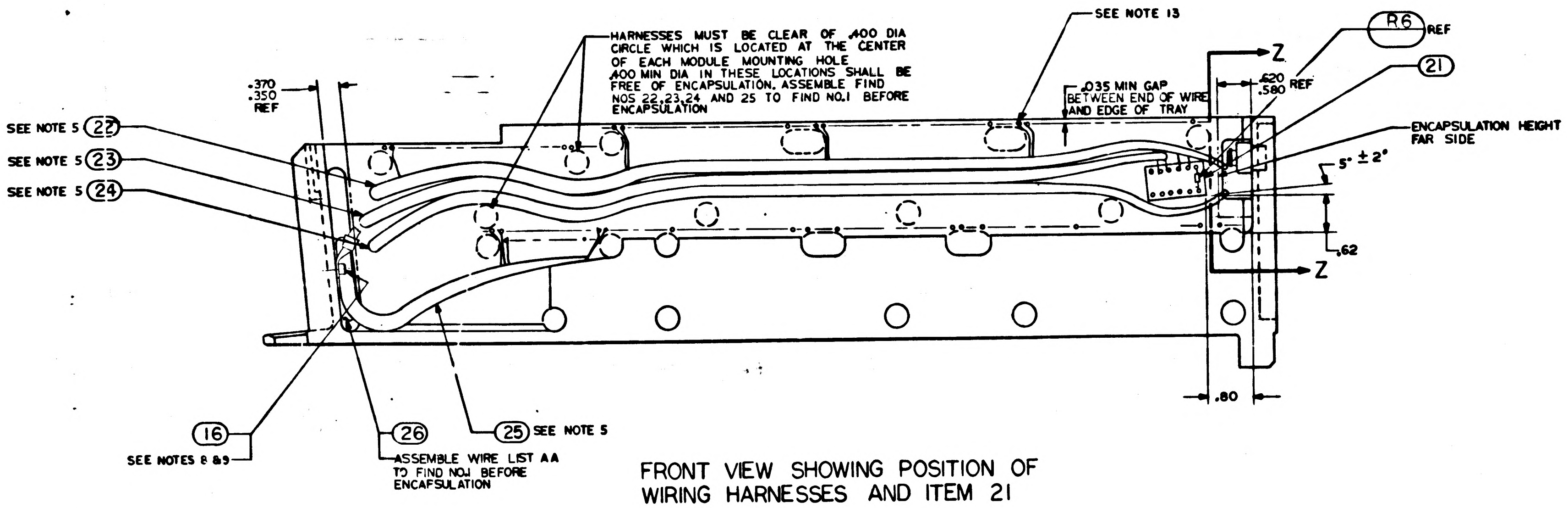
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
	B	REPLACES WORD DWG REV A PER TDRR 3723			WK
C		REVISED PER TDRR 15151		23 Jan 64	

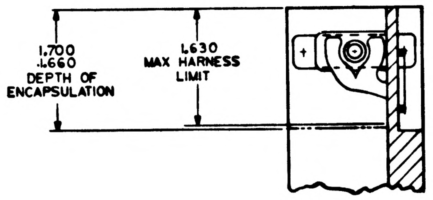

.370
.350 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6


.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS HEIGHT
SEE NOTE 6


HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS 22,23,24 AND 25 TO FIND NO.1 BEFORE ENCAPSULATION
SEE NOTE 13
R6 REF
21
Z
Z
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.620
.580 REF
ENCAPSULATION HEIGHT FAR SIDE
5° ± 2°
.62
.80
.370
.350
REF
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
16
SEE NOTES 8 & 9
26
ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION
25 SEE NOTE 5

FRONT VIEW SHOWING POSITION OF WIRING HARNESSES AND ITEM 21

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 10


1.700
1.660
DEPTH OF ENCAPSULATION
1.630
MAX HARNESS LIMIT

PARTIAL SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS — DECIMALS XX ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN DATE OCT. 64
CHECKED 8OCT64
APPROVAL 14OCT64
APPROVAL 11-2-64
NASA APPROVAL W J 11-4-64
MIT APPROVAL W 4 Nov 64

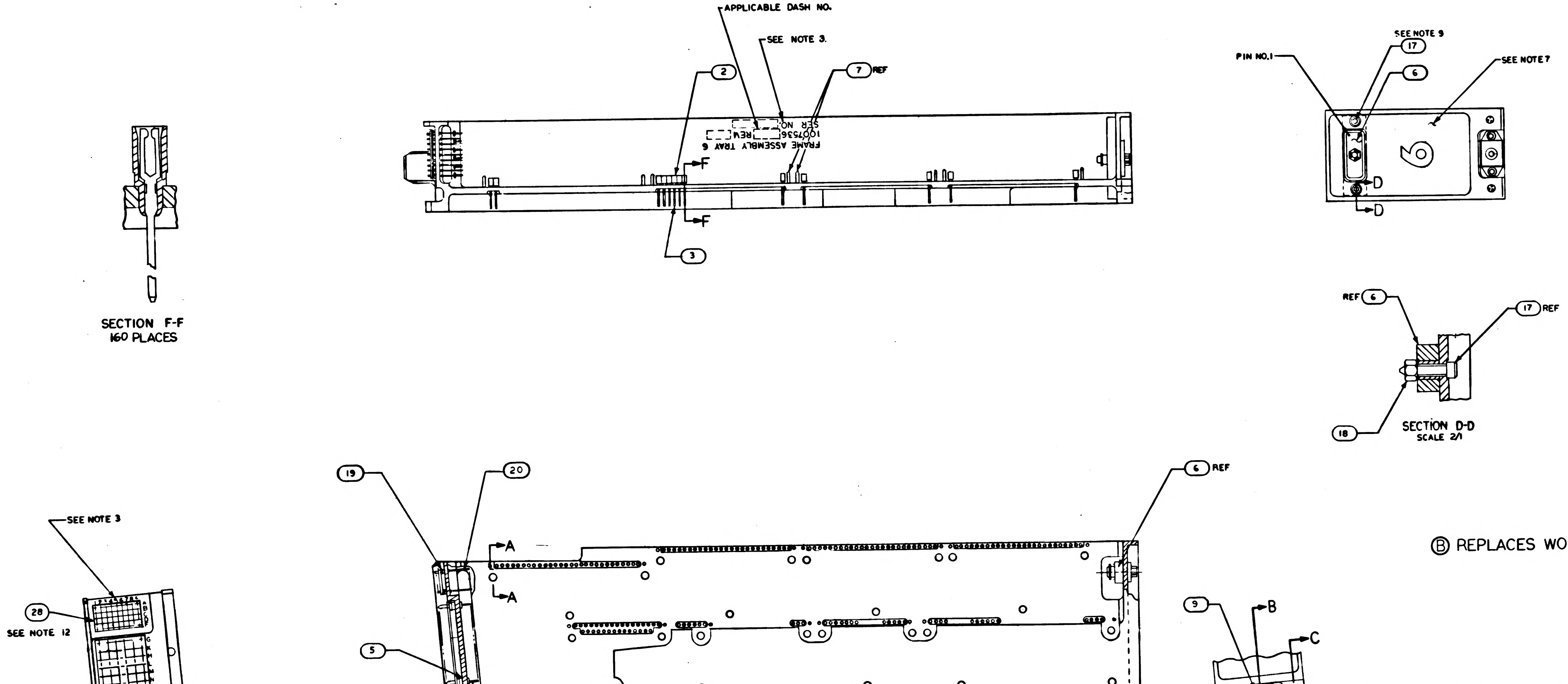
MANNED-SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 6

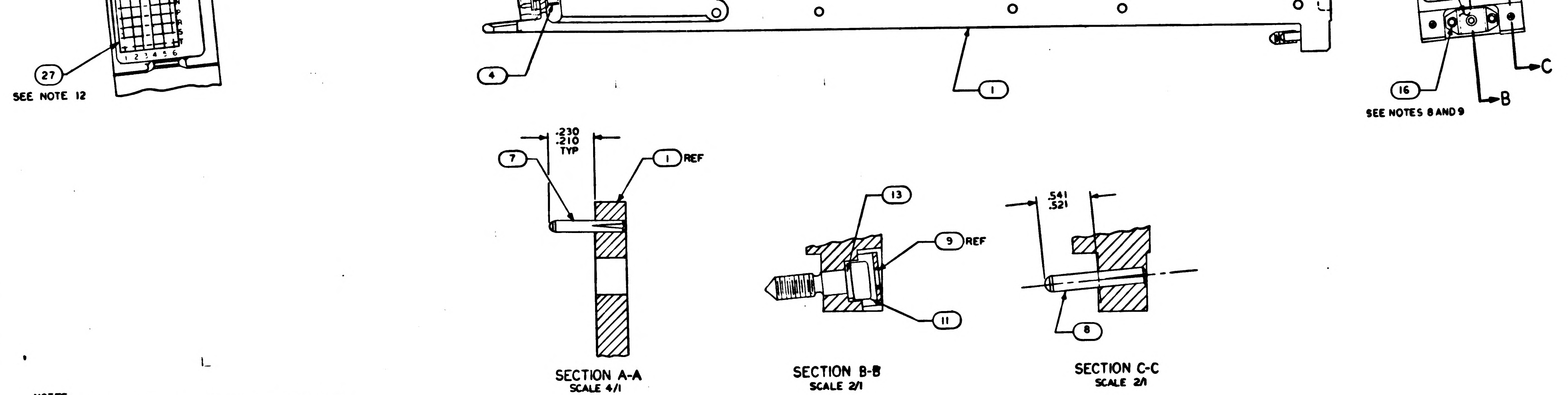
CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007536
SCALE 1/1
WT
SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES WORD DWG REV A PER TDRR 3--3		JK
C	REVISED PER TDRR 15151	Dec '64	
D	REVISED PER TDRR 15948	FEB 65	JJJ



Ⓑ REPLACES WORD DWG REV A



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,19 AND 20 PER ND 1002136
3. MARK PER ND 1002019 (BLACK) $\frac{.140}{.100}$ HIGH AND SERIALIZE PER ND 1002023.
4. BOND FIND NO.21 TO FIND NO.1 PER ND 1002004 USING FLEXIBLE FORMULATION PER NASA DRAWING 1010657 AND NASA DRAWING 1010686
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13. WORKMANSHIP REQUIREMENTS TO BE IN ACCORDANCE WITH ND 1002069

			011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
			╳		1009566	WIRING DIAGRAM	REF
			1		1008553	GASKET CONNECTOR MIN TRAY	28
			1		1008552	GASKET CONNECTOR TRAY	27
			1		1008610	WIRE LIST A A	26
			1		1008604	WIRING HARNESS D	25
			1		1008603	WIRING HARNESS C	24
			1		1008602	WIRING HARNESS B	23
			1		1008601	WIRING HARNESS A	22
			1		1007110	BUFFER RESISTORS ASSEMBLY	21
			45		1006782-2	CONTACT, WRAPOST, MALE MIN	20
			45		1006775	INSULATOR, WRAPOST, MALE MIN	19
			2		MS21045 C 04	NUT, SELF-LOCKING HEX	18
			2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
			3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
			~~50~~		~~1004206~~	~~WASHER, THRUST~~	15
			~~25~~		~~MS171433~~	~~PIN, SPRING~~	14
			1		1008099-2	WASHER,	13
			~~25~~		~~1004207~~	~~DRIVE CYLINDER~~	12
			1		1008098	SCREW, SOCKET HEAD	11
			~~25~~		~~1008172~~	~~SCREW, JACK~~	10
			1		1001317	RETAINER, JACK SCREW	9
			2		1010620-5	PIN, GUIDE	8
			16		1010620-4	PIN, GUIDE	7
			1		1010821-1	CONNECTOR, RECEPTACLE	6
			60		1010383-1	INSULATOR, WRAPOST MALE	5
			60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
			160		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
			160		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
			1		1008526	FRAME	1
QUANTITY REQUIRED					LIST OF MATERIALS		

1007576		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ±.02
ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN R. J. Fox DATE OCT. 64
CHECKED 8 OCT 64
APPROVAL 14 OCT 64
APPROVAL 11-2-64
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 6

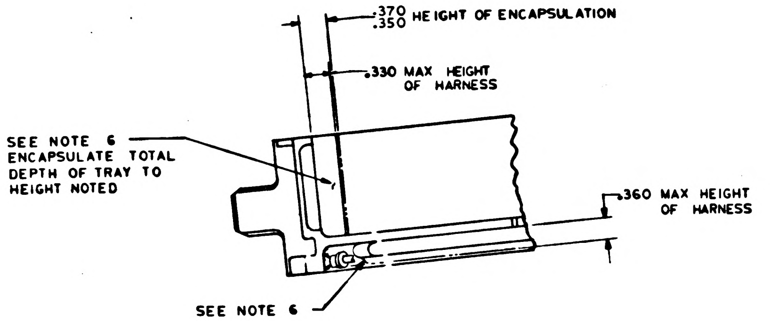
CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007536
SCALE 1/1
WT
SHEET 1 OF 2

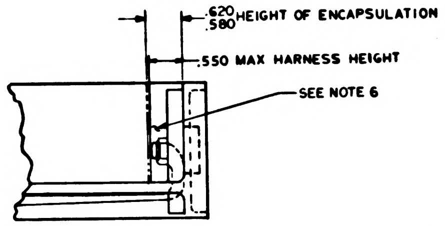
1007536 D

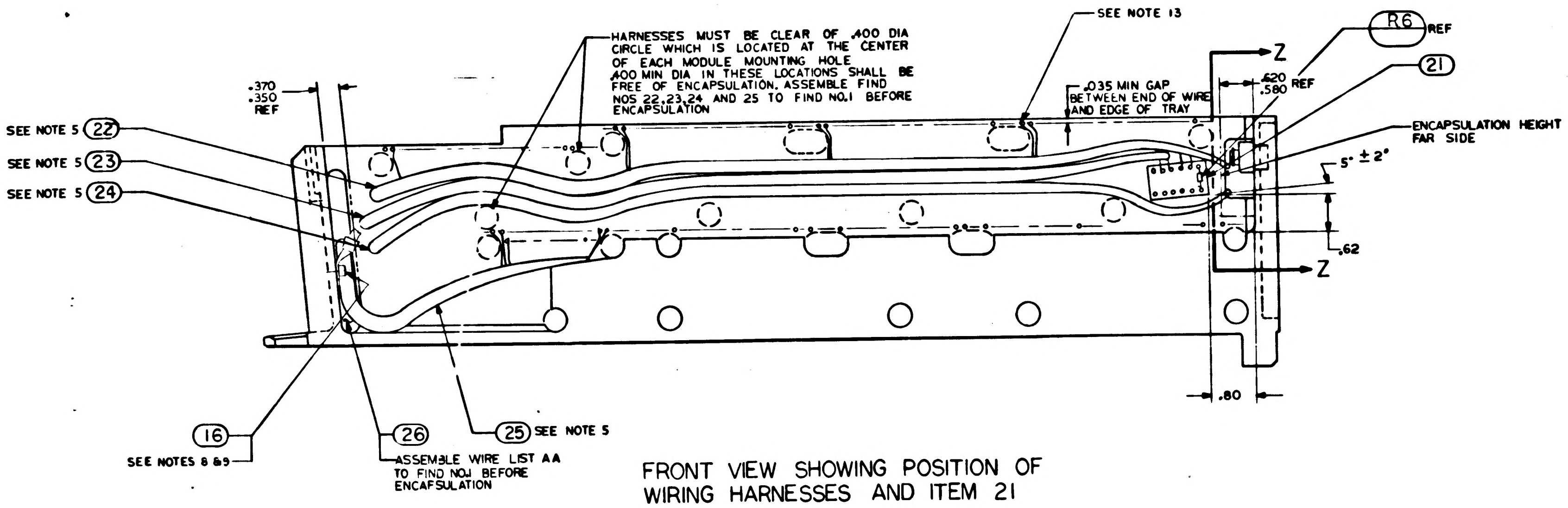
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
	B	REPLACES WORD DWG REV A PER TDRR			
C		REVISED PER TDRR 15151		23 Dec 64	
D		REVISED PER TDRR 15948	—	11 FEB 65	

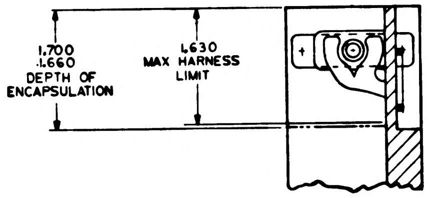

.370
.350 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 6 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6


.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS HEIGHT
SEE NOTE 6


HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE .400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS 22,23,24 AND 25 TO FIND NO.1 BEFORE ENCAPSULATION
SEE NOTE 13
R6 REF
21
Z
Z
.370
.350
REF
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.620
.580 REF
ENCAPSULATION HEIGHT FAR SIDE
5° ± 2°
.62
.80
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
16
SEE NOTES 8 & 9
26
ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION
25 SEE NOTE 5

FRONT VIEW SHOWING POSITION OF WIRING HARNESSES AND ITEM 21

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 10


1.700
1.660
DEPTH OF ENCAPSULATION
1.630
MAX HARNESS LIMIT

PARTIAL SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS — DECIMALS XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

M I T
INSTRUMENTATION LAB
Cambridge Mass
Contract NAS 9-497
DRAWN R.J. Fay DATE 1 OCT. 64
CHECKED 8OCT64
APPROVAL W Plummer 14OCT64
APPROVAL 11-2-64
NASA APPROVAL 11-4-64
MIT APPROVAL 12-4-64

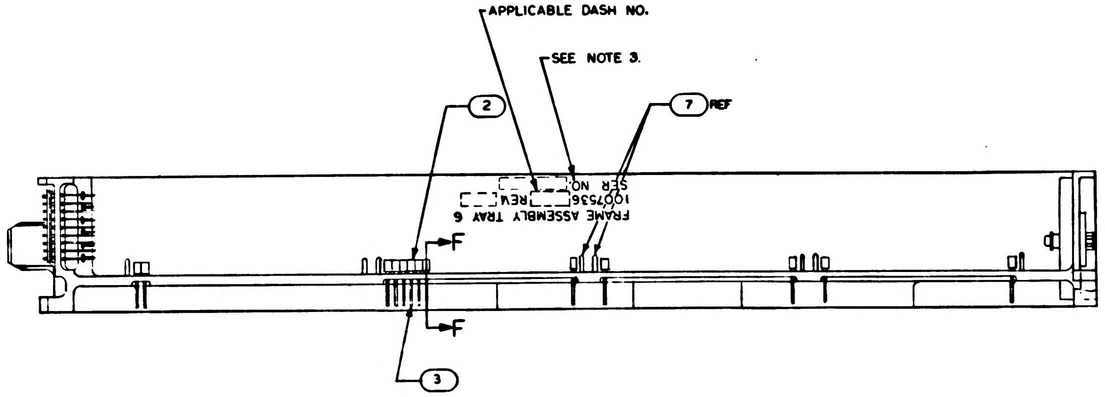
MANNED-SPACECRAFT CENTER
HOUSTON, TEXAS

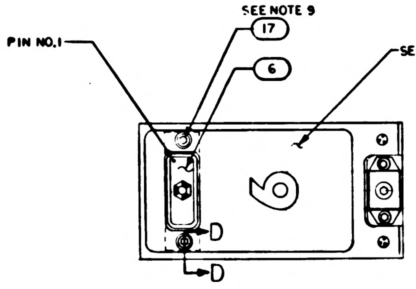
FRAME ASSEMBLY
TRAY 6

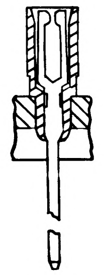
CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007536
SCALE 1/1
WT
SHEET 2 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

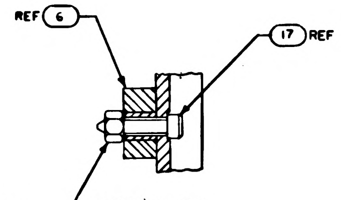
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES WORD DWG REV A PER TDRR [illegible]3		
C	REVISED PER TDRR 15151	29 Dec '64	
D	REVISED PER TDRR 15948	1 FEB 65	
E	REVISED PER TDRR 17613	24 MAR 65	RJJ



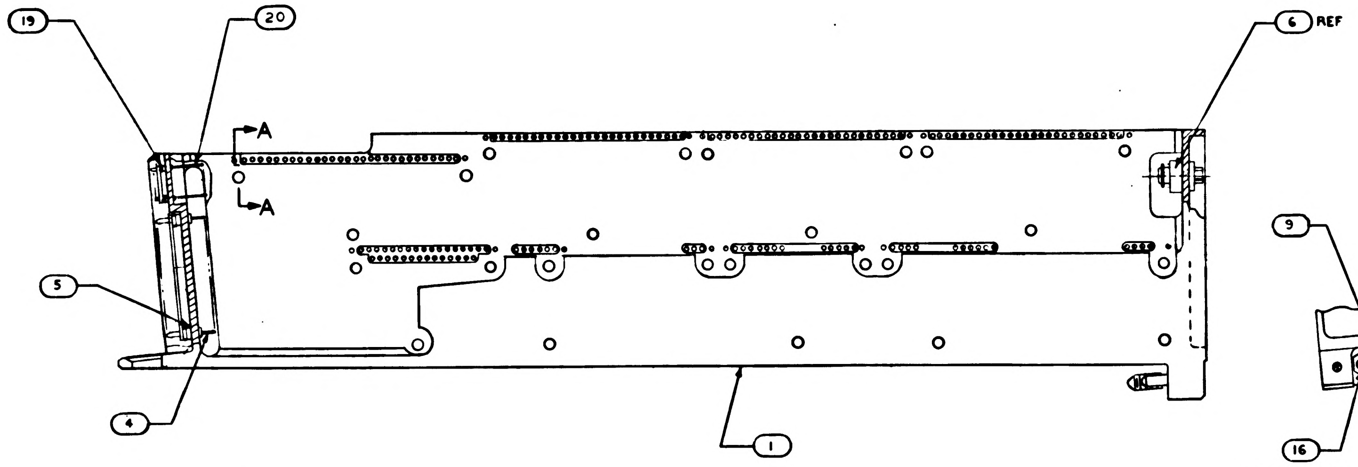


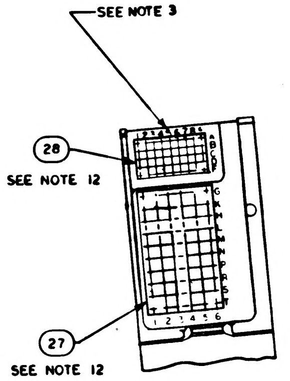


SECTION F-F
160 PLACES

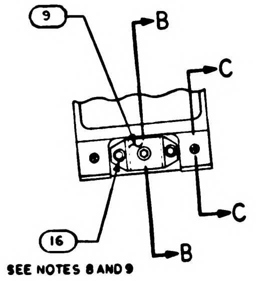


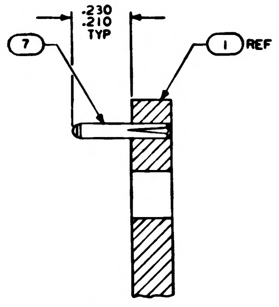
SECTION D-D
SCALE 2/1



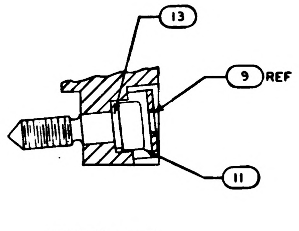


Ⓑ REPLACES WORD DWG REV A

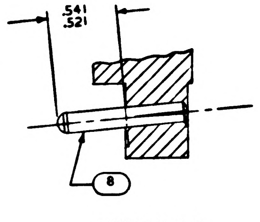




SECTION A-A
SCALE 4/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,19 AND 20 PER ND 1002136
3. MARK PER ND 1002019 (BLACK) $\frac{.140}{.100}$ HIGH AND SERIALIZE PER ND 1002023.
4. BOND FIND NO.21 TO FIND NO.1 PER ND 1002004 USING FLEXIBLE FORMULATION PER NASA DRAWING 1010657 AND NASA DRAWING 1010686
5. BOND FIND NOS 22,23,24,25, & 26 TO FIND NO.1 PER ND 1002004 TYPE I AS NECESSARY
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7. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
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12. BOND FIND NO'S. 27 AND 28 TO FIND NO'S. 5 AND 19 PER ND 1002237.
13. WORKMANSHIP REQUIREMENTS TO BE IN ACCORDANCE WITH ND 1002069

QUANTITY REQUIRED					LIST OF MATERIALS		
			011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
			╳		1009566	WIRING DIAGRAM	REF
			1		1008553	GASKET CONNECTOR MIN TRAY	28
			1		1008552	GASKET CONNECTOR TRAY	27
			1		1008610	WIRE LIST A A	26
			1		1008604	WIRING HARNESS D	25
			1		1008603	WIRING HARNESS C	24
			1		1008602	WIRING HARNESS B	23
			1		1008601	WIRING HARNESS A	22
			1		1007110	BUFFER RESISTORS ASSEMBLY	21
			45		1006782-2	CONTACT, WRAPOST, MALE MIN	20
			45		1006775	INSULATOR, WRAPOST, MALE MIN	19
			2		MS21045 C 04	NUT, SELF-LOCKING HEX	18
			2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
			3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
			~~50~~		~~1004206~~	~~WASHER, THRUST~~	15
			~~25~~		~~MS171433~~	~~PIN, SPRING~~	14
			1		1008099-2	WASHER,	13
			~~28~~		~~1004207~~	~~DRIVE CYLINDER~~	12
			1		1008098	SCREW, SOCKET HEAD	11
			~~28~~		~~1008172~~	~~SCREW, JACK~~	10
			1		1001317	RETAINER, JACK SCREW	9
			2		1010620-5	PIN, GUIDE	8
			16		1010620-4	PIN, GUIDE	7
			1		1010821-1	CONNECTOR, RECEPTACLE	6
			60		1010383-1	INSULATOR, WRAPOST MALE	5
			60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
			160		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
			160		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
			1		1008526	FRAME	1

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007576		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN R. J. Fox DATE OCT. 64
CHECKED 8 OCT 64
APPROVAL 14 OCT 64
APPROVAL 11-2-64
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 6

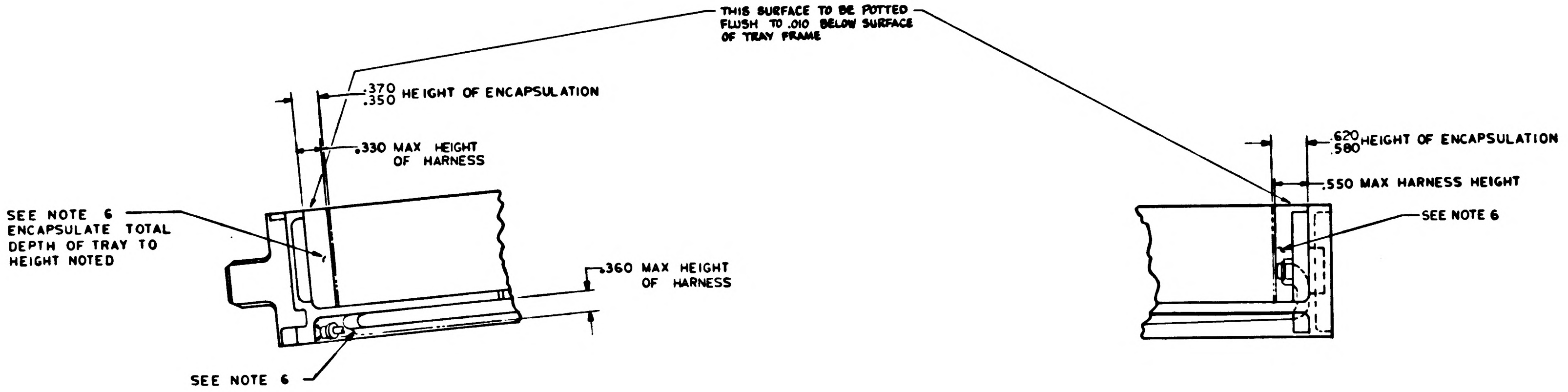
CODE IDENT NO. SIZE E NASA DRAWING NO 1007536
SCALE 1/1 WT SHEET 1 OF 2

1007536 E

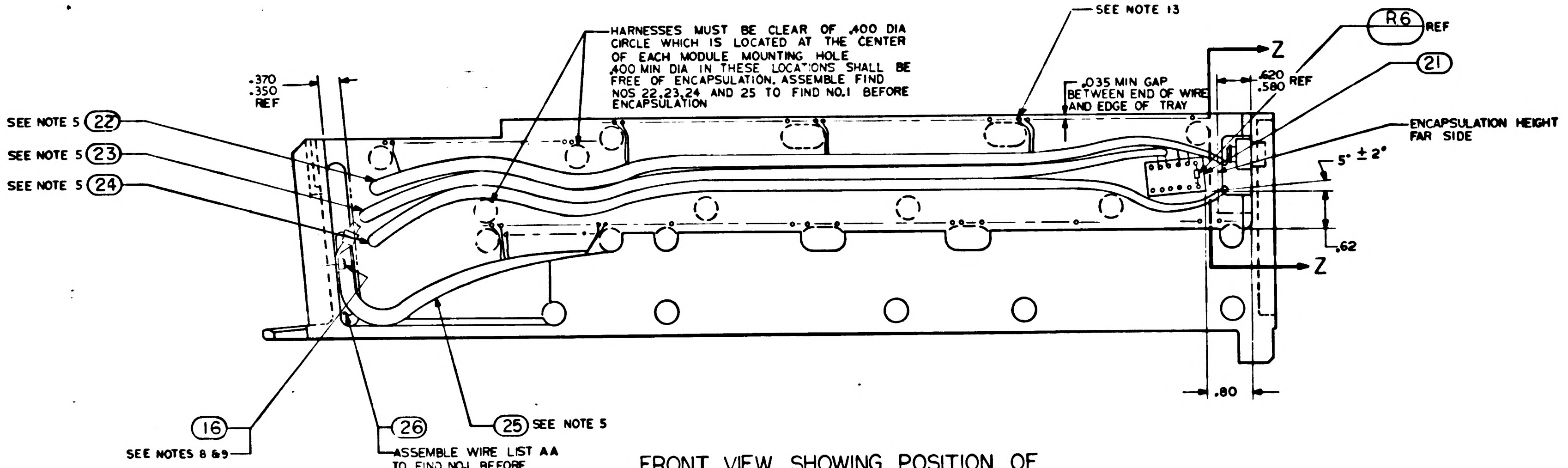
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
	B	REPLACES WORD DWG REV A PER TDRR			
C		REVISED PER TDRR 15151		23 Dec 64	
D		REVISED PER TDRR 15948	–	65	
E		REVISED PER TDRR 17613		24 MAR 65	RJJ



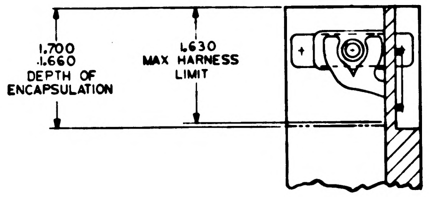
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.370 .350 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 6 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS HEIGHT
SEE NOTE 6



HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE .400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS 22,23,24 AND 25 TO FIND NO.1 BEFORE ENCAPSULATION
SEE NOTE 13
R6 REF
21
Z
.370 .350 REF
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.620 .580 REF
ENCAPSULATION HEIGHT FAR SIDE
5° ± 2°
.62
Z
.80
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
16
SEE NOTES 8 & 9
26
ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION
25 SEE NOTE 5

FRONT VIEW SHOWING POSITION OF WIRING HARNESSES AND ITEM 21

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 10



1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT

PARTIAL SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS — DECIMALS XX ±.02 ANGLES ±—
DO NOT SCALE THIS DRAWING
MATERIAL —
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CHECKED 8OCT64
APPROVAL 14OCT64
APPROVAL 11-2-64
NASA APPROVAL 11-4-64
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HOUSTON, TEXAS

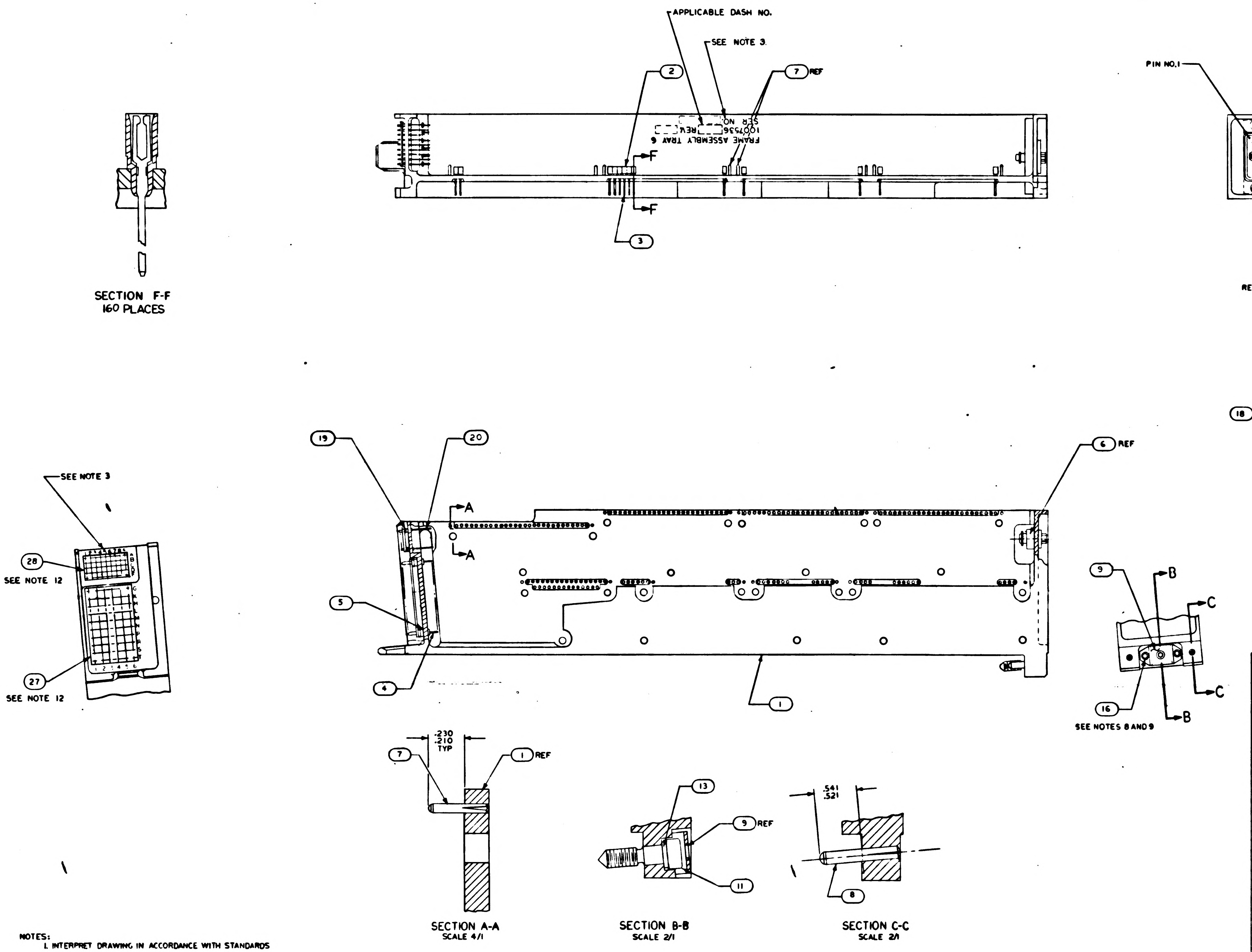
FRAME ASSEMBLY
TRAY 6

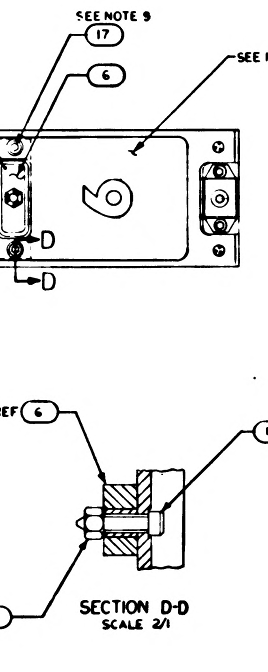
CODE IDENT NO.
SIZE E
NASA DRAWING NO 1007536
SCALE 1/1
WT
SHEET 2 OF 2

1007536 E

NOTICE – [illegible]

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES WORD DWG REV A PER TDRR [illegible]3	[illegible]	[illegible]
C	REVISED PER TDRR 15151	23 Dec 64	[illegible]
D	REVISED PER TDRR 15948	FEB 65	JJJ
E	REVISED PER TDRR 17613	24 MAR 65	RJJ
F	REVISED PER TDRR 18690	4 MAY 65	[illegible]





Ⓑ REPLACES WORD DWG REV A

			X		1009566	WIRING DIAGRAM	REF
			1		1008553	GASKET CONNECTOR MIN TRAY	28
			1		1008552	GASKET CONNECTOR TRAY	27
			1		1008610	WIRE LIST A A	26
			1		1008604	WIRING HARNESS D	25
			1		1008603	WIRING HARNESS C	24
			1		1008602	WIRING HARNESS B	23
			1		1008601	WIRING HARNESS A	22
			1		1007110	BUFFER RESISTORS ASSEMBLY	21
			45		1006782-2	CONTACT, WRAPOST, MALE MIN	20
			45		1006775	INSULATOR, WRAPOST, MALE MIN	19
			2		MS21045 C 04	NUT, SELF-LOCKING HEX	18
			2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
			3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
			~~50~~		~~1004206~~	~~WASHER, THRUST~~	15
			~~25~~		~~MS171433~~	~~PIN, SPRING~~	14
			1		1008099-2	WASHER,	13
			~~26~~		~~1004207~~	~~DRIVE CYLINDER~~	12
			1		1008098	SCREW, SOCKET HEAD	11
			~~26~~		~~1008172~~	~~SCREW, JACK~~	10
			1		1001317	RETAINER, JACK SCREW	9
			2		1010620-5	PIN, GUIDE	8
			16		MS[illegible]-604	PIN, GUIDE	7
			1		1010821-1	CONNECTOR, RECEPTACLE	6
			60		1010383-1	INSULATOR, WRAPOST MALE	5
			60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
			160		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
			160		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
			1		1008526	FRAME	1
			011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
QUANTITY REQUIRED					LIST OF MATERIALS		

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,19 AND 20 PER ND 1002136
3. MARK PER ND 1002019 (BLACK) $\frac{.140}{.100}$ HIGH AND SERIALIZE PER ND 1002023.
4. BOND FIND NO.21 TO FIND NO.1 PER ND 1002004 USING FLEXIBLE FORMULATION PER NASA DRAWING 1010657 AND NASA DRAWING 1010686
5. BOND FIND NOS 22,23,24,25, & 26 TO FIND NO.1 PER ND1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) .010 ABOVE TO .010 BELOW PERIPHERAL SURFACES OF THE TRAY FRAME UNLESS OTHERWISE SPECIFIED.
7. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
8. COAT THREADS OF FIND NO.16 DURING ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
9. MOUNTING TORQUE FOR FIND NUMBERS 16 AND 17 TO FIND NO.1 TO BE 5.0–5.5 IN LB.
10. PROCURE PER PS1007146.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071 ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. BOND FIND NO'S. 27 AND 28 TO FIND NO'S. 5 AND 19 PER ND1002237.
13. WORKMANSHIP REQUIREMENTS TO BE IN ACCORDANCE WITH ND1002069

1007576		
NEXT ASSY	USED ON	APPLICABLE DASH NO
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

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DRAWN R. J. Fox DATE OCT 64
CHECKED [illegible] OCT 64
APPROVAL [illegible] 14 OCT 64
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

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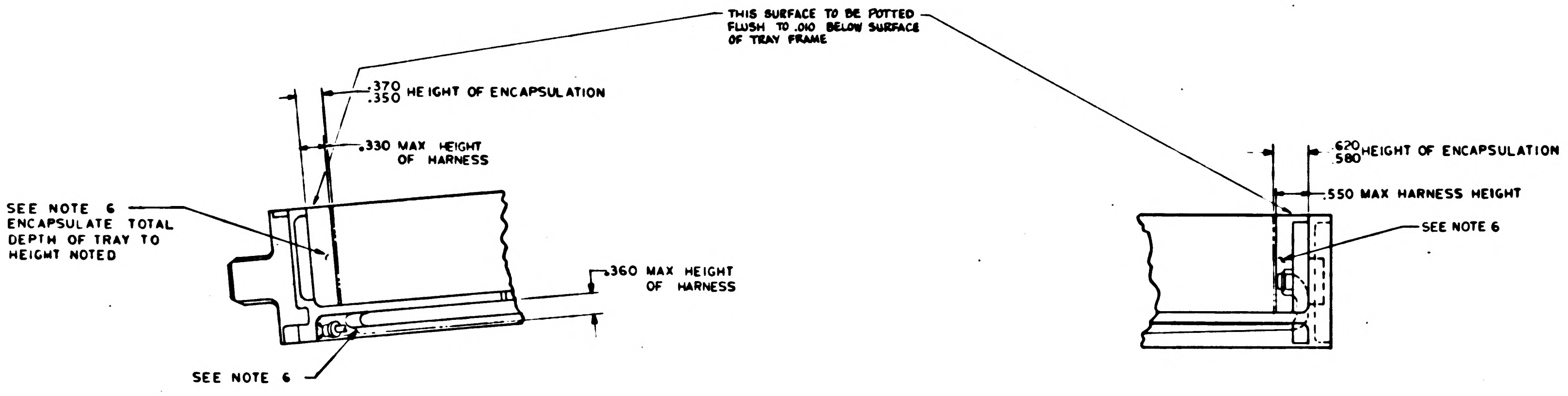
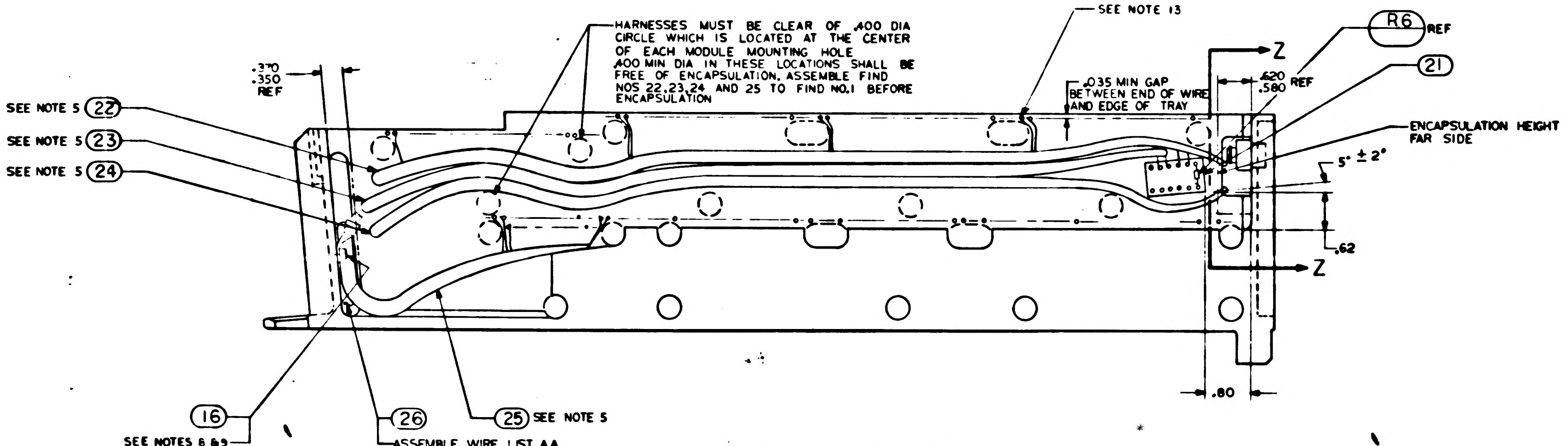
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 6

CODE IDENT NO.
SIZE E
NASA DRAWING NO 1007536
SCALE 1/1
WT
SHEET 1 OF 2

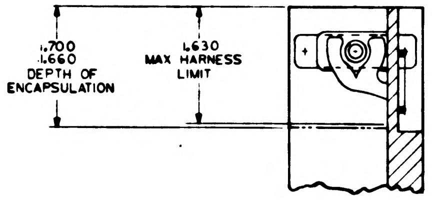
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
	B	PEPLACES WORD DWG REV A PER TDRR			
C		REVISED PER TDRR 15151		29 Dec 64	
D		REVISED PER TDRR 15948	—	65	
E		REVISED PER TDRR 17613		24 MAR 65	RW
F		REVISED PER TDRR 18690		4 MAY 65	


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.370 .350 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 6 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS HEIGHT
SEE NOTE 6


HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE .400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS 22,23,24 AND 25 TO FIND NO.1 BEFORE ENCAPSULATION
SEE NOTE 13
R6 REF
21
Z
Z
.370 .350 REF
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.620 .580 REF
ENCAPSULATION HEIGHT FAR SIDE
5° ± 2°
.62
.80
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
16
SEE NOTES 8 & 9
26
ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION
25 SEE NOTE 5

FRONT VIEW SHOWING POSITION OF WIRING HARNESSES AND ITEM 21

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 10


.700 .660 DEPTH OF ENCAPSULATION
.630 MAX HARNESS LIMIT

PARTIAL SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS — DECIMALS XX ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

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DRAWN R.J. Fox DATE OCT. 64
CHECKED 8OCT64
APPROVAL 14OCT64
APPROVAL
NASA APPROVAL 11-4-64
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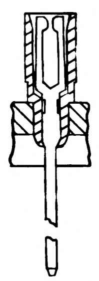
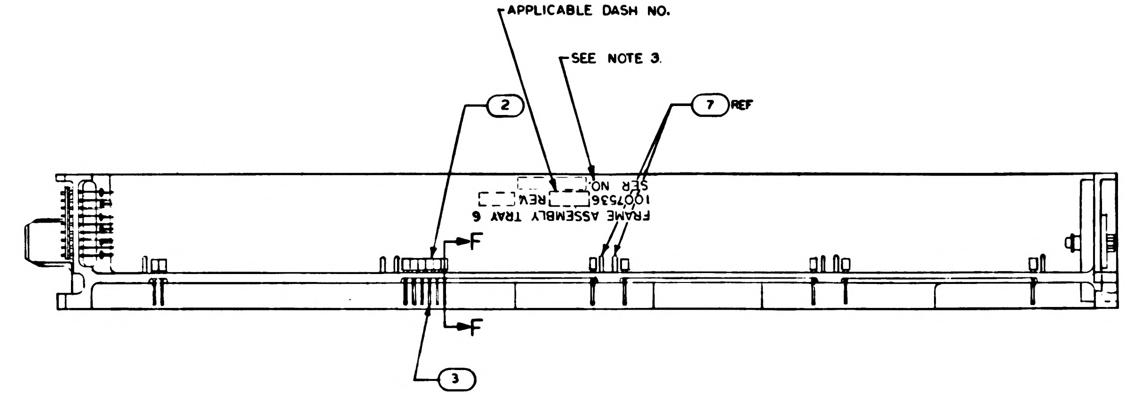
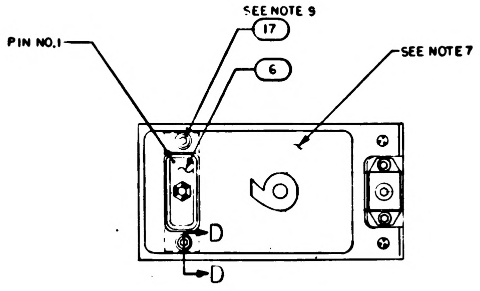
FRAME ASSEMBLY
TRAY 6

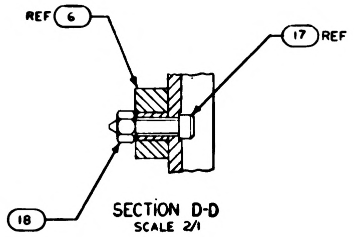
CODE IDENT NO
SIZE E
NASA DRAWING NO 1007536
SCALE 1/1
WT
SHEET 2 OF 2

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES WORD DWG REV A PER TDRR [illegible]3	[illegible]	wk
C	REVISED PER TDRR 15151	29 Dec 64	[illegible]
D	REVISED PER TDRR 15948	FEB 65	JJJ Cw
E	REVISED PER TDRR 17613	24 MAR 65	RJJ
F	REVISED PER TDRR 18690	4 MAY 65	WT EF
G	REVISED PER TDRR 18691	7 MAY 65	JJJ EF

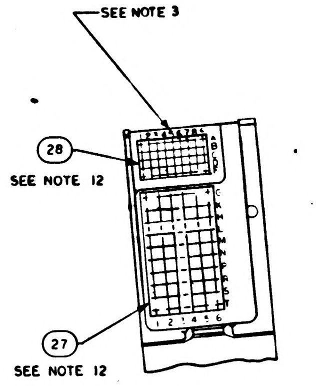

SECTION F-F
160 PLACES

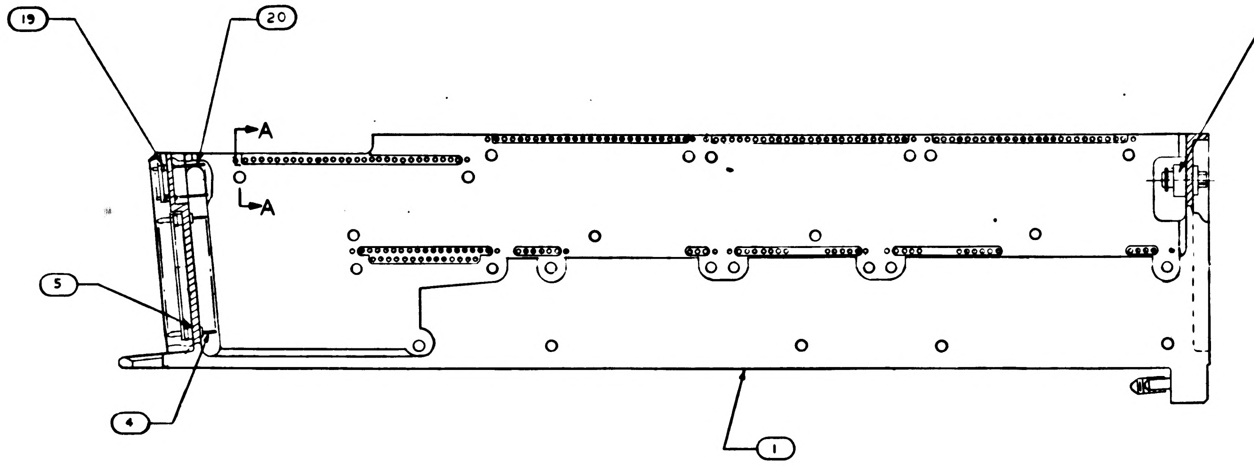




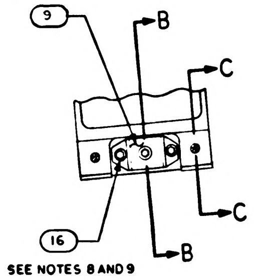


SECTION D-D
SCALE 2/1





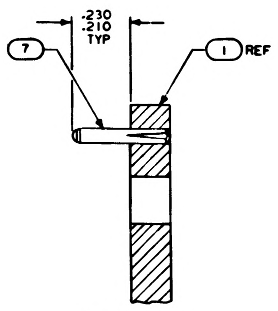
Ⓑ REPLACES WORD DWG REV A



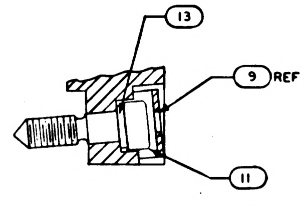
SEE NOTES 8 AND 9

NOTES:

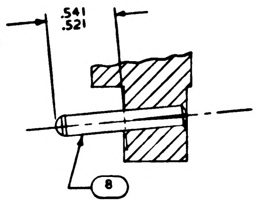
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4, 5, 19 AND 20 PER ND 1002136
3. MARK PER ND 1002019 (BLACK) .140/.100 HIGH AND SERIALIZE PER ND 1002023.
4. BOND FIND NO. 21 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION PER NASA DRAWING 1010657 AND NASA DRAWING 1010686
5. BOND FIND NOS. 22, 23, 24, 25, AND 26 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A OR B USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
8. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
9. MOUNTING TORQUE FOR FIND NUMBERS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
10. PROCURE PER PS 1007146
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. BOND FIND NOS. 27 AND 28 TO FIND NOS. 5 AND 19 PER ND 1002237
13. WORKMANSHIP REQUIREMENTS TO BE IN ACCORDANCE WITH ND 1002069
14. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.



SECTION A-A
SCALE 4/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

QUANTITY REQUIRED							
			011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
			X		1009566	WIRING DIAGRAM	REF
			1		1008553	GASKET CONNECTOR MIN TRAY	28
			1		1008552	GASKET CONNECTOR TRAY	27
			1		1008610	WIRE LIST A A	26
			1		1008604	WIRING HARNESS D	25
			1		1008603	WIRING HARNESS C	24
			1		1008602	WIRING HARNESS B	23
			1		1008601	WIRING HARNESS A	22
			1		1007110	BUFFER RESISTORS ASSEMBLY	21
			45		1006782-2	CONTACT, WRAPOST, MALE MIN	20
			45		1006775	INSULATOR, WRAPOST, MALE MIN	19
			2		MS21045 C 04	NUT, SELF-LOCKING HEX	18
			2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
			3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
			~~50~~		~~1004206~~	~~WASHER, THRUST~~	15
			~~25~~		~~MS171433~~	~~PIN, SPRING~~	14
			1		1008099-2	WASHER,	13
			~~25~~		~~1004207~~	~~DRIVE CYLINDER~~	12
			1		1008098	SCREW, SOCKET HEAD	11
			~~25~~		~~1008172~~	~~SCREW, JACK~~	10
			1		1001317	RETAINER, JACK SCREW	9
			2		1010620-5	PIN, GUIDE	8
			16		MS16556-604	PIN, GUIDE	7
			1		1010821-1	CONNECTOR, RECEPTACLE	6
			60		1010383-1	INSULATOR, WRAPOST MALE	5
			60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
			160		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
			160		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
			1		1008526	FRAME	1

LIST OF MATERIALS

1007536 G

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007576		

APPLICATION

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Contract NAS 9-497
DRAWN R. J. Fox DATE OCT 64
CHECKED [illegible] OCT 64
APPROVAL [illegible] 14 OCT 64
APPROVAL [illegible] 11-3-64
NASA APPROVAL [illegible] 11-4-64
MIT APPROVAL [illegible]

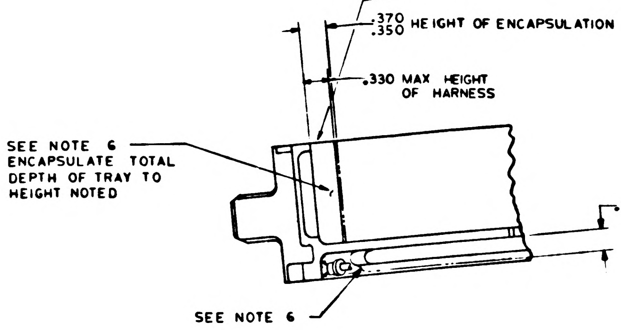
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

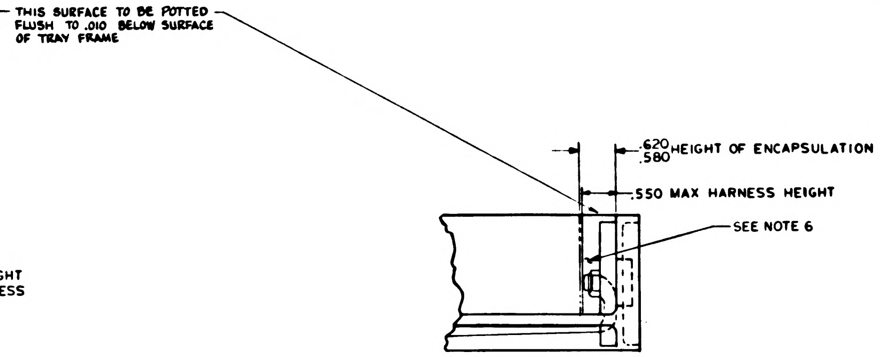
FRAME ASSEMBLY
TRAY 6

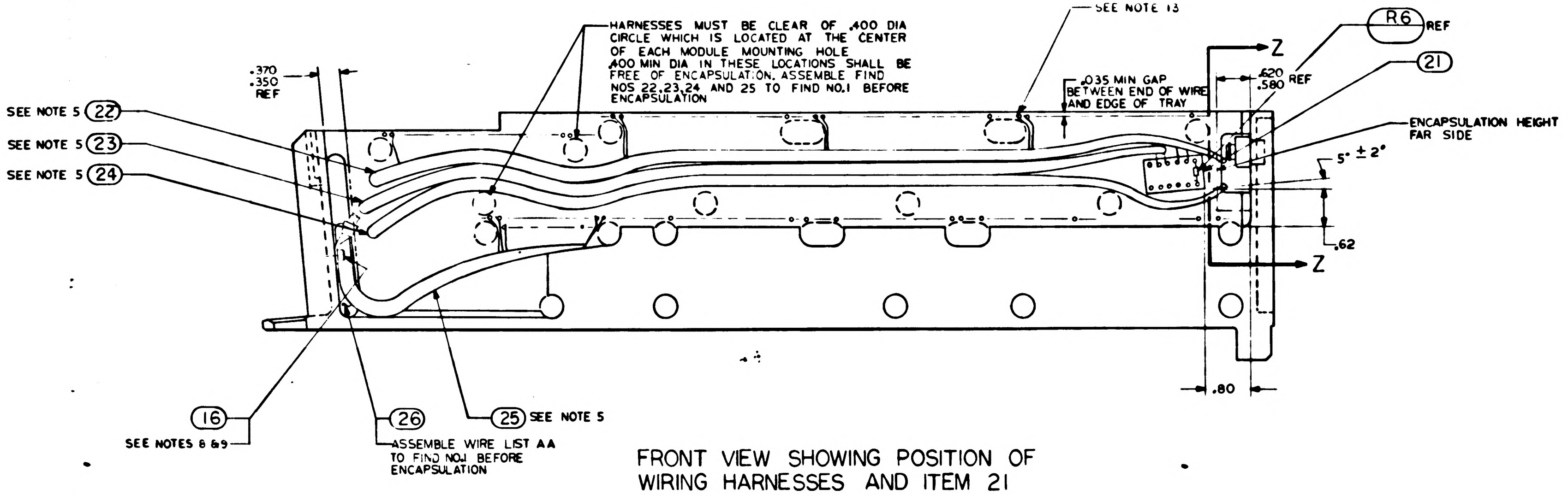
CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO 1007536
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE – [illegible]

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
	B	REPLACES WORD DWG REV A PER TDRR			W/K
C		REVISED PER TDRR 15151		29 Dec 64	WK
D		REVISED PER TDRR 15948	–	65	
E		REVISED PER TDRR 17613		24 MAR 65	RJJ
F		REVISED PER TDRR 18690		4 MAY 65	EF
G		REVISED PER TDRR 18691		7 MAY 65	JJJ EF

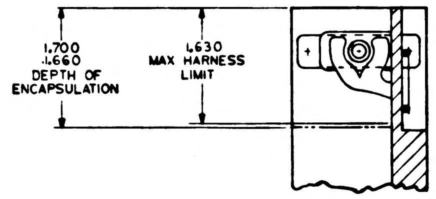

.370
.350 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.620
.580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS HEIGHT
SEE NOTE 6


HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE .400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS 22,23,24 AND 25 TO FIND NO.1 BEFORE ENCAPSULATION
SEE NOTE 13
R6 REF
21
Z
.370
.350
REF
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.620
.580 REF
ENCAPSULATION HEIGHT FAR SIDE
5° ±2°
.62
Z
.80
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
16
SEE NOTES 8 & 9
26
ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION
25 SEE NOTE 5

FRONT VIEW SHOWING POSITION OF
WIRING HARNESSES AND ITEM 21

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 10


1.700
1.660
DEPTH OF ENCAPSULATION
1.630
MAX HARNESS LIMIT

PARTIAL SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS — DECIMALS XX ±.02 ANGLES ±—
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497

DRAWN R.J. Fay DATE 1 OCT. 64
CHECKED 8 OCT 64
APPROVAL 14 OCT 64
APPROVAL 11-2-64
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

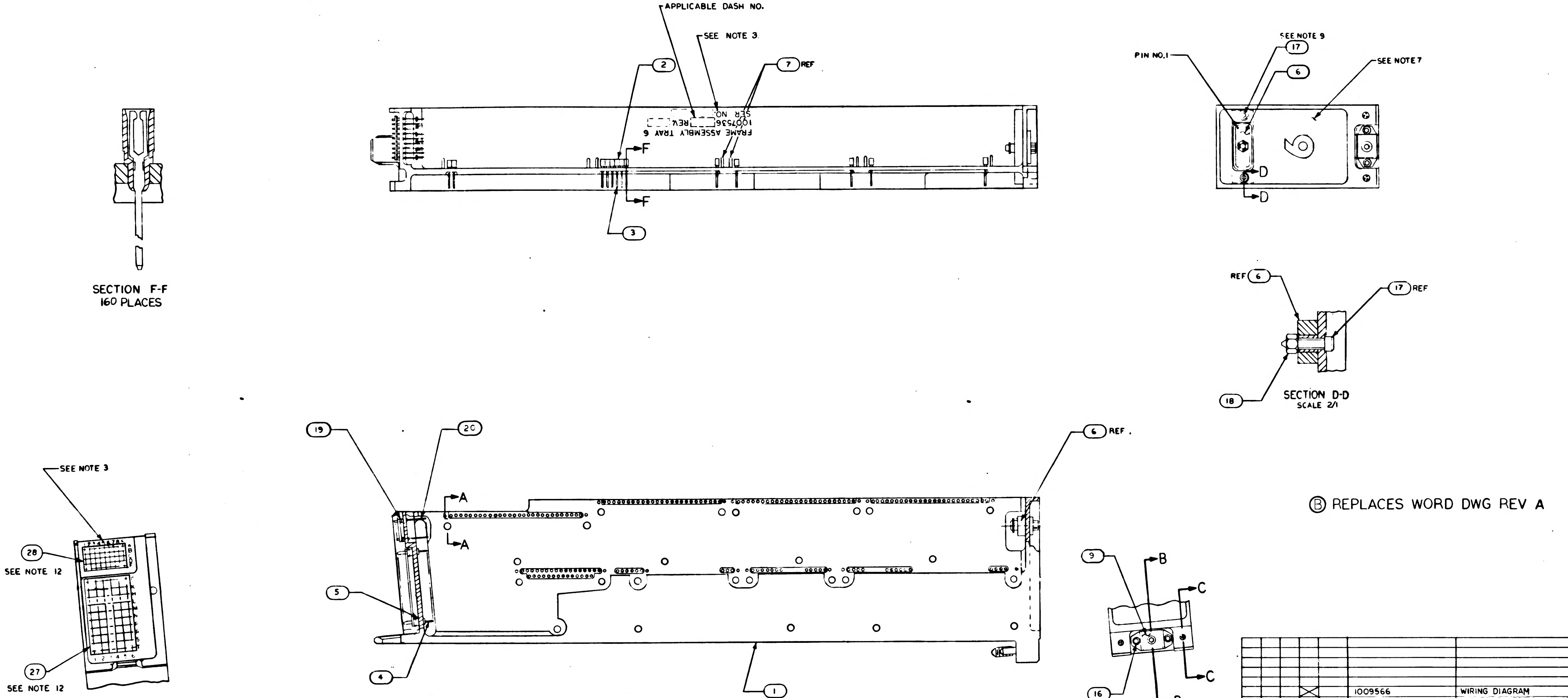
FRAME ASSEMBLY
TRAY 6

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO 1007536
SCALE 1/1
WT
SHEET 2 OF 2

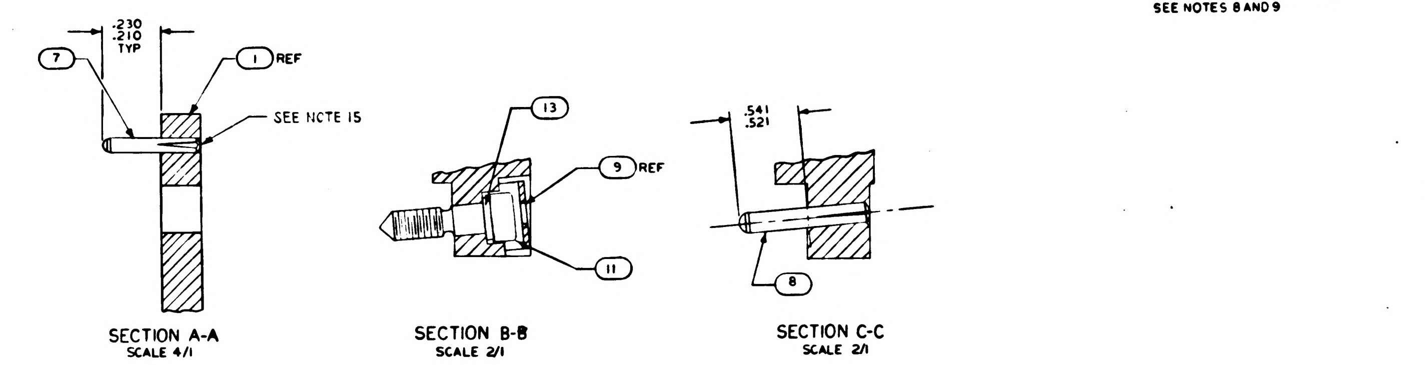
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES WORD DWG REV A PER TDRR 3		
C	REVISED PER TDRR 15151	29 Dec 64	
D	REVISED PER TDRR 15948	FEB 65	
E	REVISED PER TDRR 17613	24 MAR 65	RJJ
F	REVISED PER TDRR 18690	[illegible]	JT
G	REVISED PER TDRR 18691	7 MAY 65	JJ
H	REVISED PER TDRR 18695	11 MAY 65	A.N.



Ⓑ REPLACES WORD DWG REV A



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4, 5, 19 AND 20 PER ND 1002136
3. MARK PER ND 1002019 (BLACK) .140/.100 HIGH AND SERIALIZE PER ND 1002023.
4. BOND FIND NO. 21 TO FIND NO. 1 PER ND 1002004 USING FLEXIBLE FORMULATION PER NASA DRAWING 1010657 AND NASA DRAWING 1010636
5. BOND FIND NOS. 22, 23, 24, 25, AND 26 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A OR B USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
8. COAT THREADS OF FIND NO. 16 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
9. MOUNTING TORQUE FOR FIND NUMBERS 16 AND 17 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
10. PROCURE PER PS 1007146
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. BOND FIND NOS. 27 AND 28 TO FIND NOS. 5 AND 19 PER ND 1002237
13. WORKMANSHIP REQUIREMENTS TO BE IN ACCORDANCE WITH ND 1002069
14. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.
15. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.

LIST OF MATERIALS

QUANTITY REQUIRED			011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
			╳		1009566	WIRING DIAGRAM	REF
			1		1008553	GASKET CONNECTOR MIN TRAY	28
			1		1008552	GASKET CONNECTOR TRAY	27
			1		1008610	WIRE LIST A A	26
			1		1008604	WIRING HARNESS D	25
			1		1008603	WIRING HARNESS C	24
			1		1008602	WIRING HARNESS B	23
			1		1008601	WIRING HARNESS A	22
			1		1007110	BUFFER RESISTORS ASSEMBLY	21
			45		1006782-2	CONTACT, WRAPOST, MALE MIN	20
			45		1006775	INSULATOR, WRAPOST, MALE MIN	19
			2		MS21045 C 04	NUT, SELF-LOCKING HEX	18
			2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
			3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
			~~50~~		~~1004206~~	~~WASHER, THRUST~~	15
			~~25~~		~~MS171433~~	~~PIN, SPRING~~	14
			1		1008099-2	WASHER,	13
			~~25~~		~~1004207~~	~~DRIVE CYLINDER~~	12
			1		1008098	SCREW, SOCKET HEAD	11
			~~25~~		~~1008172~~	~~SCREW, JACK~~	10
			1		1001317	RETAINER, JACK SCREW	9
			2		1010620-5	PIN, GUIDE	8
			16		M[illegible]4	PIN, GUIDE	7
			1		1010821-1	CONNECTOR, RECEPTACLE	6
			60		1010383-1	INSULATOR, WRAPOST MALE	5
			60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
			160		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
			160		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
			1		1008526	FRAME	1

NEXT ASSY	USED ON	APPLICABLE DASH NO
1007576		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —   DECIMALS ±.02   ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN R J Fox   DATE OCT 64
CHECKED [illegible]
APPROVAL [illegible] 18 OCT 64
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

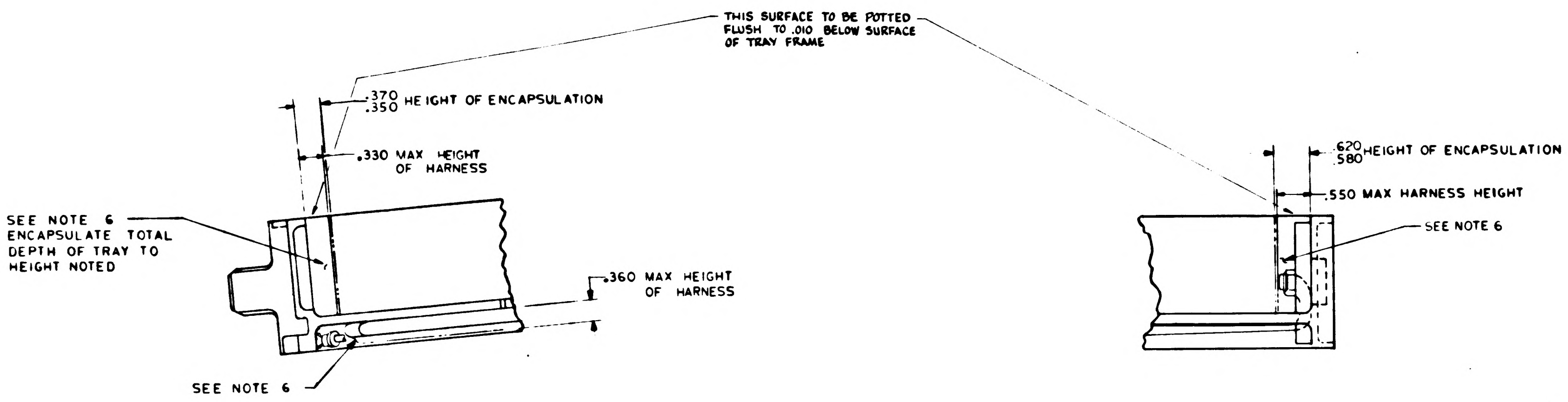
FRAME ASSEMBLY
TRAY 6

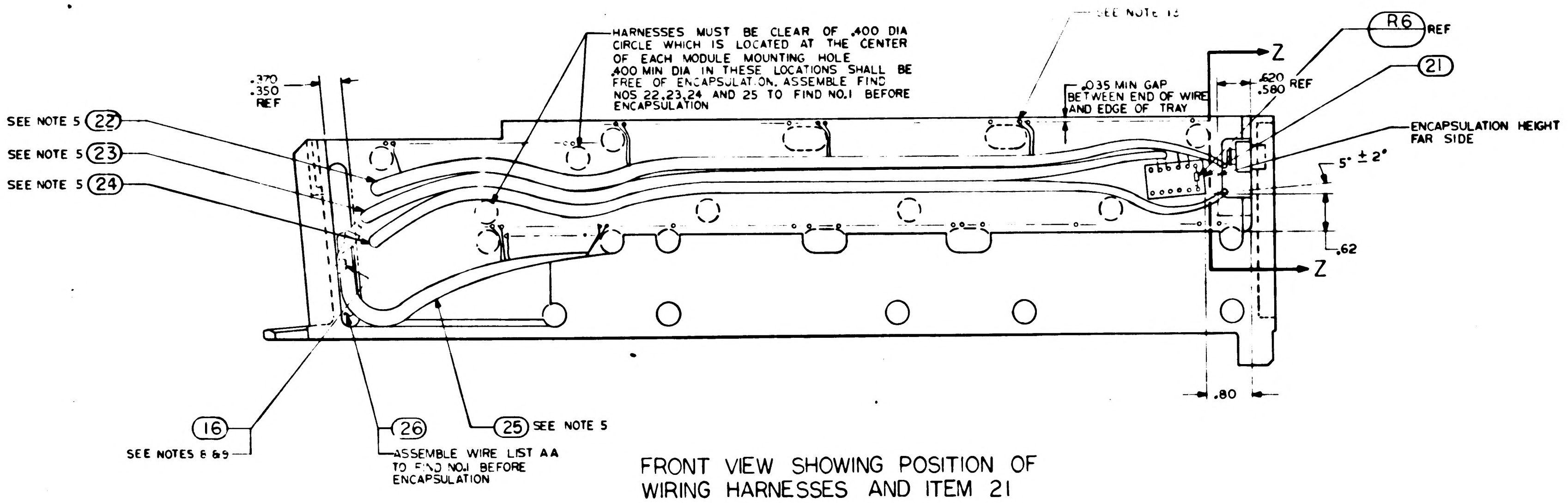
CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007536
SCALE 1/1
WT
SHEET 1 OF 2

1007536 H

[illegible]

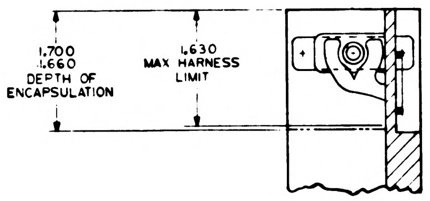
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
	B	REPLACES WORD DWG REV A PER TDRR			
		REVISED PER TDRR [illegible]		[illegible]	
		REVISED PER TDRR 15948	—	65	
E		REVISED PER TDRR 17613		24 MAR 65	RJJ
F		REVISED PER TDRR 18690		4 MAY 65	
G		REVISED PER TDRR 18691		7 MAY 65	
H		REVISED PER TDRR 18695		11 MAY 65	


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.370 .350 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 6 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS HEIGHT
SEE NOTE 6


HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE .400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS 22,23,24 AND 25 TO FIND NO.1 BEFORE ENCAPSULATION
SEE NOTE 13
R6 REF
21
Z
Z
.370 .350 REF
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.620 .580 REF
ENCAPSULATION HEIGHT FAR SIDE
5° ± 2°
.62
.80
16
SEE NOTES 8 & 9
26
ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION
25 SEE NOTE 5

FRONT VIEW SHOWING POSITION OF WIRING HARNESSES AND ITEM 21

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 10


1.700 1.660 DEPTH OF ENCAPSULATION
1.630 MAX HARNESS LIMIT

PARTIAL SECTION Z-Z

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS — DECIMALS XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN R.J. Fay DATE 1 OCT. 64
CHECKED 8 OCT 64
APPROVAL 14 OCT 64
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

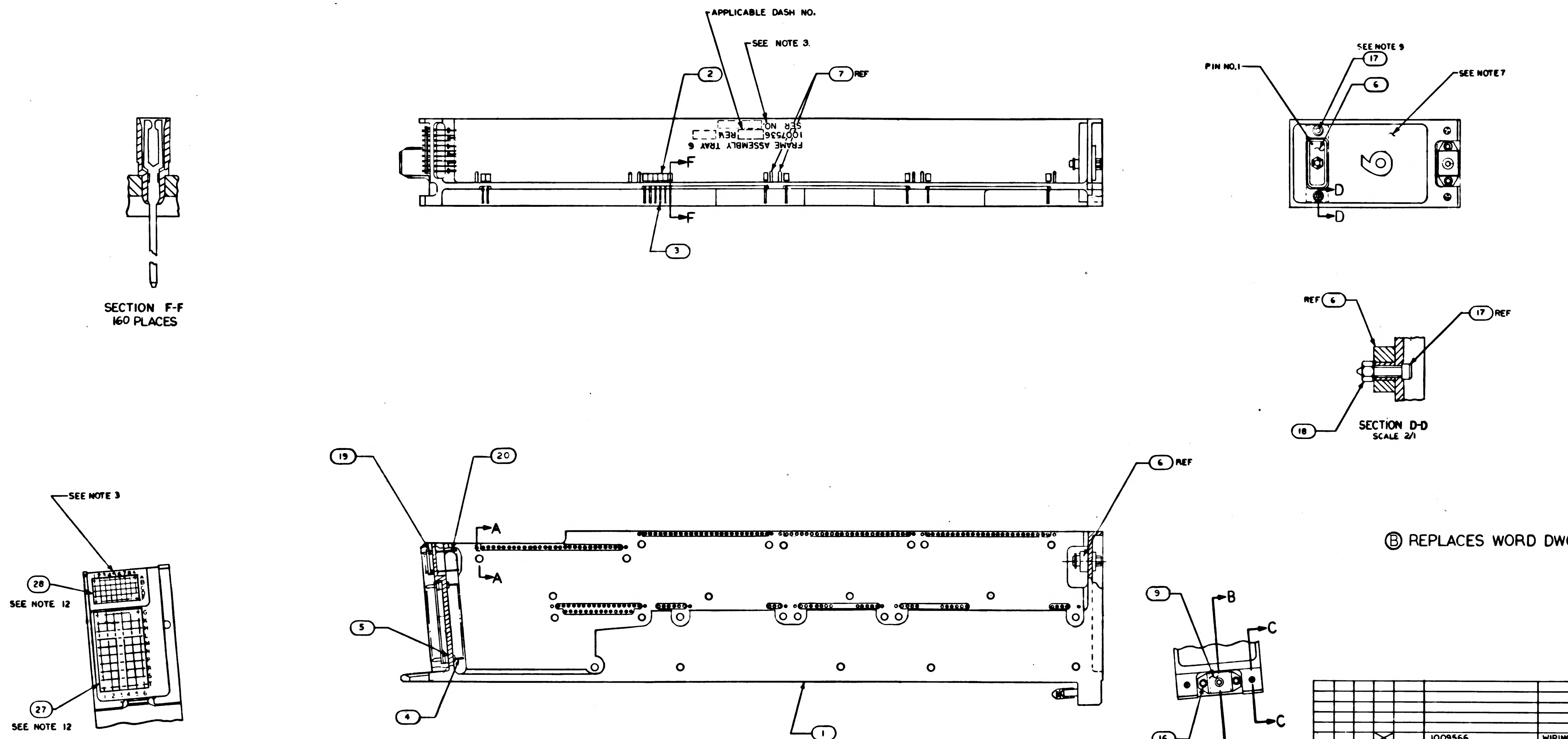
FRAME ASSEMBLY
TRAY 6

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007536
SCALE 1/1
WT
SHEET 2 OF 2

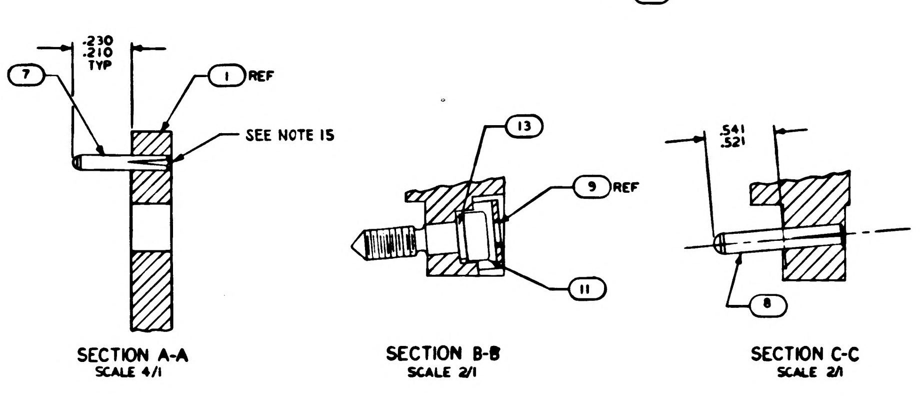
1007536 H

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA [illegible]

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES WORD DWG REV A PER TDRR [illegible]		
C	PEVISED PER TDRR 15151	[illegible] 64	
D	REVISED PER TDRR 15948	FEB 65	JJJ
E	REVISED PER TDRR 17615	24 MAR 65	RJJ
F	REVISED PER TDRR 18[illegible]	[illegible]	
G	REVISED PER TDRR 1869[illegible]	7 MAY 65	JJJ
H	REVISED PER TDRR 18695	11 MAY 65	AN
J	REVISED PER TDRR 20785	[illegible] JUL	



Ⓑ REPLACES WORD DWG REV A



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE FIND NUMBERS 2, 3, 4, 5, 19 AND 20 PER ND1002136.
3. MARK PER ND1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND1002023.
4. BOND FIND NO.21 TO FIND NO.1 PER ND1002004 USING FLEXIBLE FORMULATION PER NASA DRAWING 1010657 AND NASA DRAWING 1010686.
5. BOND FIND NUMBERS 22, 23, 24, 25, AND 26 TO FIND NO.1 PER ND 1002004 TYPE I AS NECESSARY.
6. ENCAPSULATE PER ND1002236, SECTION 3.6. CURE CYCLE A OR B USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL BUT NOT EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
8. COAT THREADS OF FIND NO.16 DURING ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER).
9. MOUNTING TORQUE FOR FIND NUMBERS 16 AND 17 TO FIND NO.1 TO BE 5.0/5.5 IN. LB.
10. PROCURE PER PS1007146.
11. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINTS.
12. BOND FIND NUMBERS 27 AND 28 TO FIND NUMBERS 5 AND 19 PER ND [illegible]2237.
13. WORKMANSHIP REQUIREMENTS TO BE IN ACCORDANCE WITH ND1002069.
14. [illegible] 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A FORMULATION CONSISTING OF 40 PARTS BY WT. [illegible]0959-1, 100 PARTS BY WT. 1010959-2, AND 7 PARTS BY WT. 1006277 AND CURE [illegible] ROOM TEMPERATURE FOR THREE HOURS OR ONE HOUR AT 140°F. LIMITED AMOUNT ALLOWED TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND1002004, TYPE I.
15. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.

			╳		1009566	WIRING DIAGRAM	REF
			1		1008553	GASKET CONNECTOR MIN TRAY	28
			1		1008552	GASKET CONNECTOR TRAY	27
			1		1008610	WIRE LIST A A	26
			1		1008604	WIRING HARNESS D	25
			1		1008603	WIRING HARNESS C	24
			1		1008602	WIRING HARNESS B	23
			1		1008601	WIRING HARNESS A	22
			1		1007110	BUFFER RESISTORS ASSEMBLY	21
			45		1006782-2	CONTACT, WRAPOST, MALE MIN	20
			45		1006775	INSULATOR, WRAPOST, MALE MIN	19
			2		MS21045 C 04	NUT, SELF-LOCKING HEX	18
			2		MS16995-11	SCREW, CAP, SOCKET HEAD	17
			3		MS16995-10	SCREW, CAP, SOCKET HEAD	16
			~~50~~		~~1004206~~	~~WASHER, THRUST~~	15
			~~25~~		~~MS171433~~	~~PIN, SPRING~~	14
			1		1008099-2	WASHER,	13
			~~26~~		~~1004207~~	~~DRIVE CYLINDER~~	12
			1		1008098	SCREW, SOCKET HEAD	11
			~~26~~		~~1008172~~	~~SCREW, JACK~~	10
			1		1001317	RETAINER, JACK SCREW	9
			2		1010620-5	PIN, GUIDE	8
			16		MS16556-604	PIN, GUIDE	7
			1		1010821-1	CONNECTOR, RECEPTACLE	6
			60		1010383-1	INSULATOR, WRAPOST MALE	5
			60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
			160		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
			160		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
			1		1008526	FRAME	1
			011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
QUANTITY REQUIRED					LIST OF MATERIALS		

1007576		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN R. J. Fox DATE OCT. 64
CHECKED 8 OCT 64
APPROVAL 14 OCT 64
APPROVAL 11-2-64
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 6

CODE IDENT NO. 80230 | SIZE E | NASA DRAWING NO 1007536
SCALE 1/1 | WT | SHEET 1 OF 2

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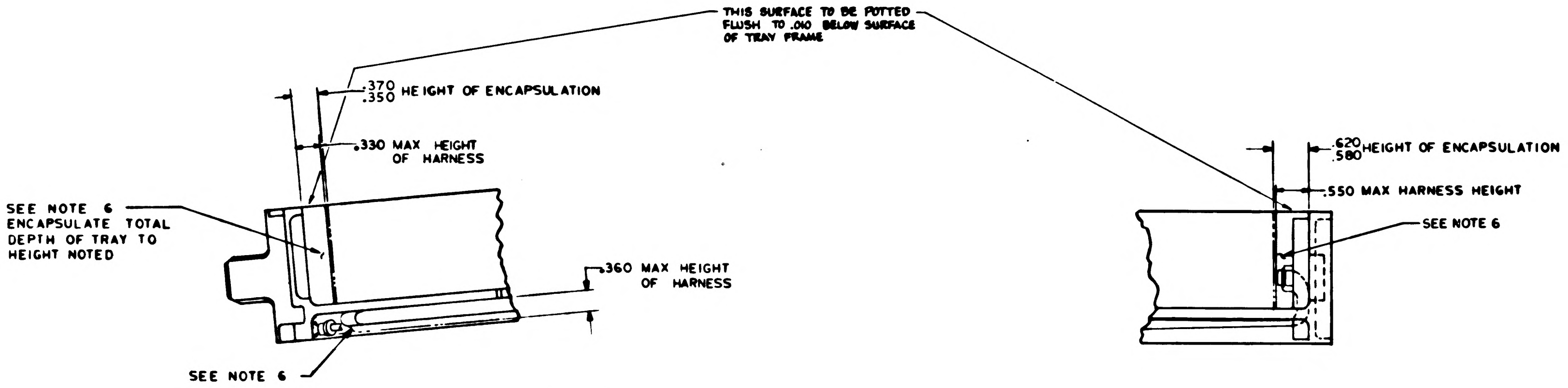
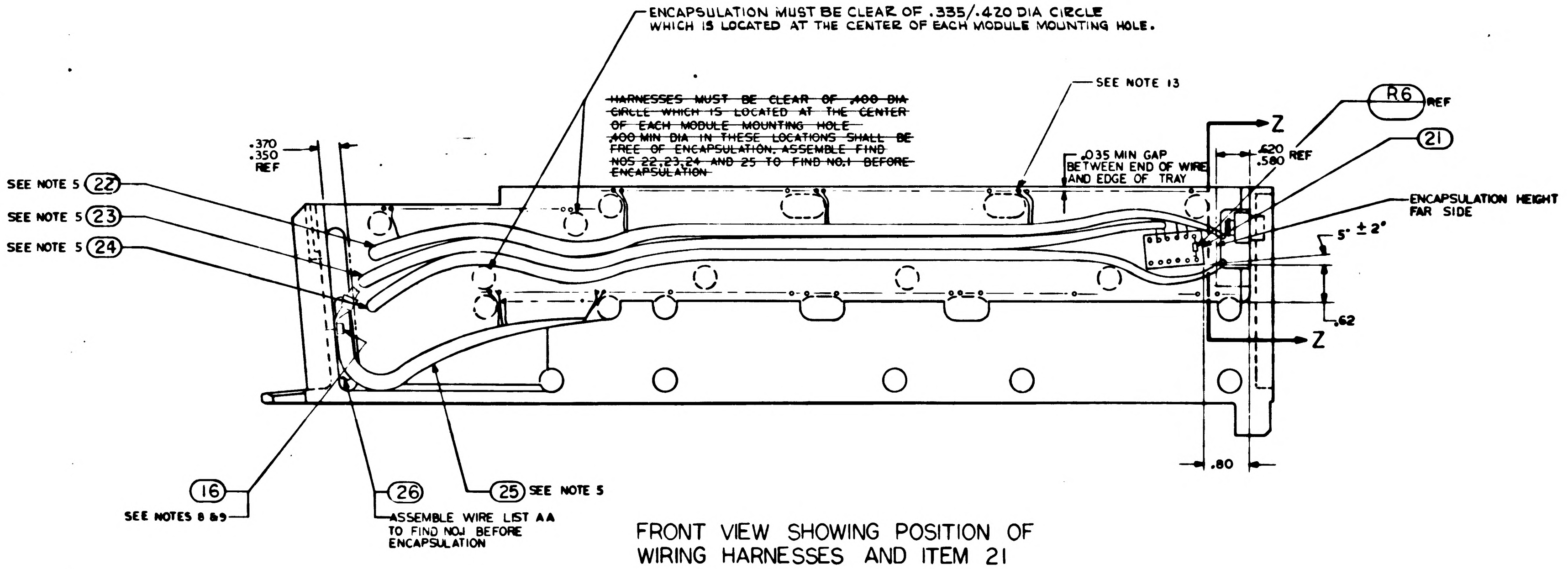
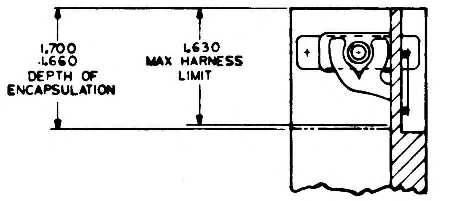
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
	B	REPLACES WORD DWG REV A PER TDRR			[illegible]
C		REVISED PER TDRR 15151		[illegible]	[illegible]
D		REVISED PER TDRR 15948	–	65	[illegible]
E		REVISED PER TDRR 17613		24 MAR 65	[illegible]
F		REVISED PER TDRR 18690		[illegible] 65	[illegible]
G		REVISED PER TDRR 18691		7 MAY 65	JJ
H		REVISED PER TDRR 18695		11 MAY 65	[illegible]
J		REVISED PER TDRR 20785		22 [illegible] 65	[illegible]


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.370 .350 HEIGHT OF ENCAPSULATION
.330 MAX HEIGHT OF HARNESS
SEE NOTE 6 ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6
.620 .580 HEIGHT OF ENCAPSULATION
.550 MAX HARNESS HEIGHT
SEE NOTE 6


ENCAPSULATION MUST BE CLEAR OF .335/.420 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
~~HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE .400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS 22,23,24 AND 25 TO FIND NO.1 BEFORE ENCAPSULATION~~
SEE NOTE 13
R6 REF
21
Z
.620 .580 REF
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
ENCAPSULATION HEIGHT FAR SIDE
5° ± 2°
.62
Z
.80
.370 .350 REF
SEE NOTE 5 22
SEE NOTE 5 23
SEE NOTE 5 24
16
SEE NOTES 8 & 9
26
ASSEMBLE WIRE LIST AA TO FIND NO.1 BEFORE ENCAPSULATION
25 SEE NOTE 5

FRONT VIEW SHOWING POSITION OF
WIRING HARNESSES AND ITEM 21

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 10


1.700
1.660
DEPTH OF ENCAPSULATION
1.630
MAX HARNESS LIMIT

PARTIAL SECTION Z-Z

1007536

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
LIST OF MATERIALS			

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS — DECIMALS XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
Cambridge Mass
Contract NAS 9-497
DRAWN R J Fay DATE OCT. 64
CHECKED [illegible] 8 OCT 64
APPROVAL [illegible] 14 OCT 64
APPROVAL [illegible] 11-2-64
NASA APPROVAL [illegible] 11-4-64
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 6

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007536
SCALE 1/1
WT
SHEET 2 OF 2

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1007536

REVISIONS 12031			
SYM	DESCRIPTION	DATE	APPROVAL

DASH NO. .011

PART NO.	DESCRIPTION	REQD.
1008526-001	Frame, Tray 6	1
1006774	Insulator, Wrapost, Female Miniature	160
1006781-2	Contact, Wrapost, Female Miniature	160
1010382-1	Contact, Blade Edge Connector	60
1010383-1	Insulator, Wrapost, Male	60
1010622-1	Connector Receptacle	1
1010620-4	Pin, Guide	16
1010620-5	Pin, Guide	2
1001317	Retainer, Jack Screw	1
1008172	Screw, Jack	25
1008098	Screw, Socket Head	1
1004206	Washer, Thrust	50
1008099-2	Washer	1
1004207	Drive Cylinder	25
MS 16995-10	Screw, Cap, Socket Head	3
MS 16995-11	Screw, Cap, Socket Head	2
MS 21045 C 04	Nut, Self-Locking Hex	2
1006782-2	Contact, Wrapost-Male, Miniature	45
1006775	Insulator, Wrapost-Male, Miniature	45
MS 171433	Pin, Spring	25
1007110	Buffer Resistors Ass'y	1
1008552-001	~~Gasket, Connector~~	1
1008553-001	Gasket, Connector	1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

MASTER

NEXT ASSY	USED ON
1007576	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
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MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN Varon DATE 7/15/64
CHECKED
APPROVAL
APPROVAL D. B. Test 8/24/64
NASA APPROVAL 8/25/64
MIT APPROVAL

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HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 6
(100 SERIES)

CODE IDENT NO. | SIZE C | NASA DRAWING NO. 1007536
SCALE | WT | SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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1007537 | A

(3)

REVISIONS 12031

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 13194	10-6-64	

PART NO.	DESCRIPTION	DASH NO. 011 REQD.	DASH NO. 021
1008527	Frame Tray 7	1	1
1006774	Insulator, Wrapost, Female Miniature	143	143
1006781-2	Contact, Wrapost, Female Miniature	143	143
1010382-1	Contact, Blade Edge Connector	60	60
1010383-1	Insulator, Wrapost, Male	60	60
1010622-1	Connector Receptacle	1	1
1010622-2	Connector Receptacle	1	1
1010620-4	Pin, Guide	12	12
1010620-5	Pin, Guide	2	2
1001317	Retainer, Jack Screw	1	1
1008172	Screw, Jack	19	19
1008098	Screw, Socket Head	1	1
1004206	Washer, Thrust	38	38
1008099-2	Washer	1	1
1007092	Assembly, Buffer Resistor Module	1	1
MS 16995-10	Screw, Cap, Socket Head	3	3
MS 16995-11	Screw, Cap, Socket Head	4	4
MS 21045 C 04	Nut, Self-Locking Hex	4	4
1006782-2	Contact, Wrapost-Male, Miniature	45	45
1006775	Insulator, Wrapost-Male, Miniature	45	45
MS 171433	Pin Spring	19	19
1004207	Drive Cylinder	19	19
1008552	Gasket, Connector	1	1
1008553	Gasket, Connector	1	1
	Harness (50 Series)	-	1
	Harness (100 Series)	1	-

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007577	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN Kanan DATE 7/15/64
CHECKED
APPROVAL
APPROVAL 8/24/64
NASA APPROVAL 8/25/64
MIT APPROVAL 2 Aug 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 7

CODE IDENT NO. | SIZE C | NASA DRAWING NO. 1007537
SCALE | WT | SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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1007537 B

REVISIONS 12031

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 13194	10-6-64	WK
B	REPLACED BY CONFIGURATION DWG REV C PER TDRR 13939	11/4/64	WK

PART NO.	DESCRIPTION	DASH NO. 011 REQD.	DASH NO. 021
1008527	Frame Tray 7	1	1
1006774	Insulator, Wrapost, Female Miniature	143	143
1006781-2	Contact, Wrapost, Female Miniature	143	143
1010382-1	Contact, Blade Edge Connector	60	60
1010383-1	Insulator, Wrapost, Male	60	60
1010622-1	Connector Receptacle	1	1
1010622-2	Connector Receptacle	1	1
1010620-4	Pin, Guide	12	12
1010620-5	Pin, Guide	2	2
1001317	Retainer, Jack Screw	1	1
1008172	Screw, Jack	19	19
1008098	Screw, Socket Head	1	1
1004206	Washer, Thrust	38	38
1008099-2	Washer	1	1
1007092	Assembly, Buffer Resistor Module	1	1
MS 16995-10	Screw, Cap, Socket Head	3	3
MS 16995-11	Screw, Cap, Socket Head	4	4
MS 21045 C 04	Nut, Self-Locking Hex	4	4
1006782-2	Contact, Wrapost-Male, Miniature	45	45
1006775	Insulator, Wrapost-Male, Miniature	45	45
MS 171433	Pin Spring	19	19
1004207	Drive Cylinder	19	19
1008552	Gasket, Connector	1	1
1008553	Gasket, Connector	1	1
	Harness (50 Series)	-	1
	Harness (100 Series)	1	-

Ⓑ REPLACED BY CONFIGURATION
DWG REV C

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

NEXT ASSY	USED ON
1007577	

APPLICATION

MASTER

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN Karen DATE 7/15/64
CHECKED
APPROVAL
APPROVAL D. A. Test 8/24/64
NASA APPROVAL 8/25/64
MIT APPROVAL 2 Aug 64

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HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 7

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007537
SCALE
WT
SHEET 1 OF 1

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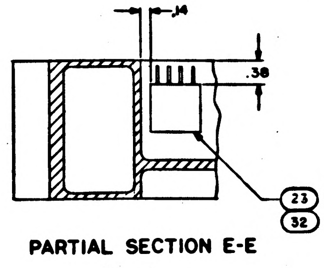
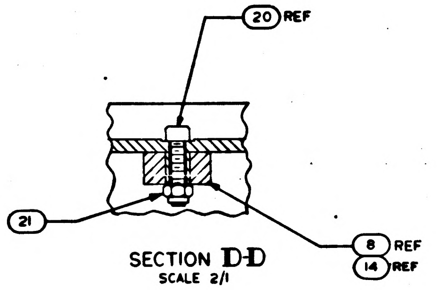
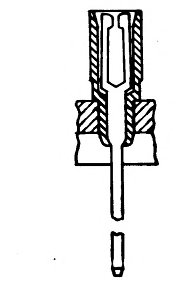
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939	11/6/64	



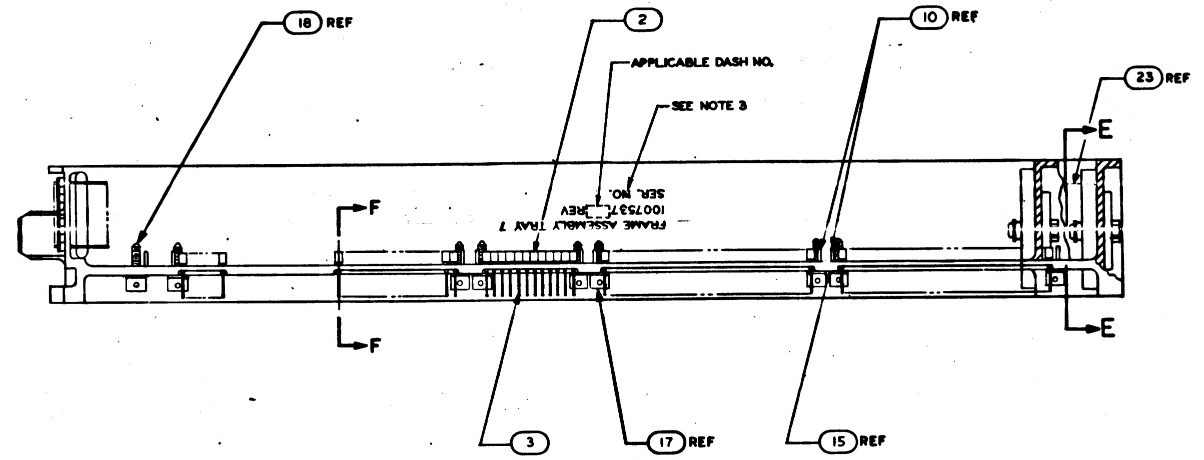
PARTIAL SECTION E-E

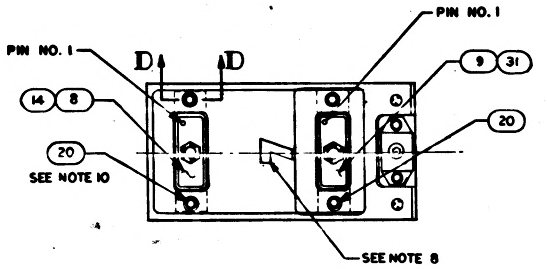


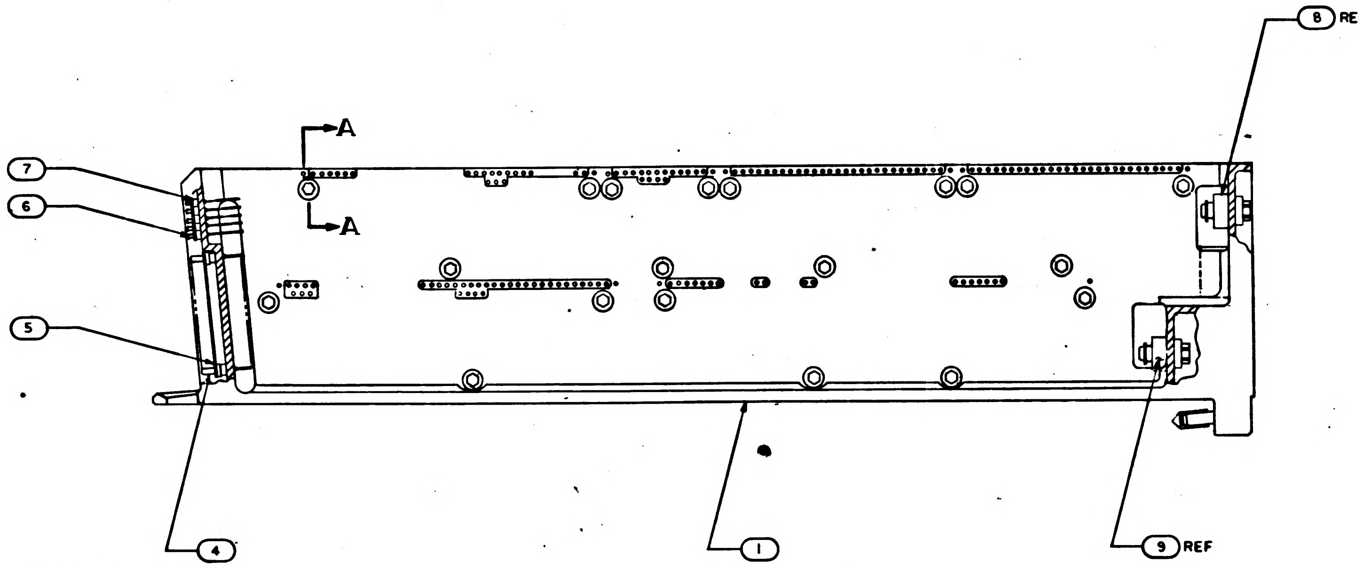
SECTION D-D
SCALE 2/1

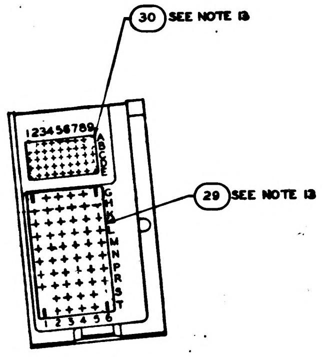


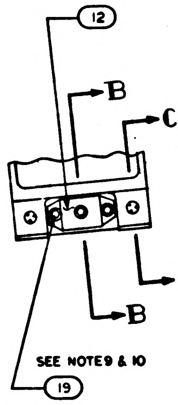
PARTIAL SECTION F-F
143 PLACES





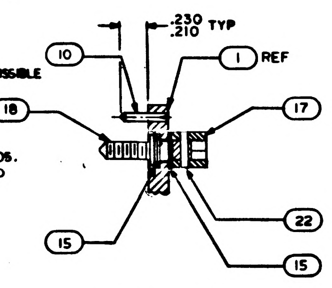




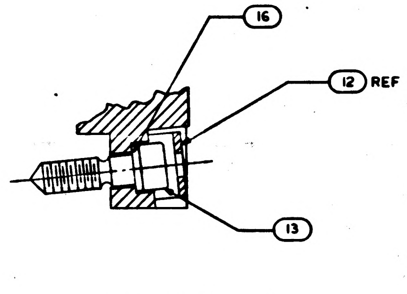


Ⓒ REPLACES WORD DWG REV B

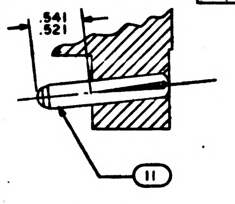
NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. MARK PER ND 1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002025
4. BOND FIND NO. 23 & 32 TO FIND NO. 1 USING FLEXIBLE FORMULATION OF NASA DWG 1010657 AND NASA DWG 1010686
5. BOND FIND NUMBERS 24, 25, 26, 27, AND 28 TO FIND NO. 1 PER ND 1002004. TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 23 & 32
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 19 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NOS. 19 & 20 TO FIND NO. 1 TO BE 5.0-5.5 IN LB
11. ALL NICKEL WIRE HARNESS TERMINATION TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071
ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
~~12. PROCURE PER PS1007147~~
13. BOND FIND NOS. 29 AND 30 TO FIND NOS. 5 AND 7 PER ND 1002237



SECTION A-A
SCALE 2/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A7 E9	45A7J1-35
E10	-2
E11	-1
E12	-14
E13	-7
E14	-20
E15	-27
E22	-22
E23	-38

QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		021	011				
		–	1		1007597-011	BUFFER RESISTOR MODULE ASSY	32
		–	1		1010821-2	CONNECTOR, RECEPTACLE	31
		1	1		1008553	GASKET CONNECTOR MIN. TRAY	30
		1	1		1008552	GASKET CONNECTOR TRAY	29
		–	X		1009567	WIRING DIAGRAM	REF
		X	–		1009557	WIRING DIAGRAM	REF
		1	–		1015758	WIRE LIST A A	28
		1	–		1015757	WIRING HARNESS D	27
		1	–		1015756	WIRING HARNESS C	26
		1	–		1015755	WIRING HARNESS B	25
		1	–		1015754	WIRING HARNESS A	24
		1	–		1007092	BUFFER RESISTOR MODULE ASSY	23
		19	19		MS171433	PIN, SPRING	22
		4	4		MS 21045 C 04	NUT, SELF-LOCKING HEX	21
		4	4		MS 16995-11	SCREW, CAP, SOCKET HEAD	20
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	19
		19	19		1008172	SCREW, JACK	18
		19	19		1004207	DRIVE CYLINDER	17
		1	1		1008099-2	WASHER	16
		38	38		1004206	WASHER THRUST	15
		–	1		1010821-1	CONNECTOR, RECEPTACLE	14
		1	1		1008098	SCREW, SOCKET HEAD	13
		1	1		1001317	RETAINER, JACK SCREW	12
		2	2		1010620-5	PIN, GUIDE	11
		12	12		1010620-4	PIN, GUIDE	10
		1	–		1010622-2	CONNECTOR, RECEPTACLE	9
		1	–		1010622-1	CONNECTOR, RECEPTACLE	8
		45	45		1006775	INSULATOR, WRAPOST, MALE MIN	7
		45	45		1006782-2	CONTACT, WRAPOST, MALE MIN	6
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	5
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		143	143		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		143	143		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	1		1008527	FRAME	1

LIST OF MATERIALS

1007577		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ±.02
ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

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INSTRUMENTATION LAB
CAMBRIDGE, MASS.
Contract NAS 9-497
DRAWN J. Jaworski DATE 30 SEP 64
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
APPROVAL 10-20-64
NASA APPROVAL 11-4-64
MIT APPROVAL 4 Nov 64

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HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 7

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007537
SCALE 1/1
WT
SHEET 1 OF 2

C 1007537

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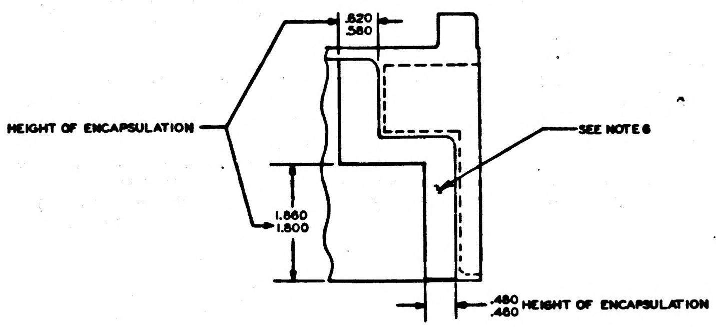
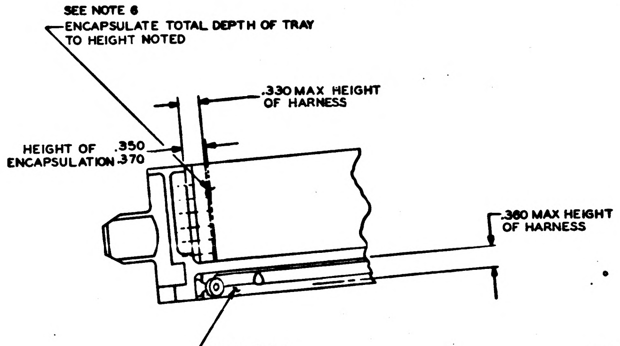
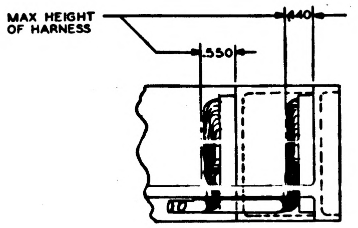
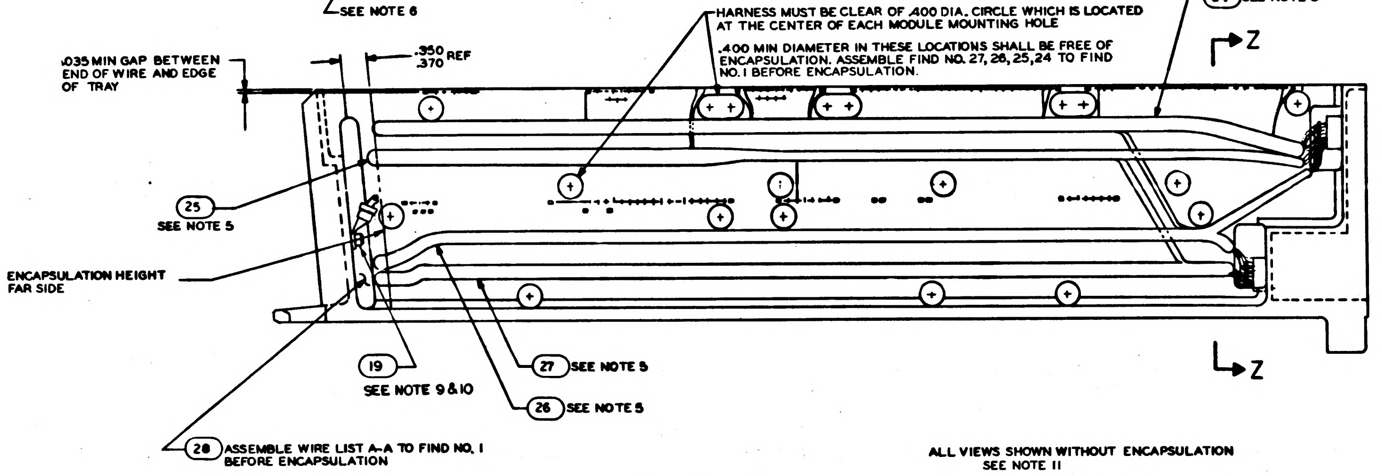
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		REPLACES WORD DWG REV B PER TDRR 13939		11/4/64	WK


.620
.580
HEIGHT OF ENCAPSULATION
SEE NOTE 6
1.860
1.800
.480
.460 HEIGHT OF ENCAPSULATION

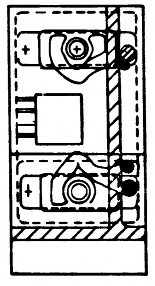

SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.330 MAX HEIGHT OF HARNESS
HEIGHT OF ENCAPSULATION .350 .370
.380 MAX HEIGHT OF HARNESS

SEE NOTE 6


MAX HEIGHT OF HARNESS
.440
.550


HARNESS MUST BE CLEAR OF .400 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO. 27, 26, 25, 24 TO FIND NO. 1 BEFORE ENCAPSULATION.
24 SEE NOTE 5
Z
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350
.370 REF
25
SEE NOTE 5
ENCAPSULATION HEIGHT FAR SIDE
19
SEE NOTE 9 & 10
27 SEE NOTE 5
26 SEE NOTE 5
28 ASSEMBLE WIRE LIST A-A TO FIND NO. 1 BEFORE ENCAPSULATION
Z

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



SECTION Z-Z

MASTER

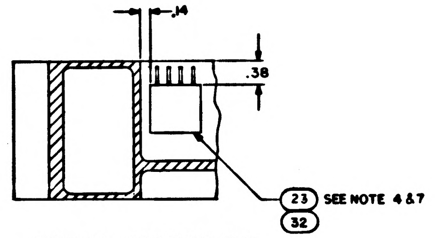
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ± DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN 30 SEP 64 DATE CHECKED 6 OCT 64 APPROVAL 8 OCT 64 M.I.T. APPROVAL	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	FRAME ASSEMBLY TRAY 7
MATERIAL — CONTRACT NAS 9-497	NASA APPROVAL 11-4-64 MIT APPROVAL	CODE IDENT NO. SCALE FULL	SIZE E 1007537 SHEET 2 OF 2

1007537 D

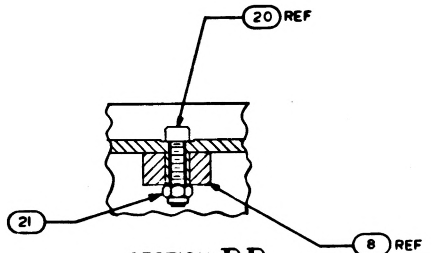
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

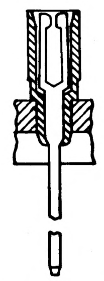
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939	11/4/64	
D	REV PER TDRR 15156	23 Dec 64	



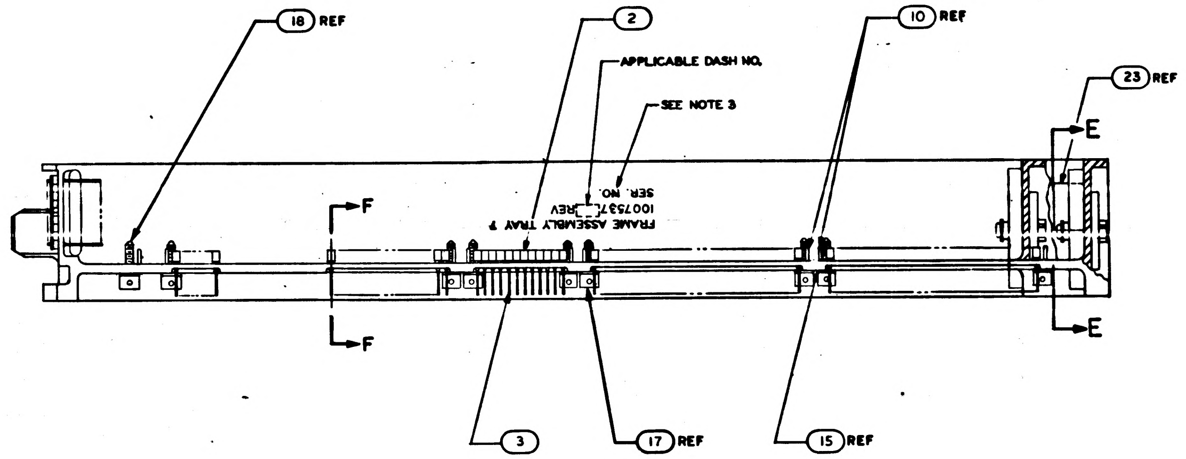
PARTIAL SECTION E-E

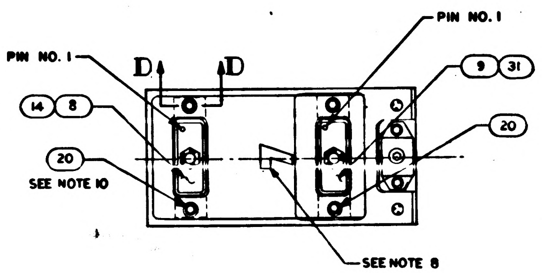


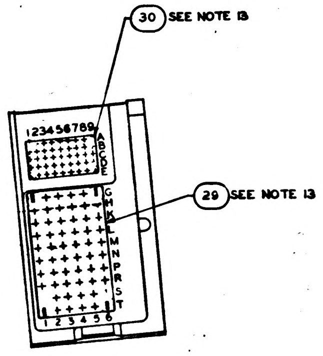
SECTION D-D
SCALE 2/1

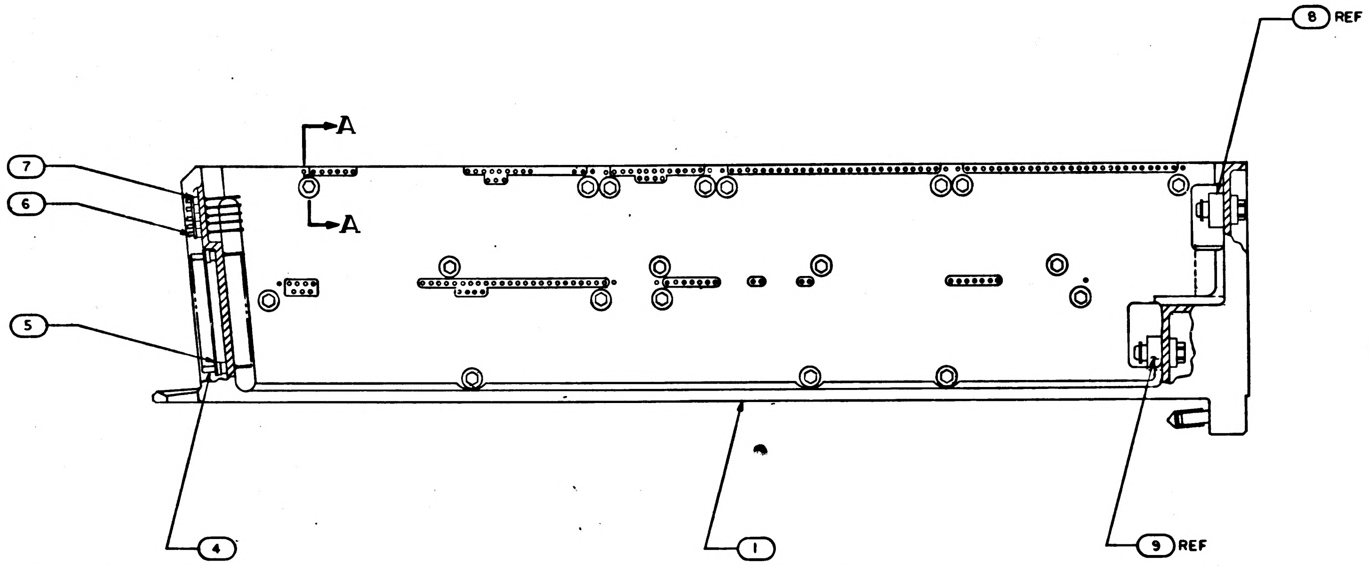


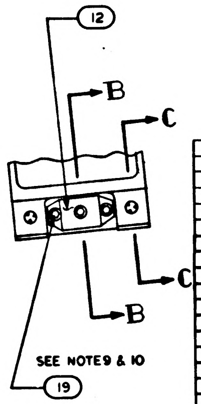
PARTIAL SECTION F-F
143 PLACES







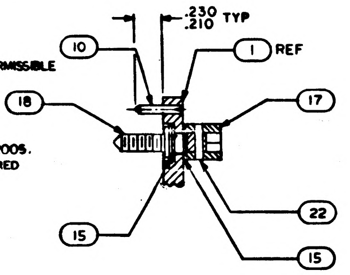




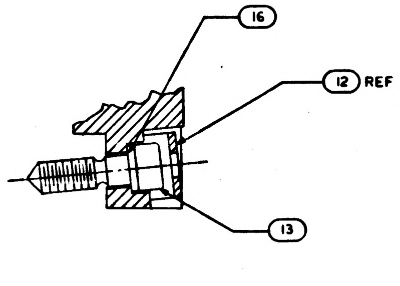
Ⓒ REPLACES WORD DWG REV B

NOTES:

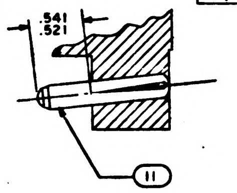
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. MARK PER ND 1002019(BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023
4. BOND FIND NO.23 & 32 TO FIND NO.1 USING FLEXIBLE FORMULATION OF NASA DWG 1010657 AND NASA DWG 1010686
5. BOND FIND NUMBERS 24,25,26,27, AND 28 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO.23 & 32
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 19 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NOS. 19 & 20 TO FIND NO. 1 TO BE 5.0-5.5 IN LB
11. ALL NICKEL WIRE HARNESS TERMINATION TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071
ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. PROCURE PER PS1007147
13. BOND FIND NOS. 29 AND 30 TO FIND NOS. 5 AND 7 PER ND 1002237



SECTION A-A
SCALE 2/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART

FROM	TO
45A7 E 9	45A7J1—35
E 10	—2
E 11	—1
E 12	—14
E 13	—7
E 14	—20
E 15	—27
E 22	—22
E 23	—38

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		—	1		1008633	WIRE LIST AA	37
		—	1		1008632	WIRING HARNESS D	36
		—	1		1008631	WIRING HARNESS C	35
		—	1		1008630	WIRING HARNESS B	34
		—	1		1008629	WIRING HARNESS A	33
		—	1		1007597-011	BUFFER RESISTOR MODULE ASSY	32
		—	1		1010821-2	CONNECTOR, RECEPTACLE	31
		1	1		1008553	GASKET CONNECTOR MIN. TRAY	30
		1	1		1008552	GASKET CONNECTOR TRAY	29
		—	X		1009567	WIRING DIAGRAM	REF
		X	—		1009557	WIRING DIAGRAM	REF
		1	—		1015758	WIRE LIST AA	28
		1	—		1015757	WIRING HARNESS D	27
		1	—		1015756	WIRING HARNESS C	26
		1	—		1015755	WIRING HARNESS B	25
		1	—		1015754	WIRING HARNESS A	24
		1	—		1007092	BUFFER RESISTOR MODULE ASSY	23
		19	19		MS171433	PIN, SPRING	22
		4	4		MS 21045 C 04	NUT, SELF-LOCKING HEX	21
		4	4		MS 16995-11	SCREW, CAP, SOCKET HEAD	20
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	19
		19	19		1008172	SCREW, JACK	18
		19	19		1004207	DRIVE CYLINDER	17
		1	1		1008099-2	WASHER	16
		38	38		1004206	WASHER THRUST	15
		—	1		1010821-1	CONNECTOR, RECEPTACLE	14
		1	1		1008098	SCREW, SOCKET HEAD	13
		1	1		1001317	RETAINER, JACK SCREW	12
		2	2		1010620-5	PIN, GUIDE	11
		12	12		1010620-4	PIN, GUIDE	10
		1	—		1010622-2	CONNECTOR, RECEPTACLE	9
		1	—		1010622-1	CONNECTOR, RECEPTACLE	8
		45	45		1006775	INSULATOR, WRAPOST, MALE MIN	7
		45	45		1006782-2	CONTACT, WRAPOST, MALE MIN	6
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	5
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		143	143		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		143	143		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	1		1008527	FRAME	1

QUANTITY REQUIRED
LIST OF MATERIALS

1007537 D

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007577		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DWG NO.
DRAWN J. Jannuzzi DATE 30 SEP 64
CHECKED 6 OCT 64
APPROVAL 8 Oct 64
APPROVAL 10-29-64
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

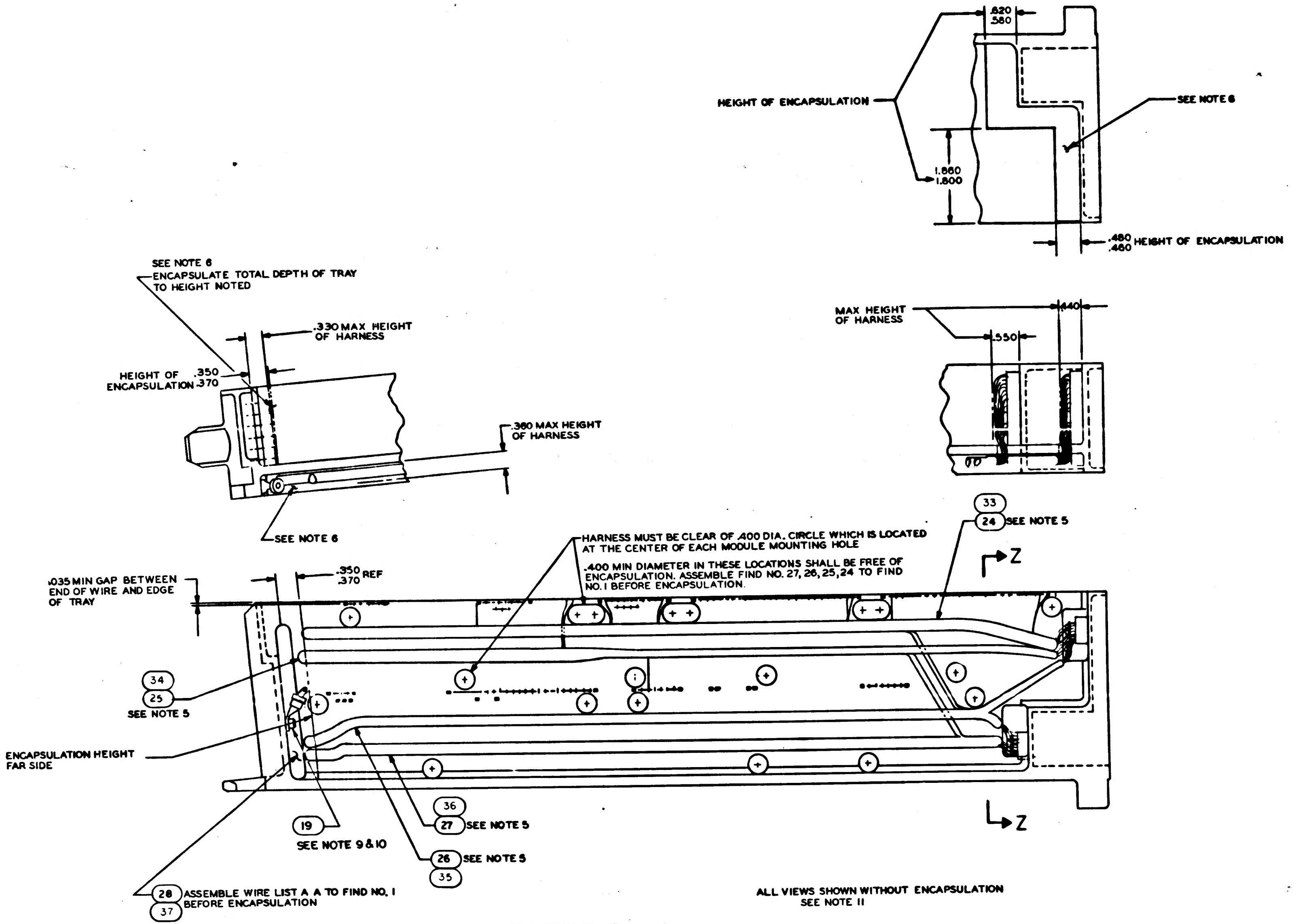
FRAME ASSEMBLY
TRAY 7

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007537
SCALE 1/1
WT
SHEET 1 OF 2

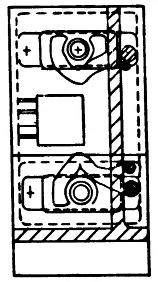
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		REPLACES WORD DWG REV B PER TDRR 13939		1/4/65	WK
D		REV PER TDRR 15156		29 Dec 64	WK


.620
.580
HEIGHT OF ENCAPSULATION
SEE NOTE 6
1.860
1.800
.480
.460 HEIGHT OF ENCAPSULATION
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.330 MAX HEIGHT OF HARNESS
HEIGHT OF ENCAPSULATION .350 .370
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6
MAX HEIGHT OF HARNESS
.440
.550
33
24 SEE NOTE 5
HARNESS MUST BE CLEAR OF .400 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO. 27, 26, 25, 24 TO FIND NO. 1 BEFORE ENCAPSULATION.
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350
.370 REF
Z
34
25
SEE NOTE 5
ENCAPSULATION HEIGHT FAR SIDE
Z
19
SEE NOTE 9 & 10
36
27 SEE NOTE 5
26 SEE NOTE 5
35
28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
37

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



SECTION Z-Z

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + — − DECIMALS + — − ANGLES + — −	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	ACSP PN	
	DRAWN [illegible] DATE 30 SEP 64 CHECKED [illegible] 6 OCT 64 APPROVAL [illegible] 8 OCT 64 APPROVAL	FRAME ASSEMBLY TRAY 7
DO NOT SCALE THIS DRAWING		
MATERIAL —	NASA APPROVAL [illegible]	CODE IDENT NO. SIZE E 1007537
CONTRACT NAS 9-497	MIT APPROVAL [illegible]	SCALE FULL SHEET 2 OF 2

1007537 D

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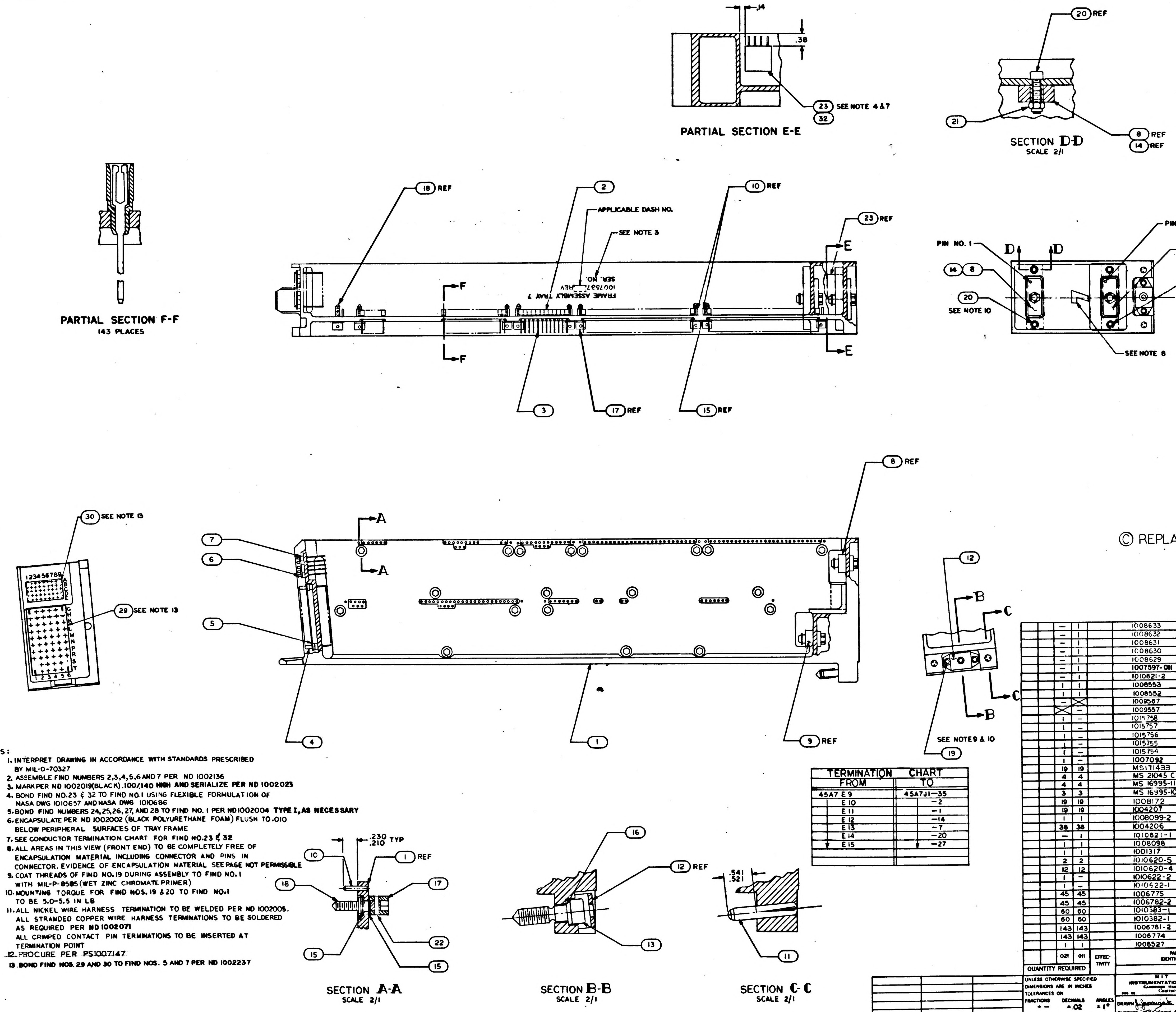
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13739	11/4/64	WK
D	REV PER TDRR 15156	29 Dec 64	FWR
E	REV PER TDRR 15239		


.14
.38
23 SEE NOTE 4 & 7
32
PARTIAL SECTION E-E
20 REF
21
8 REF
14 REF
SECTION D-D
SCALE 2/1
PARTIAL SECTION F-F
143 PLACES
18 REF
2
APPLICABLE DASH NO.
SEE NOTE 3
FRAME ASSEMBLY TRAY 7
1007537-REV
SER. NO.
10 REF
23 REF
F
E
3
17 REF
15 REF
PIN NO. 1
D
14
8
20
SEE NOTE 10
9
31
SEE NOTE 8
8 REF
A
7
6
5
4
1
9 REF
30 SEE NOTE 13
29 SEE NOTE 13
123456789
12
B
C
SEE NOTE 9 & 10
19
© REPLACES WORD DWG REV B
.230
.210 TYP
10
1 REF
18
17
22
15
SECTION A-A
SCALE 2/1
16
12 REF
13
SECTION B-B
SCALE 2/1
.541
.521
11
SECTION C-C
SCALE 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. MARK PER ND 1002019(BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023
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11. ALL NICKEL WIRE HARNESS TERMINATION TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071
    ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. PROCURE PER PS1007147
13. BOND FIND NOS. 29 AND 30 TO FIND NOS. 5 AND 7 PER ND 1002237

TERMINATION CHART	
FROM	TO
45A7 E9	45A7J1—35
E10	-2
E11	-1
E12	-14
E13	-7
E14	-20
E15	-27

		—	1		1008633	WIRE LIST AA	37
		—	1		1008632	WIRING HARNESS D	36
		—	1		1008631	WIRING HARNESS C	35
		—	1		1008630	WIRING HARNESS B	34
		—	1		1008629	WIRING HARNESS A	33
		—	1		1007597-011	BUFFER RESISTOR MODULE ASSY	32
		—	1		1010821-2	CONNECTOR, RECEPTACLE	31
		1	1		1008553	GASKET CONNECTOR MIN. TRAY	30
		1	1		1008552	GASKET CONNECTOR TRAY	29
		—	X		1009567	WIRING DIAGRAM	REF
		X	—		1009557	WIRING DIAGRAM	REF
		1	—		1015758	WIRE LIST AA	28
		1	—		1015757	WIRING HARNESS D	27
		1	—		1015756	WIRING HARNESS C	26
		1	—		1015755	WIRING HARNESS B	25
		1	—		1015754	WIRING HARNESS A	24
		1	—		1007092	BUFFER RESISTOR MODULE ASSY	23
		19	19		MS171433	PIN, SPRING	22
		4	4		MS 21045 C 04	NUT, SELF-LOCKING HEX	21
		4	4		MS 16995-11	SCREW, CAP, SOCKET HEAD	20
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	19
		19	19		1008172	SCREW, JACK	18
		19	19		1004207	DRIVE CYLINDER	17
		1	1		1008099-2	WASHER	16
		38	38		1004206	WASHER THRUST	15
		—	1		1010821-1	CONNECTOR, RECEPTACLE	14
		1	1		1008098	SCREW, SOCKET HEAD	13
		1	1		1001317	RETAINER, JACK SCREW	12
		2	2		1010620-5	PIN, GUIDE	11
		12	12		1010620-4	PIN, GUIDE	10
		1	—		1010622-2	CONNECTOR, RECEPTACLE	9
		1	—		1010622-1	CONNECTOR, RECEPTACLE	8
		45	45		1006775	INSULATOR, WRAPOST, MALE MIN	7
		45	45		1006782-2	CONTACT, WRAPOST, MALE MIN	6
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	5
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		143	143		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		143	143		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	1		1008527	FRAME	1
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
QUANTITY REQUIRED					LIST OF MATERIALS		

1007577		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN J. Januszewski DATE 30 SEP 64
CHECKED 6 OCT 64
APPROVAL R. 1964
APPROVAL 10-29-64
NASA APPROVAL W. J. 11-4-64
MIT APPROVAL 11/4/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

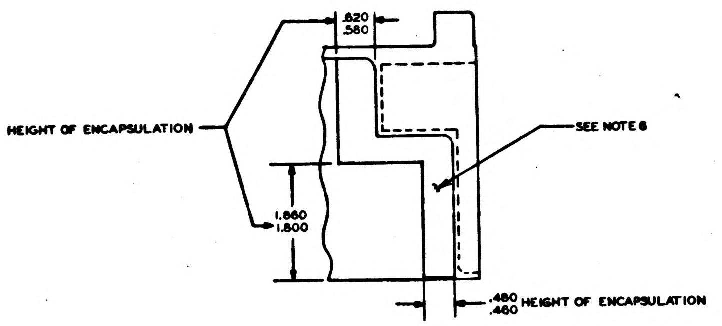
FRAME ASSEMBLY
TRAY 7

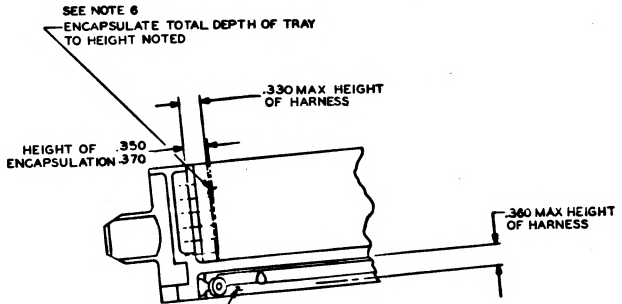
CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007537
SCALE 1/1
WT
SHEET 1 OF 2

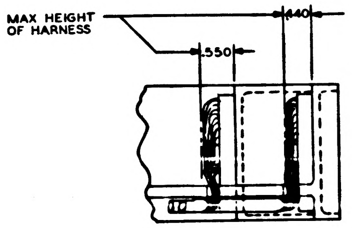
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

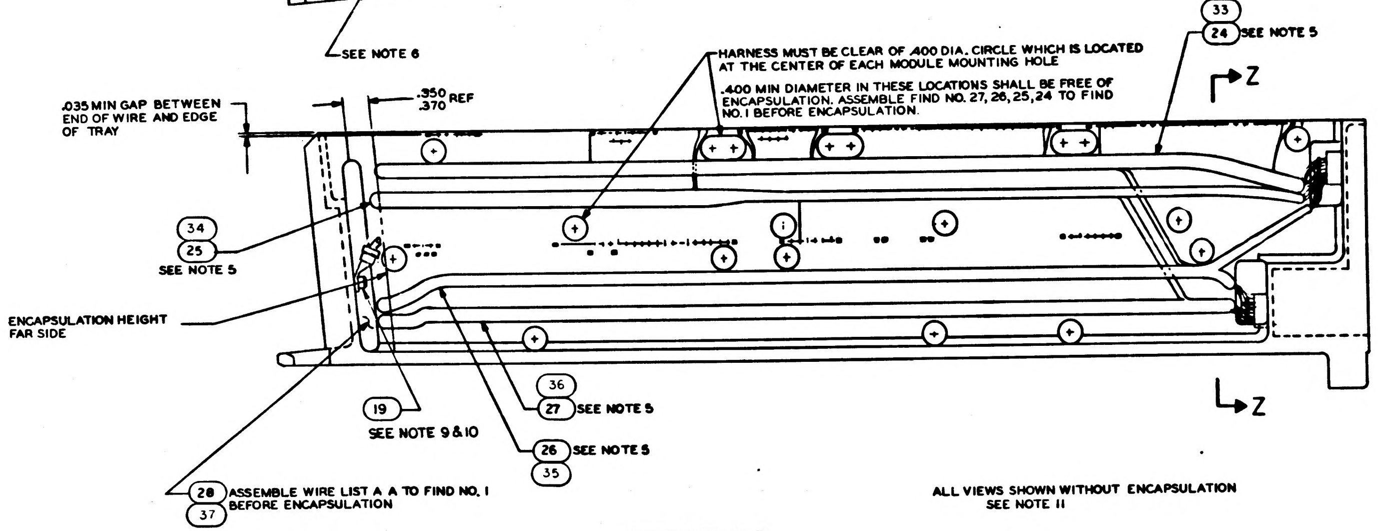
REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		REPLACES WORD DWG REV B PER TDRR 13939		11/4/64	WK
D		REV PER TDRR 15156		29 Dec '64	WK
E		REV PER TDRR 15239			WK

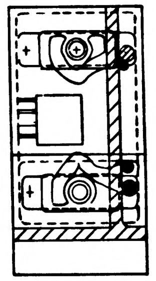

HEIGHT OF ENCAPSULATION
.620
.580
1.860
1.800
SEE NOTE 6
.480
.460 HEIGHT OF ENCAPSULATION


SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.330 MAX HEIGHT OF HARNESS
HEIGHT OF ENCAPSULATION
.350
.370
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6


MAX HEIGHT OF HARNESS
.440
.550


33
24 SEE NOTE 5
HARNESS MUST BE CLEAR OF .400 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO. 27, 26, 25, 24 TO FIND NO. 1 BEFORE ENCAPSULATION.
Z
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350
.370 REF
34
25
SEE NOTE 5
ENCAPSULATION HEIGHT FAR SIDE
Z
19
SEE NOTE 9 & 10
36
27 SEE NOTE 5
26 SEE NOTE 5
35
28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
37

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



SECTION Z-Z

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

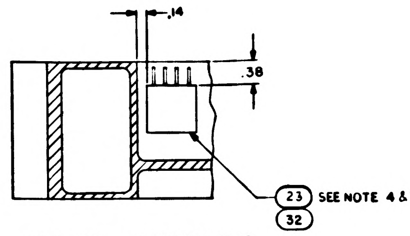
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 30 SEP 64
CHECKED 6 OCT 64
APPROVAL 8 OCT 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

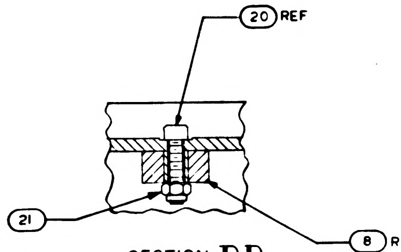
FRAME ASSEMBLY
TRAY 7

CODE IDENT NO.
SIZE E
1007537
SCALE FULL
SHEET 2 OF 2

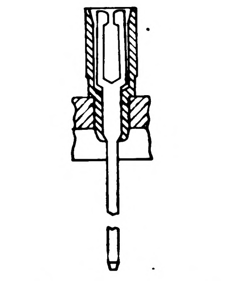
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORK DWG REV B PER TDRR 13939		
D	REV PER TDRR 15156	29 Dec 64	
E	REV PER TDRR 15239		
F	REVISED PER TDRR 15948		



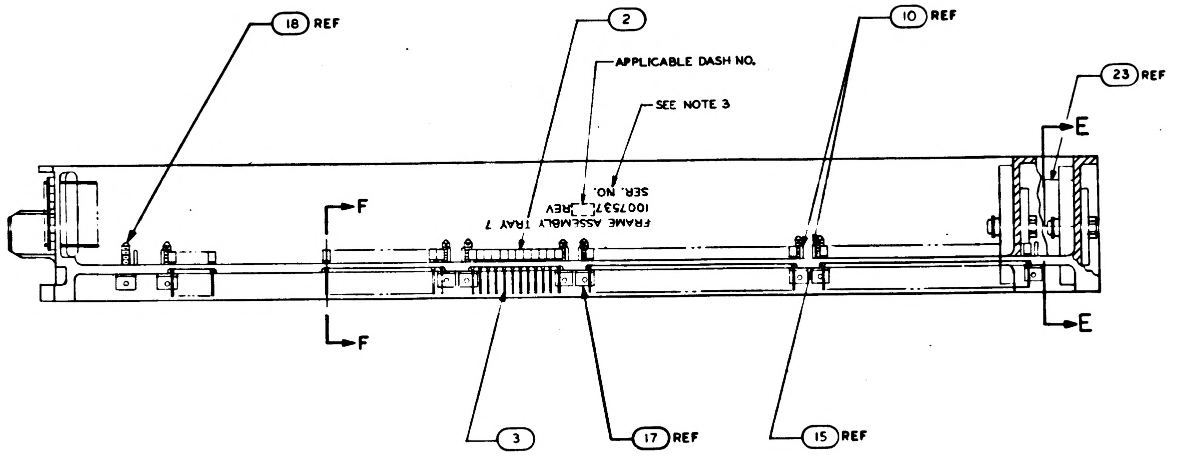
PARTIAL SECTION E-E

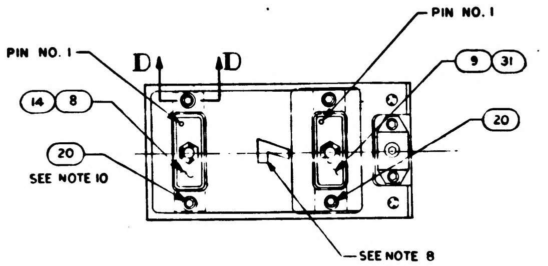


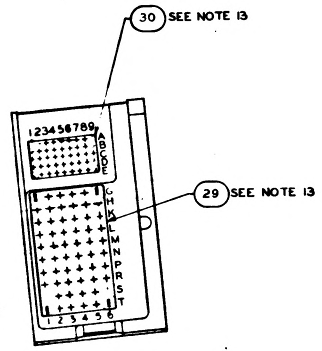
SECTION D-D
SCALE 2/1

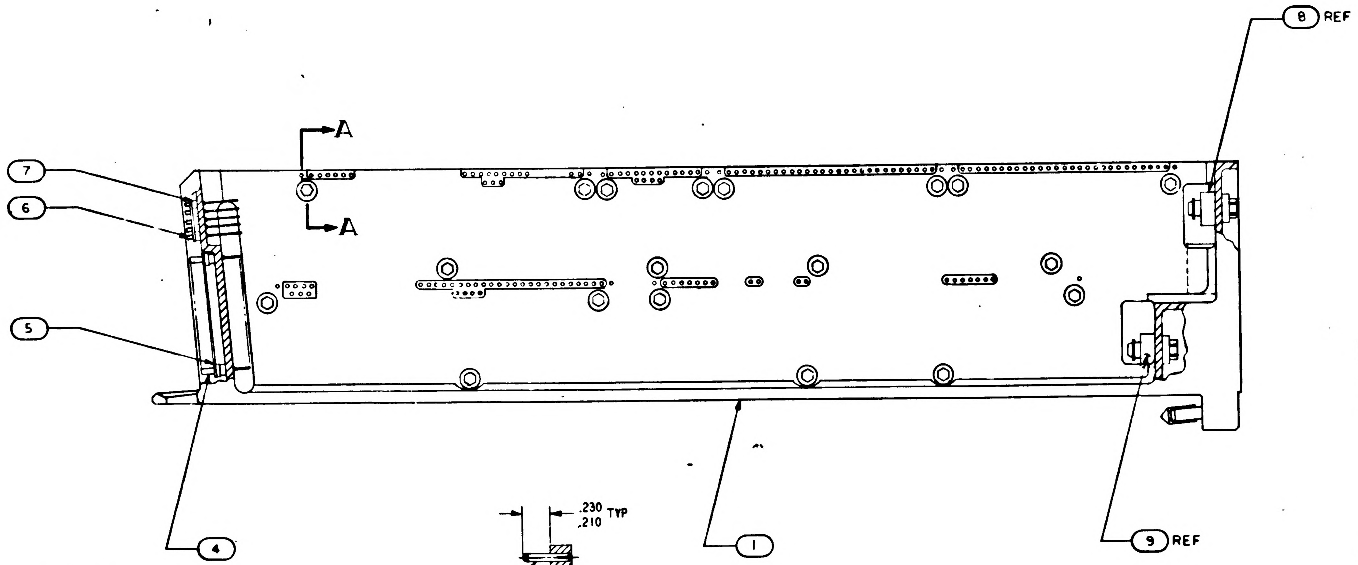


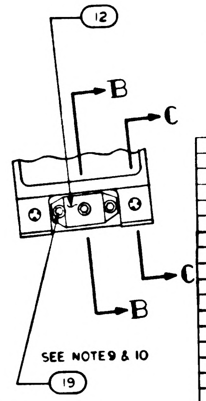
PARTIAL SECTION F-F
143 PLACES



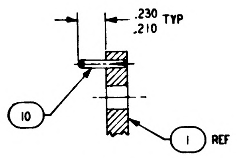








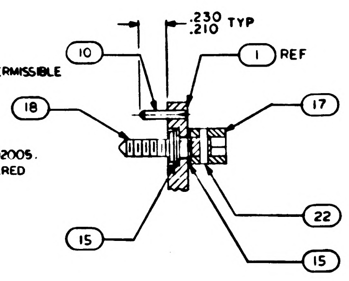
Ⓜ REPLACES WORK DWG REV B



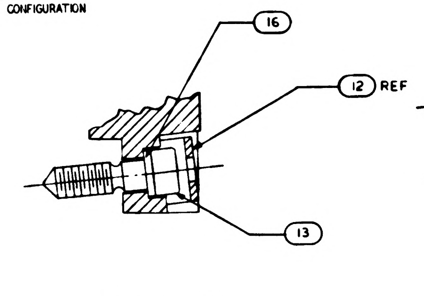
SECTION A-A
SCALE 2/1
-011 CONFIGURATION

NOTES:

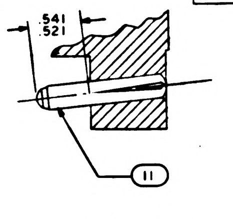
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. MARK PER ND 1002019(BLACK) .100/.140 HIGH AND SERIALIZE PER 2023
4. BOND FIND NO.23 & 32 TO FIND NO 1 USING FLEXIBLE FORMULATION OF NASA DWG 1010657 AND NASA DWG 1010686
5. BOND FIND NUMBERS 24,25,26,27, AND 28 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO.23 & 32
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO.19 DURING ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NOS. 19 & 20 TO FIND NO.1 TO BE 5.0-5.5 IN LB
11. ALL NICKEL WIRE HARNESS TERMINATION TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071
ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. PROCURE PER PS1007147
13. BOND FIND NOS. 29 AND 30 TO FIND NOS. 5 AND 7 PER ND 1002237



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A7 E 9	45A7J1-35
E 10	-2
E 11	-1
E 12	-14
E 13	-7
E 14	-20
E 15	-27

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		—	1		1008633	WIRE LIST A A	37
		—	1		1008632	WIRING HARNESS D	36
		—	1		1008631	WIRING HARNESS C	35
		—	1		1008630	WIRING HARNESS B	34
		—	1		1008629	WIRING HARNESS A	33
		—	1		1007597-011	BUFFER RESISTOR MODULE ASSY	32
		—	1		1010821-2	CONNECTOR, RECEPTACLE	31
		1	1		1008553	GASKET CONNECTOR MIN. TRAY	30
		1	1		1008552	GASKET CONNECTOR TRAY	29
		—	╳		1009567	WIRING DIAGRAM	REF
		╳	—		1009557	WIRING DIAGRAM	REF
		1	—		1015758	WIRE LIST A A	28
		1	—		1015757	WIRING HARNESS D	27
		1	—		1015756	WIRING HARNESS C	26
		1	—		1015755	WIRING HARNESS B	25
		1	—		1015754	WIRING HARNESS A	24
		1	—		1007092	BUFFER RESISTOR MODULE ASSY	23
		19	~~19~~		MS171433	PIN, SPRING	22
		4	4		MS 21045 C 04	NUT, SELF-LOCKING HEX	21
		4	4		MS 16995-11	SCREW, CAP, SOCKET HEAD	20
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	19
		19	~~19~~		1008172	SCREW, JACK	18
		19	~~19~~		1004207	DRIVE CYLINDER	17
		1	1		1008099-2	WASHER	16
		38	~~38~~		1004206	WASHER THRUST	15
		—	1		1010821-1	CONNECTOR, RECEPTACLE	14
		1	1		1008098	SCREW. SOCKET HEAD	13
		1	1		1001317	RETAINER, JACK SCREW	12
		2	2		1010620-5	PIN, GUIDE	11
		12	12		1010620-4	PIN, GUIDE	10
		1	—		1010622-2	CONNECTOR, RECEPTACLE	9
		1	—		1010622-1	CONNECTOR, RECEPTACLE	8
		45	45		1006775	INSULATOR, WRAPOST, MALE MIN	7
		45	45		1006782-2	CONTACT, WRAPOST, MALE MIN	6
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	5
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		143	143		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		143	143		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	1		1008527	FRAME	1
QUANTITY REQUIRED						LIST OF MATERIALS	

1007577		
NEXT ASSY	USED ON	APPLICABLE DASH NO
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497

DRAWN DATE 30 SEP 64
CHECKED 6 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

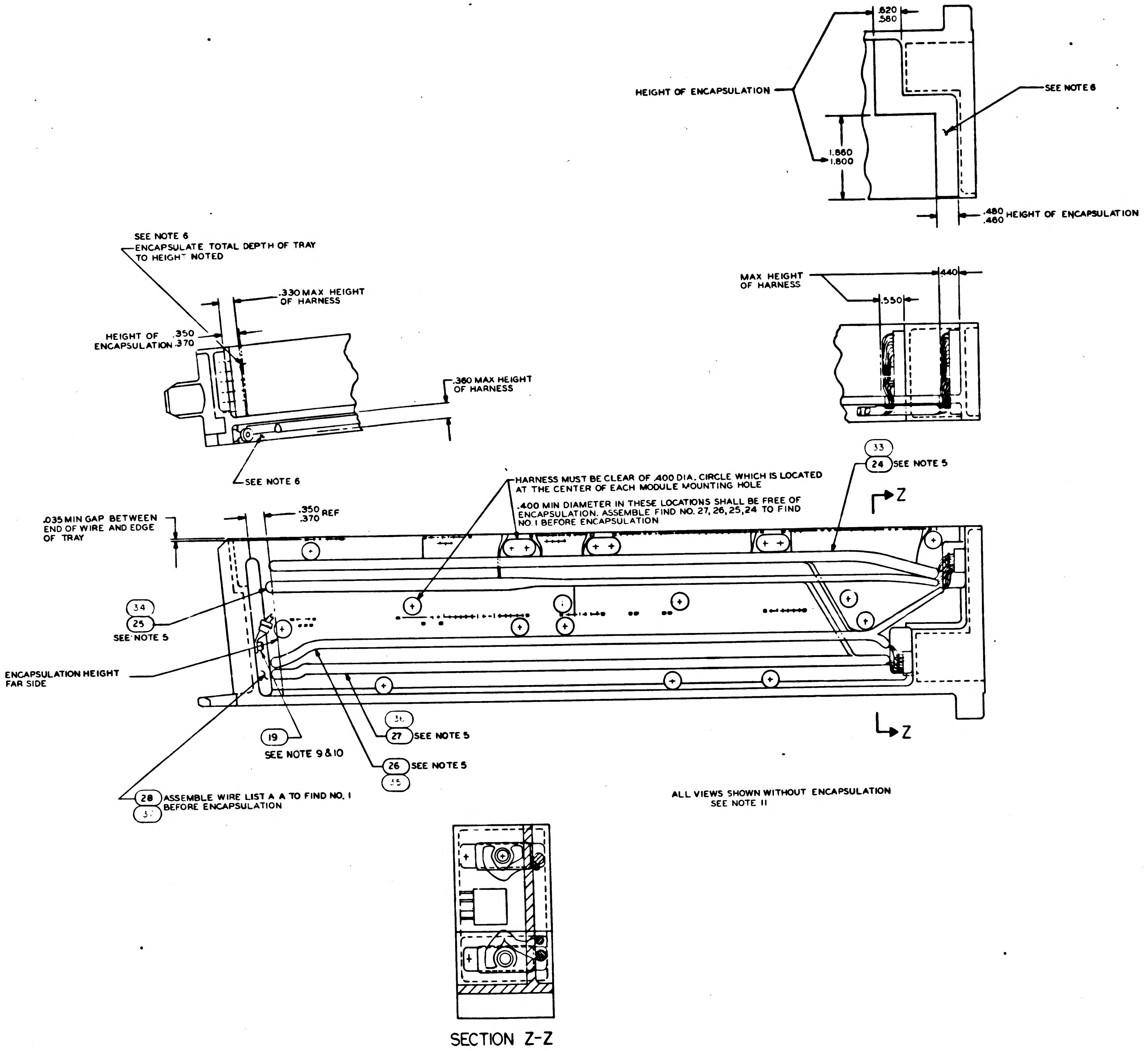
FRAME ASSEMBLY
TRAY 7

CODE IDENT NO | SIZE E | NASA DRAWING NO 1007537
SCALE 1/1 | WT | SHEET 1 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		REPLACES WORKING REV B PER TD 12737			W
D		REV PER TDRR 15[illegible]			
E		REV PER TDRR 15239			
F		REVISED PER TDRR 15948		11 FEB 65	

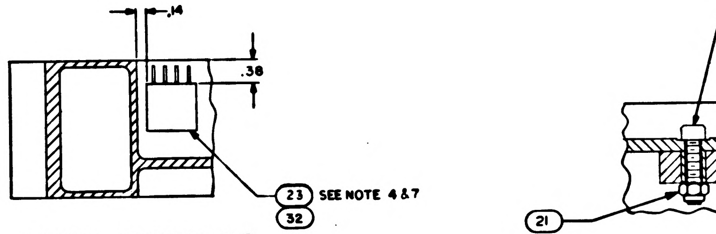

.820
.580
HEIGHT OF ENCAPSULATION
SEE NOTE 6
1.860
1.800
.480
.460 HEIGHT OF ENCAPSULATION
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.330 MAX HEIGHT OF HARNESS
HEIGHT OF ENCAPSULATION
.350
.370
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6
MAX HEIGHT OF HARNESS
.440
.550
33
24 SEE NOTE 5
HARNESS MUST BE CLEAR OF .400 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO. 27, 26, 25, 24 TO FIND NO. 1 BEFORE ENCAPSULATION
Z
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350
.370 REF
34
25
SEE NOTE 5
ENCAPSULATION HEIGHT FAR SIDE
19
SEE NOTE 9 & 10
36
27 SEE NOTE 5
26 SEE NOTE 5
35
Z
28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
37
ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11
SECTION Z-Z

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	ACSP PN	FRAME ASSEMBLY TRAY 7
	DRAWN Jannowak DATE 30 SEP 64	
	CHECKED 6 OCT 64	
	APPROVAL 8 OCT 64	
	APPROVAL	
MATERIAL —	NASA APPROVAL	CODE IDENT NO. · SIZE E · 1007537
CONTRACT NAS 9-497	MIT APPROVAL	SCALE FULL · SHEET 2 OF 2

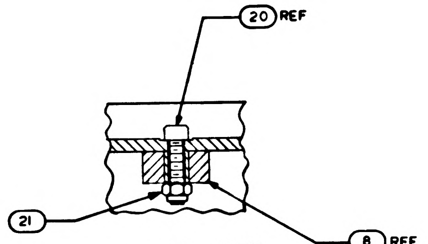
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

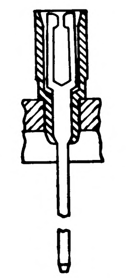
SYM	DESCRIPTION	DATE	APPROVAL
Ⓒ C	REPLACES WORD DWG REV B PER TDRR 13939	1/6/64	WK
D	REV PER TDRR 15156	29 Dec 64	
E	REV PER TDRR 15239		
F	REVISED PER TDRR 15948		
G	REVISED PER TDRR 16268	15 FEB 65	EF



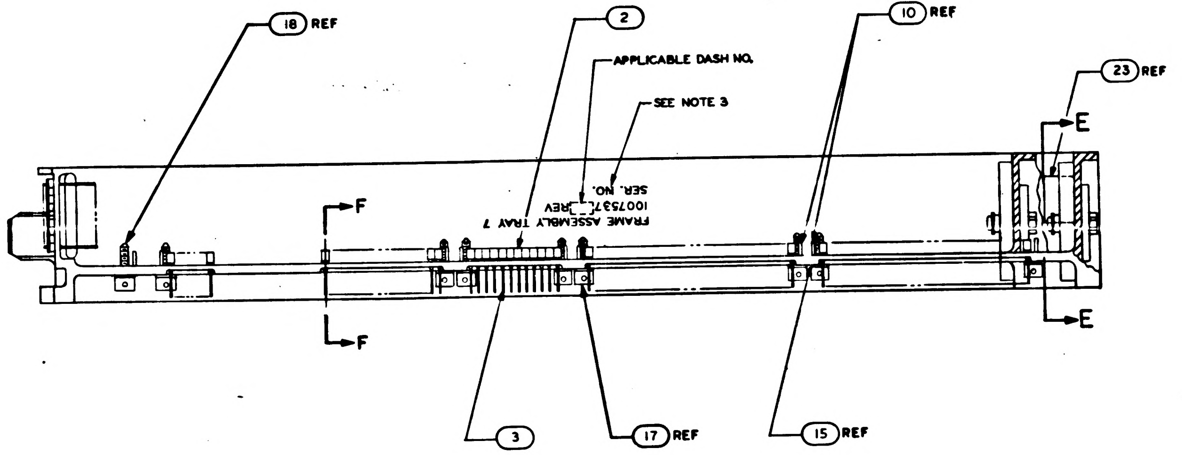
PARTIAL SECTION E-E

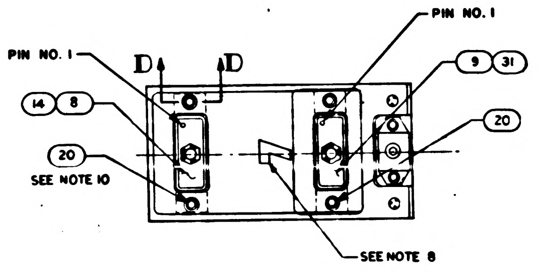


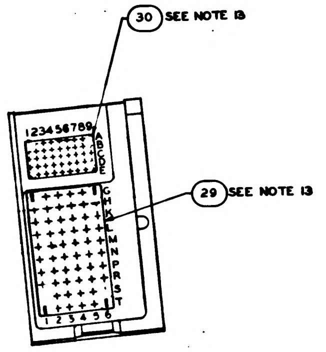
SECTION D-D
SCALE 2/1

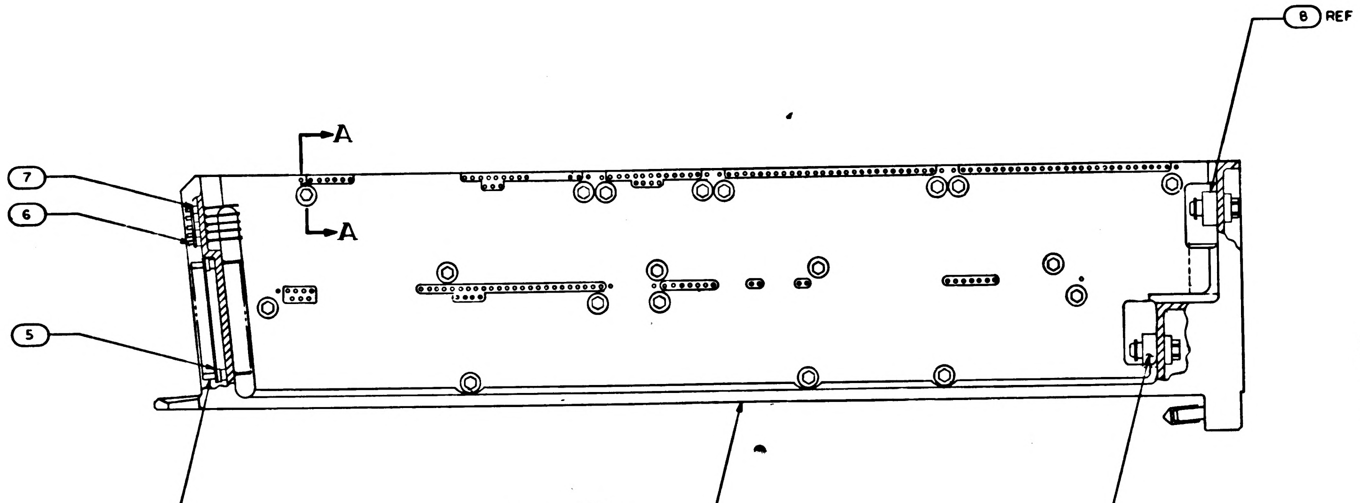


PARTIAL SECTION F-F
143 PLACES

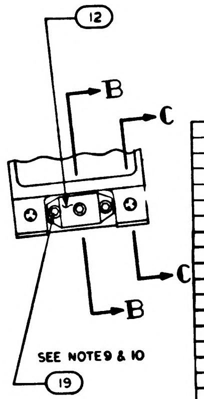






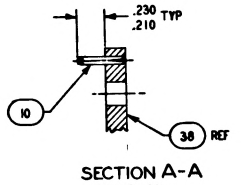


Ⓒ REPLACES WORD DWG REV B

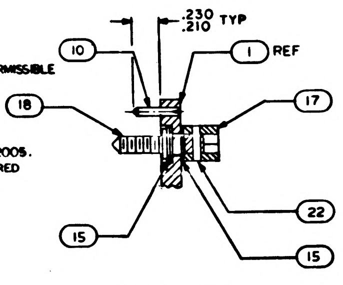


NOTES:

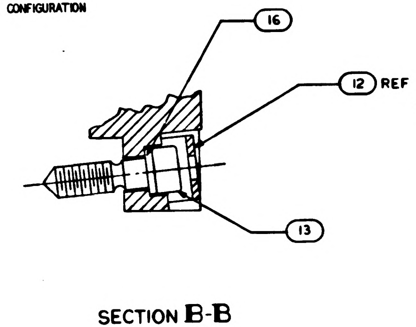
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. MARK PER ND 1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002025
4. BOND FIND NO. 23 & 32 TO FIND NO. 1 USING FLEXIBLE FORMULATION OF NASA DWG 1010657 AND NASA DWG 1010686
5. BOND FIND NUMBERS 24, 25, 26, 27, AND 28 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 23 & 32
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 19 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NOS. 19 & 20 TO FIND NO. 1 TO BE 5.0-5.5 IN LB
11. ALL NICKEL WIRE HARNESS TERMINATION TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071 ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. PROCURE PER PS1007147
13. BOND FIND NOS. 29 AND 30 TO FIND NOS. 5 AND 7 PER ND 1002237



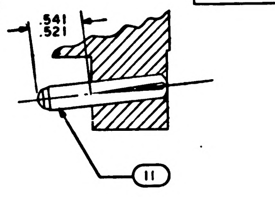
SECTION A-A
SCALE 2/1
-011 CONFIGURATION



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A7 E9	45A7J1—35
E10	—2
E11	—1
E12	—14
E13	—7
E14	—20
E15	—27

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		—	1		1008653	FRAME	38
		—	1		1008633	WIRE LIST A A	37
		—	1		1008632	WIRING HARNESS D	36
		—	1		1008631	WIRING HARNESS C	35
		—	1		1008630	WIRING HARNESS B	34
		—	1		1008629	WIRING HARNESS A	33
		—	1		1007597-011	BUFFER RESISTOR MODULE ASSY	32
		—	1		1010821-2	CONNECTOR, RECEPTACLE	31
		1	1		1008553	GASKET CONNECTOR MIN. TRAY	30
		1	1		1008552	GASKET CONNECTOR TRAY	29
		—	X		1009567	WIRING DIAGRAM	REF
		X	—		1009557	WIRING DIAGRAM	REF
		1	—		1015758	WIRE LIST A A	28
		1	—		1015757	WIRING HARNESS D	27
		1	—		1015756	WIRING HARNESS C	26
		1	—		1015755	WIRING HARNESS B	25
		1	—		1015754	WIRING HARNESS A	24
		1	—		1007092	BUFFER RESISTOR MODULE ASSY	23
		19	~~19~~		MS171433	PIN, SPRING	22
		4	4		MS 21045 C 04	NUT, SELF-LOCKING HEX	21
		4	4		MS 16995-11	SCREW, CAP, SOCKET HEAD	20
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	19
		19	~~19~~		1008172	SCREW, JACK	18
		19	~~19~~		1004207	DRIVE CYLINDER	17
		1	1		1008099-2	WASHER	16
		38	~~38~~		1004206	WASHER THRUST	15
		—	1		1010821-1	CONNECTOR, RECEPTACLE	14
		1	1		1008098	SCREW, SOCKET HEAD	13
		1	1		1001317	RETAINER, JACK SCREW	12
		2	2		1010620-5	PIN, GUIDE	11
		12	12		1010620-4	PIN, GUIDE	10
		1	—		1010622-2	CONNECTOR, RECEPTACLE	9
		1	—		1010622-1	CONNECTOR, RECEPTACLE	8
		45	45		1006775	INSULATOR, WRAPOST, MALE MIN	7
		45	45		1006782-2	CONTACT, WRAPOST, MALE MIN	6
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	5
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		143	143		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		143	143		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	~~1~~		1008527	FRAME	1

QUANTITY REQUIRED

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007577		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ±.02
ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497

DRAWN J. Jaworski DATE 30 SEP 64
CHECKED 6 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 7

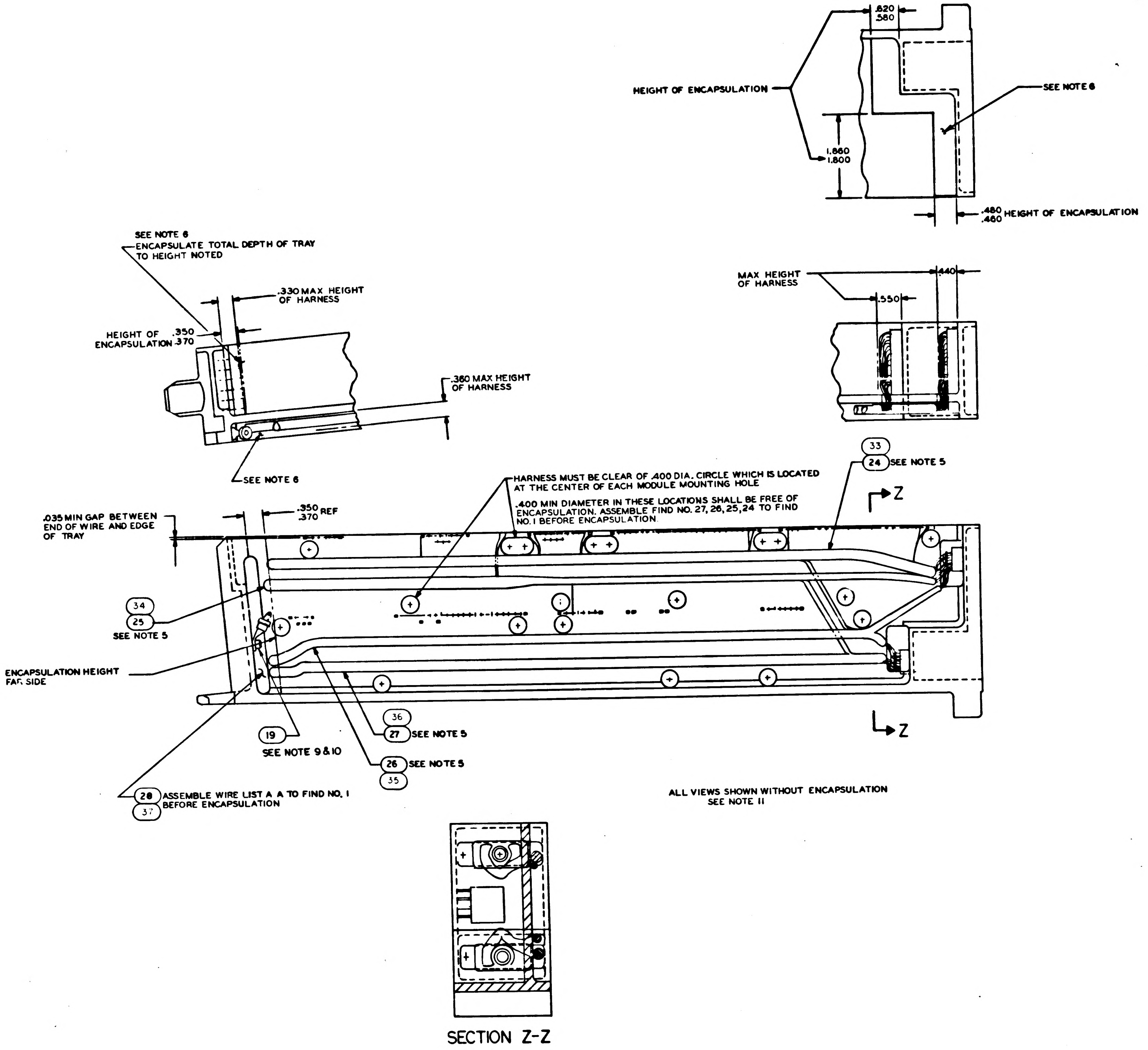
CODE IDENT NO.
SIZE E
NASA DRAWING NO 1007537
SCALE 1/1
WT
SHEET 1 OF 2

1007537

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

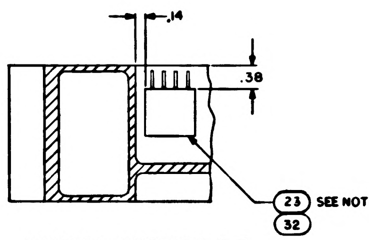
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
—		REPLACES WORD DWG REV 3 PER TDRR 13939		11/4/64	WK
D		REV PER TDRR 15156		29 Dec '64	WK
E		REV PER TDRR 15239			
F		REVISED PER TDRR 15948		11 FEB 65	
G		REVISED PER TDRR 16268		5 FEB 65	JJ


.620
.580
HEIGHT OF ENCAPSULATION
SEE NOTE 6
1.860
1.800
.480
.460 HEIGHT OF ENCAPSULATION
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
.330 MAX HEIGHT OF HARNESS
HEIGHT OF ENCAPSULATION .350 .370
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6
MAX HEIGHT OF HARNESS
.440
.550
33
24 SEE NOTE 5
HARNESS MUST BE CLEAR OF .400 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO. 27, 26, 25, 24 TO FIND NO. 1 BEFORE ENCAPSULATION.
Z
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350 REF
.370
34
25
SEE NOTE 5
ENCAPSULATION HEIGHT FAR SIDE
19
SEE NOTE 9 & 10
36
27 SEE NOTE 5
26 SEE NOTE 5
35
Z
28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
37
ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11
SECTION Z-Z

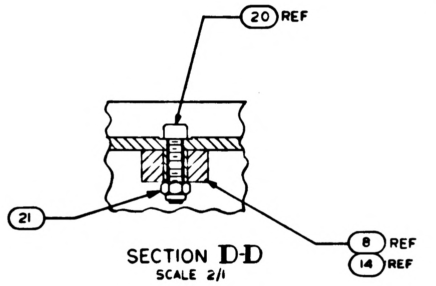
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN Jamowski DATE 30 SEP 64 CHECKED 6 OCT 64 APPROVAL 8 OCT 64 APPROVAL	MANNED SPACECRAFT CENTER HOUSTON, TEXAS FRAME ASSEMBLY TRAY 7
DO NOT SCALE THIS DRAWING MATERIAL —	NASA APPROVAL	CODE IDENT NO. SIZE E 1007537
CONTRACT NAS 9-497	MIT APPROVAL	SCALE FULL SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

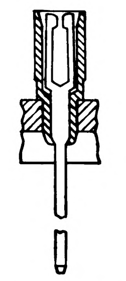
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
Ⓜ C	REPLACES WORD DWG REV B PER TDRR 13939	[illegible]	WK
D	REV PER TDRR 15156	29 Dec '64	[illegible]
E	REV PER TDRR 15239		[illegible]
F	REVISED PER TDRR 15948	1 Feb 65	[illegible]
Ⓜ G	REVISED PER TDRR 16268	15 FEB 65	EF
H	REVISED PER TDRR 17613	25 MAR 65	K



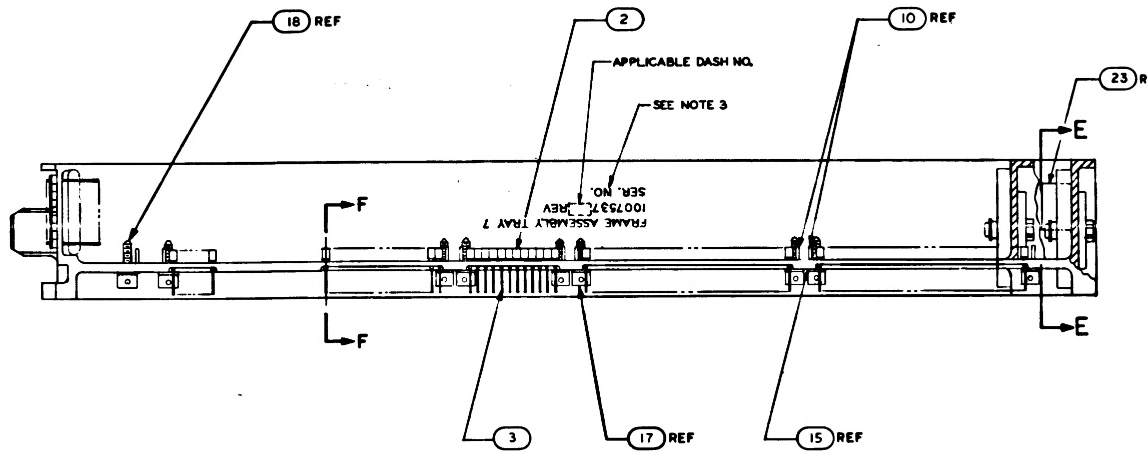
PARTIAL SECTION E-E

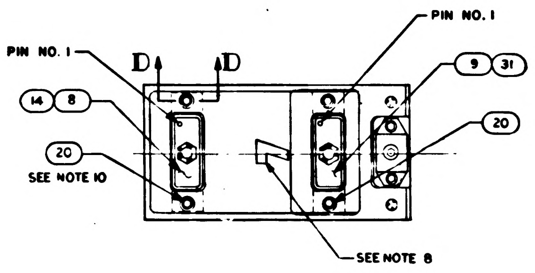


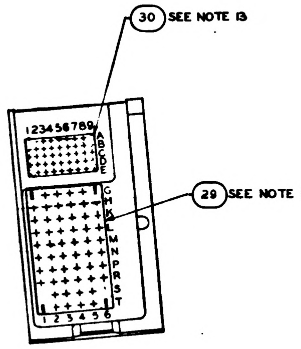
SECTION D-D
SCALE 2/1

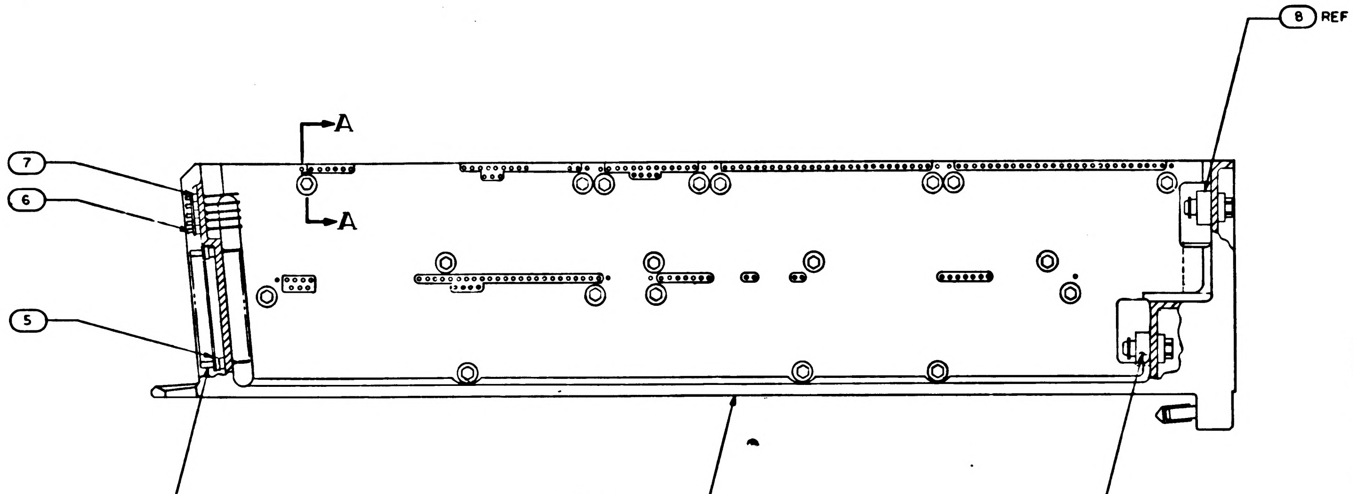


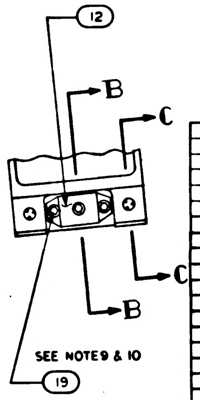
PARTIAL SECTION F-F
143 PLACES







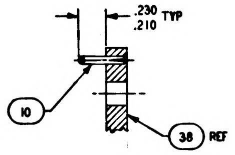




© REPLACES WORD DWG REV B

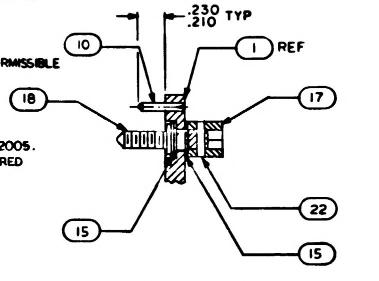
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. MARK PER ND 1002019(BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023
4. BOND FIND NO.23 & 32 TO FIND NO.1 USING FLEXIBLE FORMULATION OF NASA DWG 1010657 AND NASA DWG 1010686
5. BOND FIND NUMBERS 24,25,26,27, AND 28 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) .010 ABOVE TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME UNLESS OTHERWISE SPECIFIED
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO.23 & 32
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO.19 DURING ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NOS. 19 & 20 TO FIND NO.1 TO BE 5.0-5.5 IN LB
11. ALL NICKEL WIRE HARNESS TERMINATION TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071
    ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. PROCURE PER PS1007147
13. BOND FIND NOS. 29 AND 30 TO FIND NOS. 5 AND 7 PER ND 1002237

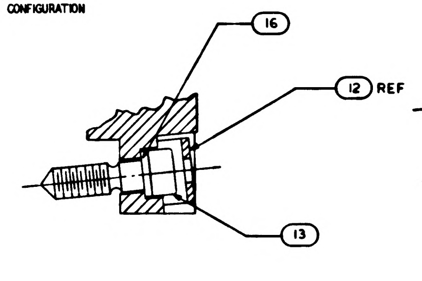


SECTION A-A
SCALE 2/1
-011 CONFIGURATION

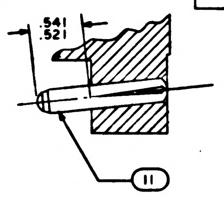
TERMINATION CHART	
FROM	TO
45A7 E9	45A7J1-35
E10	-2
E11	-1
E12	-14
E13	-7
E14	-20
E15	-27



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

QUANTITY REQUIRED							
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		–	1		1008653	FRAME	38
		–	1		1008633	WIRE LIST AA	37
		–	1		1008632	WIRING HARNESS D	36
		–	1		1008631	WIRING HARNESS C	35
		–	1		1008630	WIRING HARNESS B	34
		–	1		1008629	WIRING HARNESS A	33
		–	1		1007597-011	BUFFER RESISTOR MODULE ASSY	32
		–	1		1010821-2	CONNECTOR, RECEPTACLE	31
		1	1		1008553	GASKET CONNECTOR MIN. TRAY	30
		1	1		1008552	GASKET CONNECTOR TRAY	29
		–	X		1009567	WIRING DIAGRAM	REF
		X	–		1009557	WIRING DIAGRAM	REF
		1	–		1015758	WIRE LIST AA	28
		1	–		1015757	WIRING HARNESS D	27
		1	–		1015756	WIRING HARNESS C	26
		1	–		1015755	WIRING HARNESS B	25
		1	–		1015754	WIRING HARNESS A	24
		1	–		1007092	BUFFER RESISTOR MODULE ASSY	23
		19	~~19~~		MS171433	PIN, SPRING	22
		4	4		MS 21045 C 04	NUT, SELF-LOCKING HEX	21
		4	4		MS 16995-11	SCREW, CAP, SOCKET HEAD	20
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	19
		19	~~19~~		1008172	SCREW, JACK	18
		19	~~19~~		1004207	DRIVE CYLINDER	17
		1	1		1008099-2	WASHER	16
		38	~~38~~		1004206	WASHER THRUST	15
		–	1		1010821-1	CONNECTOR, RECEPTACLE	14
		1	1		1008098	SCREW, SOCKET HEAD	13
		1	1		1001317	RETAINER, JACK SCREW	12
		2	2		1010620-5	PIN, GUIDE	11
		12	12		1010620-4	PIN, GUIDE	10
		1	–		1010622-2	CONNECTOR, RECEPTACLE	9
		1	–		1010622-1	CONNECTOR, RECEPTACLE	8
		45	45		1006775	INSULATOR, WRAPOST, MALE MIN	7
		45	45		1006782-2	CONTACT, WRAPOST, MALE MIN	6
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	5
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		143	143		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		143	143		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	~~1~~		1008527	FRAME	1

LIST OF MATERIALS

1007577		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN [illegible] DATE 30 SEP 64
CHECKED [illegible] 6 OCT 64
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible] 11-4-64
MIT APPROVAL [illegible] 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 7

CODE IDENT NO
SIZE E
NASA DRAWING NO 1007537
SCALE 1/1
WT
SHEET 1 OF 2

1007537

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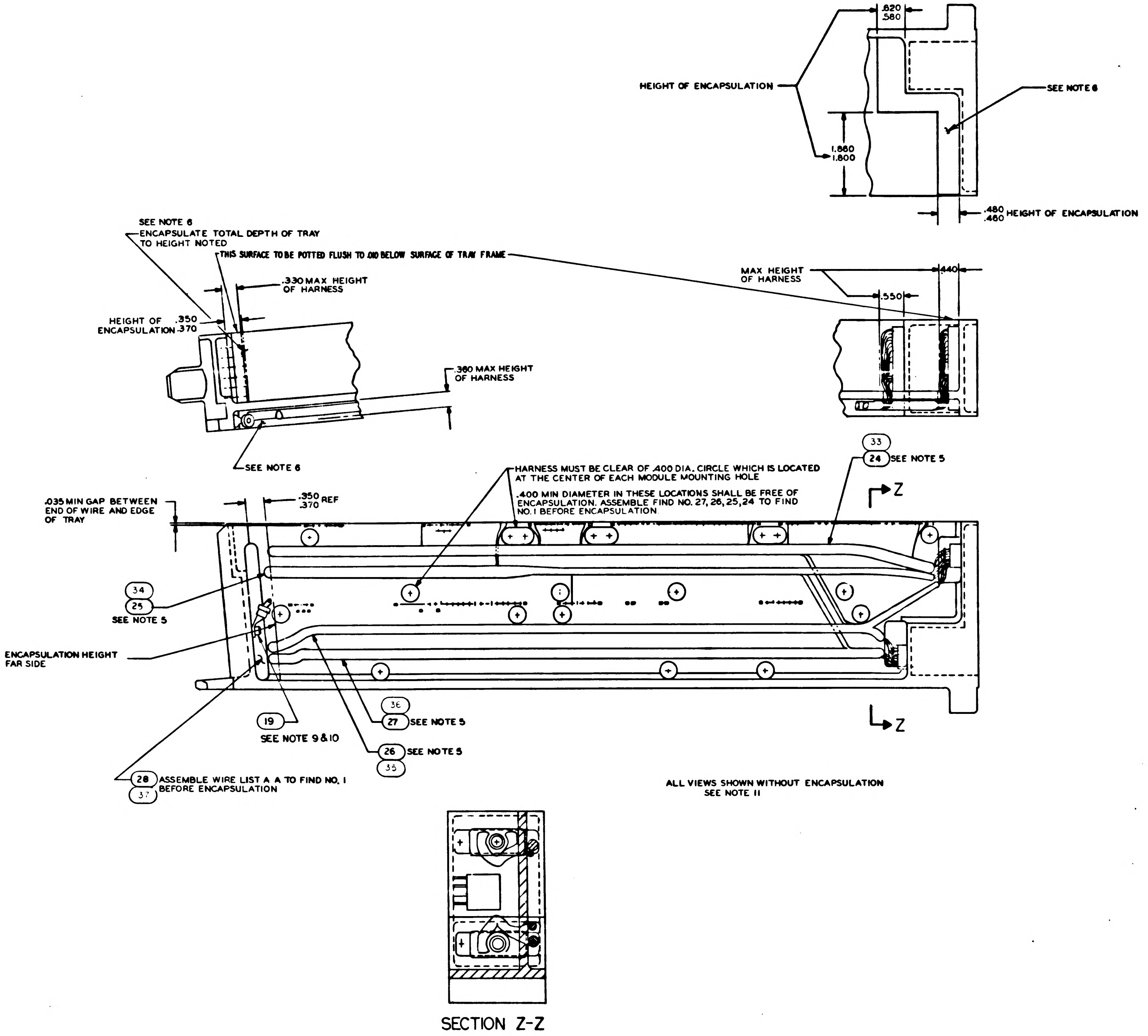
REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
—		REPLACES WORD LIST REV B PER TDRR 13939		4/64	WL
D		REV PER TDRR 15156		29 Jun '64	
E		REV PER TDRR 15239			
F		REVISED PER TDRR 15948		11 FEB	
G		REVISED PER TDRR 16268		5 FEB 65	
H		REVISED PER TDRR 17613		25 MAR 66	I.K.



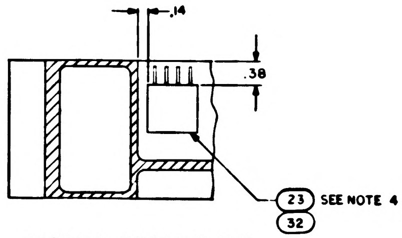
.620
.580
HEIGHT OF ENCAPSULATION
SEE NOTE 6
1.860
1.800
.480
.460 HEIGHT OF ENCAPSULATION
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.330 MAX HEIGHT OF HARNESS
HEIGHT OF ENCAPSULATION .350 .370
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6
MAX HEIGHT OF HARNESS
.440
.550
33
24 SEE NOTE 5
Z
Z
HARNESS MUST BE CLEAR OF .400 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO. 27, 26, 25, 24 TO FIND NO. 1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350
.370 REF
34
25
SEE NOTE 5
ENCAPSULATION HEIGHT FAR SIDE
19
SEE NOTE 9 & 10
36
27 SEE NOTE 5
26 SEE NOTE 5
35
28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
37
SECTION Z-Z

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11

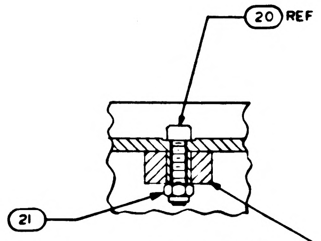
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + — DECIMALS + — ANGLES + —	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN DATE 30 SEP 64 CHECKED 6 OCT 64 APPROVAL 8 OCT 64 APPROVAL	FRAME ASSEMBLY TRAY 7
MATERIAL —	NASA APPROVAL	CODE IDENT NO. SIZE E 1007537
CONTRACT NAS 9-497	MIT APPROVAL	SCALE FULL SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

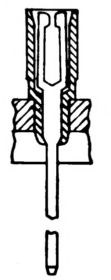
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
Ⓜ C	REPLACES WORD DWG REV B PER TDRR 13939	[illegible]	WK
D	REV PER TDRR 15156	23 Dec 64	[illegible]
E	REV PER TDRR 15239		[illegible]
F	REVISED PER TDRR 15948	[illegible]	[illegible]
Ⓜ G	REVISED PER TDRR 16268	15 FEB 65	EF
Ⓜ H	REVISED PER TDRR 17613	25 MAR 65	[illegible]
J	REVISED PER TDRR 18690	4 MAY 65	EF



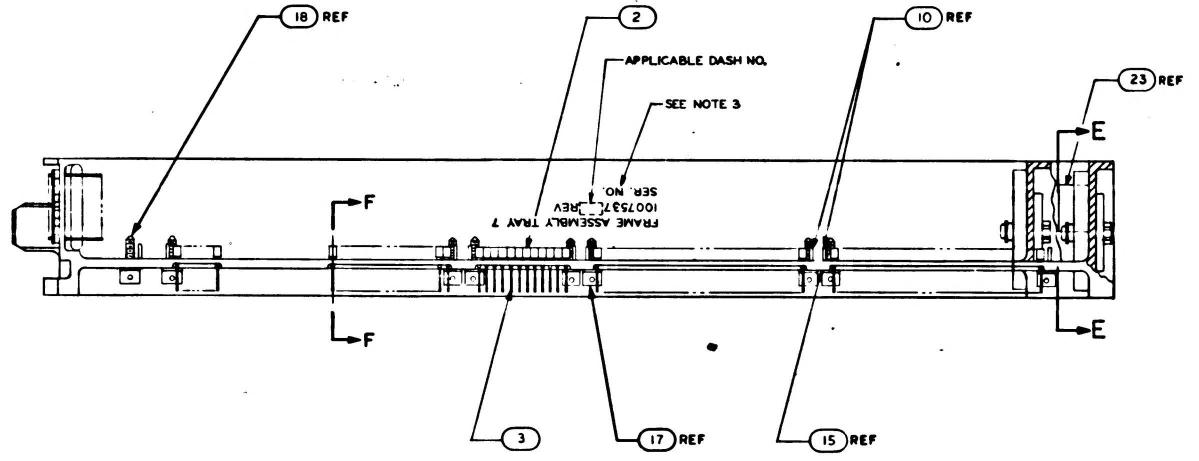
PARTIAL SECTION E-E

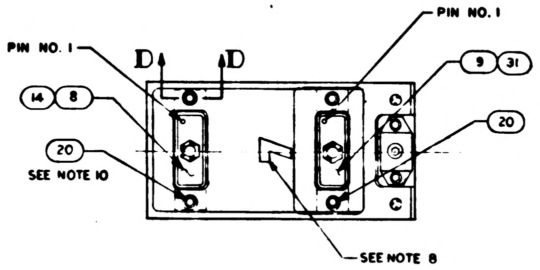


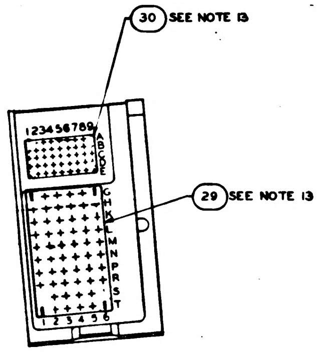
SECTION D-D
SCALE 2/1

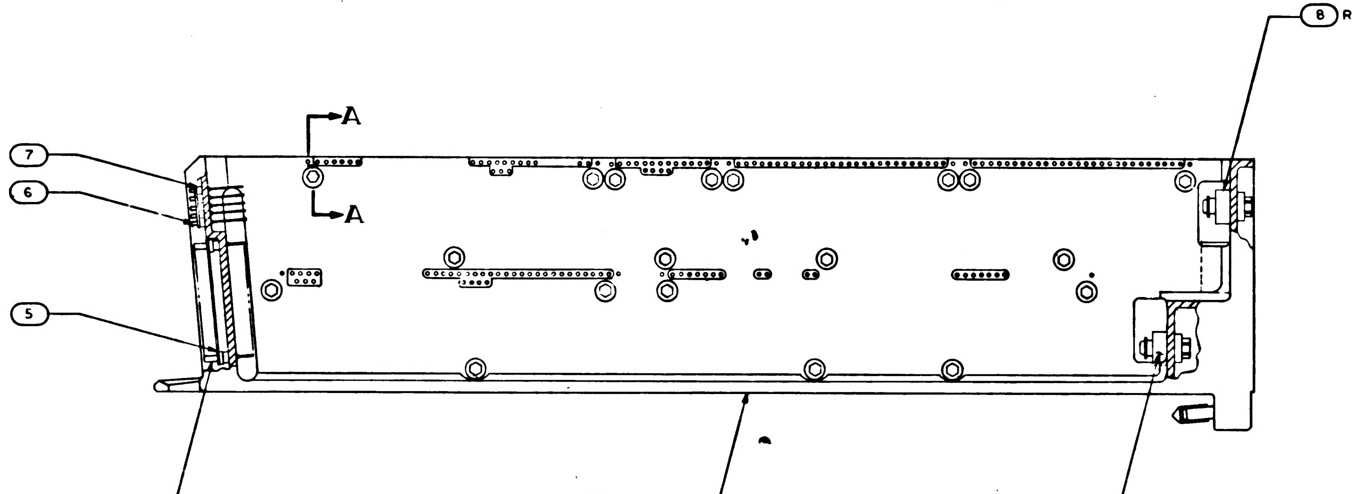


PARTIAL SECTION F-F
143 PLACES

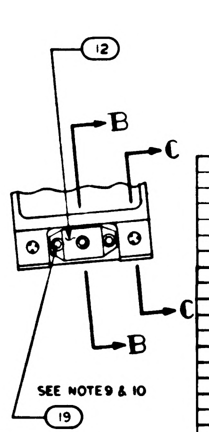






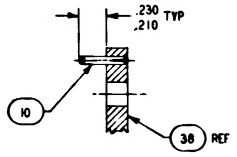


Ⓒ REPLACES WORD DWG REV B



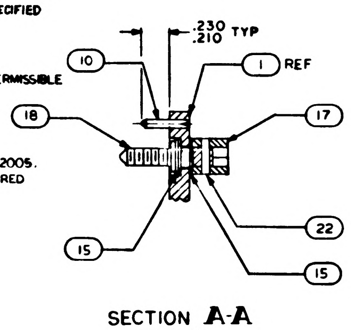
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. MARK PER ND 1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023
4. BOND FIND NO. 23 & 32 TO FIND NO. 1 USING FLEXIBLE FORMULATION OF NASA DWG 1010657 AND NASA DWG 1010686
5. BOND FIND NUMBERS 24, 25, 26, 27, AND 28 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) .010 ABOVE TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME UNLESS OTHERWISE SPECIFIED
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 23 & 32
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 19 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NOS. 19 & 20 TO FIND NO. 1 TO BE 5.0–5.5 IN LB
11. ALL NICKEL WIRE HARNESS TERMINATION TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071
    ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. PROCURE PER PS1007147
13. BOND FIND NOS. 29 AND 30 TO FIND NOS. 5 AND 7 PER ND 1002237

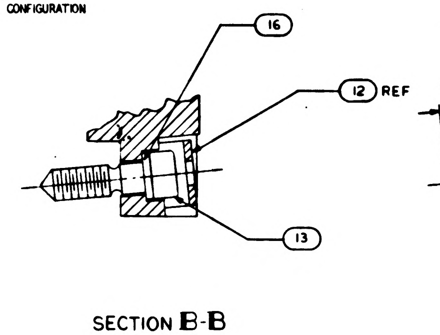


SECTION A-A
SCALE 2/1
-011 CONFIGURATION

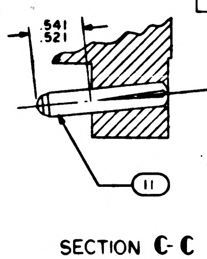
TERMINATION CHART	
FROM	TO
45A7 E9	45A7J1—35
E10	-2
E11	-1
E12	-14
E13	-7
E14	-20
E15	-27



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

		QUANTITY REQUIRED 021	011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		—	1		1008653	FRAME	38
		—	1		1008633	WIRE LIST A A	37
		—	1		1008632	WIRING HARNESS D	36
		—	1		1008631	WIRING HARNESS C	35
		—	1		1008630	WIRING HARNESS B	34
		—	1		1008629	WIRING HARNESS A	33
		—	1		1007597-011	BUFFER RESISTOR MODULE ASSY	32
		—	1		1010821-2	CONNECTOR, RECEPTACLE	31
		1	1		1008553	GASKET CONNECTOR MIN. TRAY	30
		1	1		1008552	GASKET CONNECTOR TRAY	29
		—	X		1009567	WIRING DIAGRAM	REF
		X	—		1009557	WIRING DIAGRAM	REF
		1	—		1015758	WIRE LIST A A	28
		1	—		1015757	WIRING HARNESS D	27
		1	—		1015756	WIRING HARNESS C	26
		1	—		1015755	WIRING HARNESS B	25
		1	—		1015754	WIRING HARNESS A	24
		1	—		1007092	BUFFER RESISTOR MODULE ASSY	23
		19	[illegible]		MS171433	PIN, SPRING	22
		4	4		MS 21045 C 04	NUT, SELF-LOCKING HEX	21
		4	4		MS 16995-11	SCREW, CAP, SOCKET HEAD	20
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	19
		19	[illegible]		1008172	SCREW, JACK	18
		19	[illegible]		1004207	DRIVE CYLINDER	17
		1	1		1008099-2	WASHER	16
		38	[illegible]		1004206	WASHER THRUST	15
		—	1		1010821-1	CONNECTOR, RECEPTACLE	14
		1	1		1008098	SCREW, SOCKET HEAD	13
		1	1		1001317	RETAINER, JACK SCREW	12
		2	2		1010620-5	PIN, GUIDE	11
		12	12		MS [illegible]56-604	PIN, GUIDE	10
		1	—		1010622-2	CONNECTOR, RECEPTACLE	9
		1	—		1010622-1	CONNECTOR, RECEPTACLE	8
		45	45		1006775	INSULATOR, WRAPOST, MALE MIN	7
		45	45		1006782-2	CONTACT, WRAPOST, MALE MIN	6
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	5
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		143	143		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		143	143		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	[illegible]		1008527	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007577		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ± .02
ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497

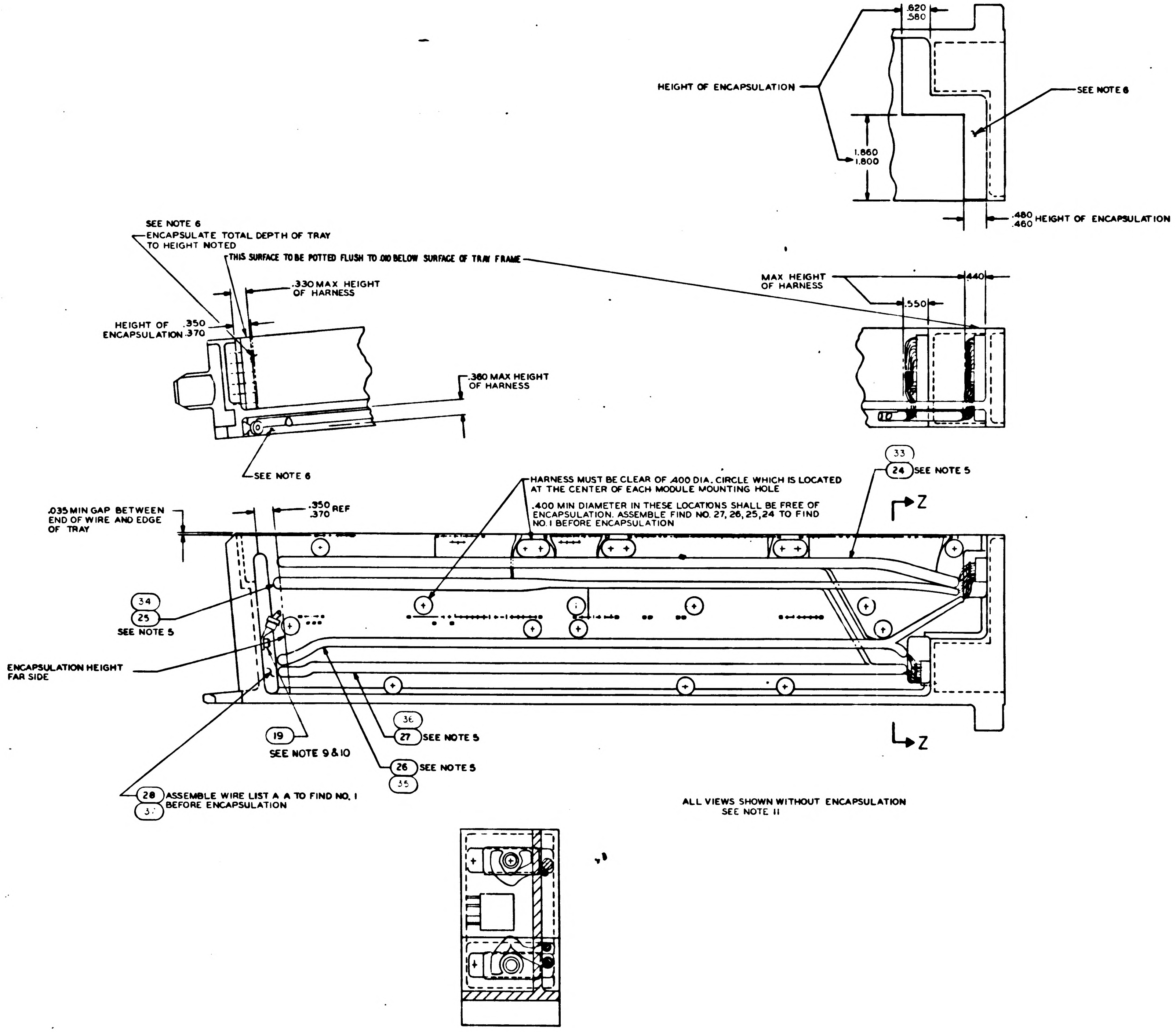
DRAWN DATE 30 SEP 64
CHECKED 6 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 7

CODE IDENT NO
SIZE E
NASA DRAWING NO 1007537
SCALE 1/1
WT
SHEET 1 OF 2

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		REPLACES W9RP DWG REV B PER TDRR 13737		[illegible]	WK
D		REV PER TDRR 15156		29 Dec 64	WK
E		REV PER TDRR 15239			
F		REVISED PER TDRR 15948		11 FEB 65	
G		REVISED PER TDRR 16268		5 FEB 65	EF
H		REVISED PER TDRR 17613		23 MAR 65	J.K.
J		REVISED PER TDRR 18690		4 MAY 65	EF



.620
.580
HEIGHT OF ENCAPSULATION
SEE NOTE 6
1.860
1.800
.480
.460
HEIGHT OF ENCAPSULATION
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.330 MAX HEIGHT OF HARNESS
HEIGHT OF ENCAPSULATION .350 .370
.380 MAX HEIGHT OF HARNESS
SEE NOTE 6
MAX HEIGHT OF HARNESS
.440
.550
33
24
SEE NOTE 5
HARNESS MUST BE CLEAR OF .400 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO. 27, 26, 25, 24 TO FIND NO. 1 BEFORE ENCAPSULATION
Z
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350
.370
REF
34
25
SEE NOTE 5
ENCAPSULATION HEIGHT FAR SIDE
19
SEE NOTE 9 & 10
36
27
SEE NOTE 5
26
35
SEE NOTE 5
28
37
ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
Z

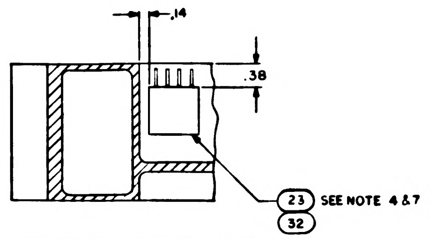
ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11

SECTION Z-Z

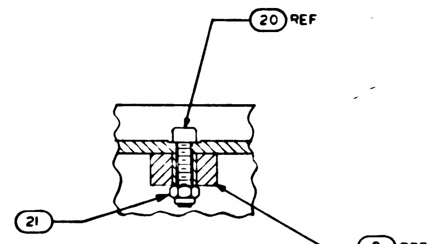
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	ACSP PN	
	DRAWN DATE 30 SEP 64 CHECKED 6 OCT 64 APPROVAL 8 OCT 64 APPROVAL	FRAME ASSEMBLY TRAY 7
MATERIAL ——	NASA APPROVAL	CODE IDENT NO. SIZE E 1007537
CONTRACT NAS 9-497	MIT APPROVAL	SCALE FULL SHEET 2 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

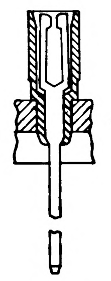
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939	11/4/64	WK
D	REV PER TDRR 15156	29 Dec 64	
E	REV PER TDRR 15239		
F	REVISED PER TDRR 15948		
G	REVISED PER TDRR 16268	15 FEB 65	JJJ EF
H	REVISED PER TDRR 17613	25 MAR 65	JK
J	REVISED PER TDRR 18690	4 MAY 65	EF
K	REVISED PER TDRR 18691	7 MAY 65	JJJ EF



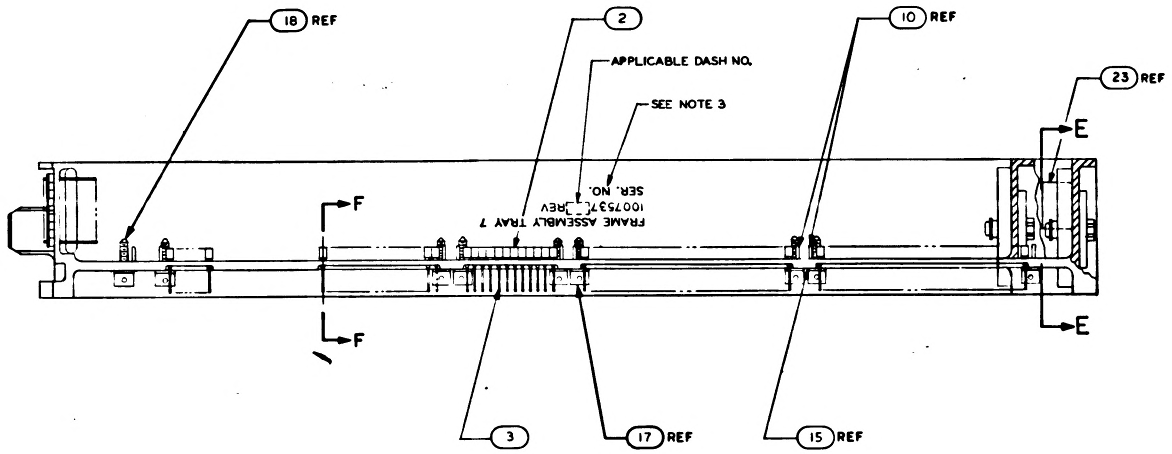
PARTIAL SECTION E-E

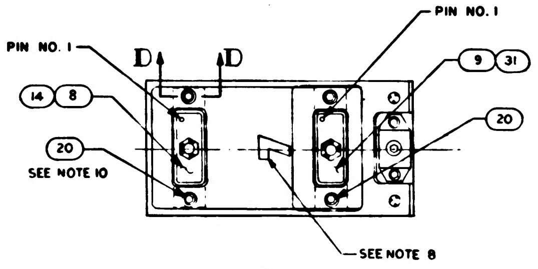


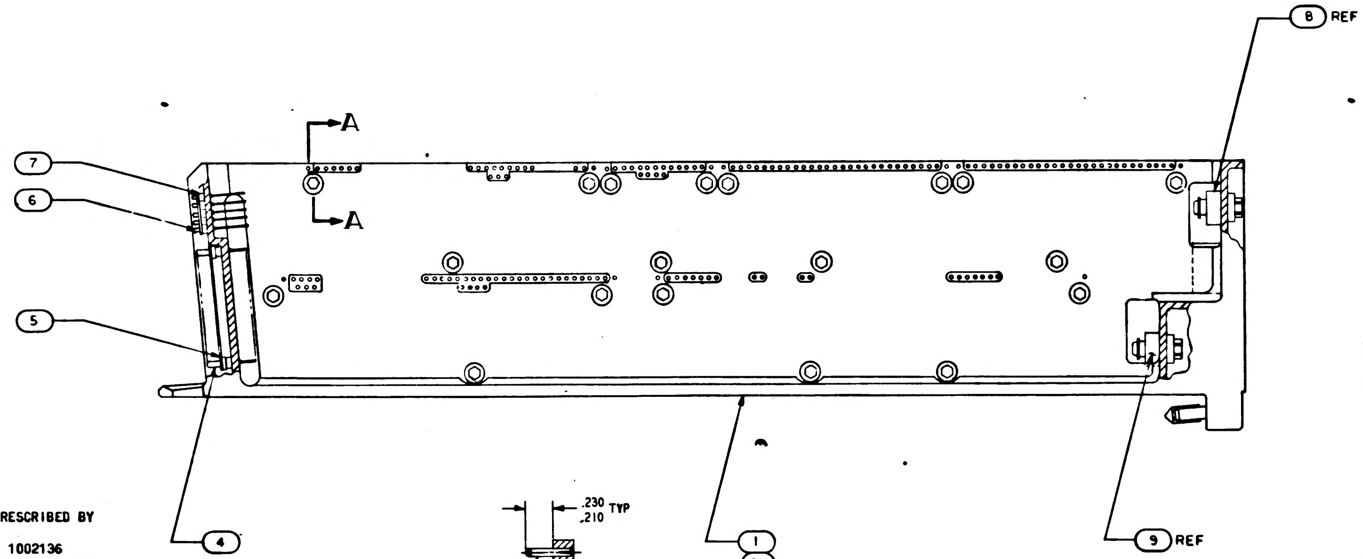
SECTION D-D
SCALE 2/1



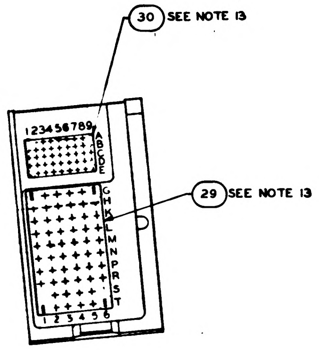
PARTIAL SECTION F-F
143 PLACES

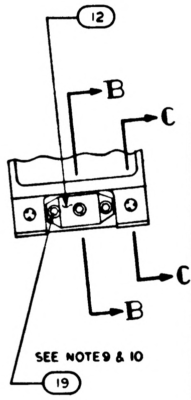






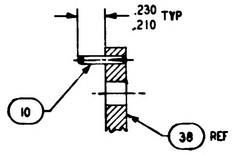
© REPLACES WORD DWG REV B





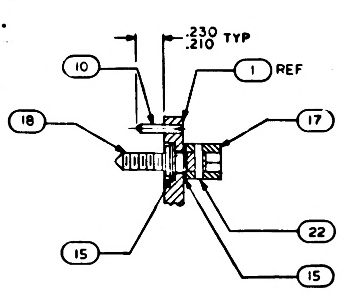
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4, 5, 6 AND 7 PER ND 1002136
3. MARK PER ND 1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023
4. BOND FIND NO. 23 AND 32 TO FIND NO. 1 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
5. BOND FIND NUMBERS 24, 25, 26, 27 AND 28 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 23 AND 32
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 19 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NOS. 19 AND 20 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATION TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. PROCURE PER PS 1007147
13. BOND FIND NOS. 29 AND 30 TO FIND NOS. 5 AND 7 PER ND 1002237
14. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.

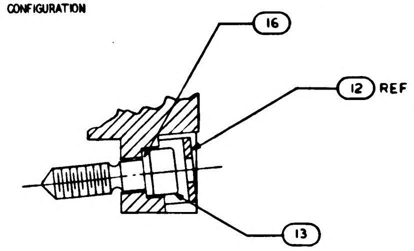


SECTION A-A
SCALE 2/1
-011 CONFIGURATION

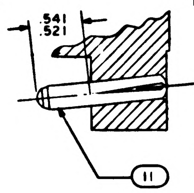
TERMINATION CHART	
FROM	TO
45A7 E9	45A7J1–35
E10	–2
E11	–1
E12	–14
E13	–7
E14	–20
E15	–27



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
		–	1		1008653	FRAME	38
		–	1		1008633	WIRE LIST A A	37
		–	1		1008632	WIRING HARNESS D	36
		–	1		1008631	WIRING HARNESS C	35
		–	1		1008630	WIRING HARNESS B	34
		–	1		1008629	WIRING HARNESS A	33
		–	1		1007597-011	BUFFER RESISTOR MODULE ASSY	32
		–	1		1010821-2	CONNECTOR, RECEPTACLE	31
		1	1		1008553	GASKET CONNECTOR MIN. TRAY	30
		1	1		1008552	GASKET CONNECTOR TRAY	29
		–	╳		1009567	WIRING DIAGRAM	REF
		╳	–		1009557	WIRING DIAGRAM	REF
		1	–		1015758	WIRE LIST A A	28
		1	–		1015757	WIRING HARNESS D	27
		1	–		1015756	WIRING HARNESS C	26
		1	–		1015755	WIRING HARNESS B	25
		1	–		1015754	WIRING HARNESS A	24
		1	–		1007092	BUFFER RESISTOR MODULE ASSY	23
		19	~~19~~		MS171433	PIN, SPRING	22
		4	4		MS 21045 C 04	NUT, SELF-LOCKING HEX	21
		4	4		MS 16995-11	SCREW, CAP, SOCKET HEAD	20
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	19
		19	~~19~~		1008172	SCREW, JACK	18
		19	~~19~~		1004207	DRIVE CYLINDER	17
		1	1		1008099-2	WASHER	16
		38	~~38~~		1004206	WASHER THRUST	15
		–	1		1010821-1	CONNECTOR, RECEPTACLE	14
		1	1		1008098	SCREW, SOCKET HEAD	13
		1	1		1001317	RETAINER, JACK SCREW	12
		2	2		1010620-5	PIN, GUIDE	11
		12	12		MS [illegible]56-504	PIN, GUIDE	10
		1	–		1010622-2	CONNECTOR, RECEPTACLE	9
		1	–		1010622-1	CONNECTOR, RECEPTACLE	8
		45	45		1006775	INSULATOR, WRAPOST, MALE MIN	7
		45	45		1006782-2	CONTACT, WRAPOST, MALE MIN	6
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	5
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		143	143		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		143	143		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	~~1~~		1008527	FRAME	1
QUANTITY REQUIRED					LIST OF MATERIALS		

1007577		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN J. Janowski DATE 30 SEP 64
CHECKED 6 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

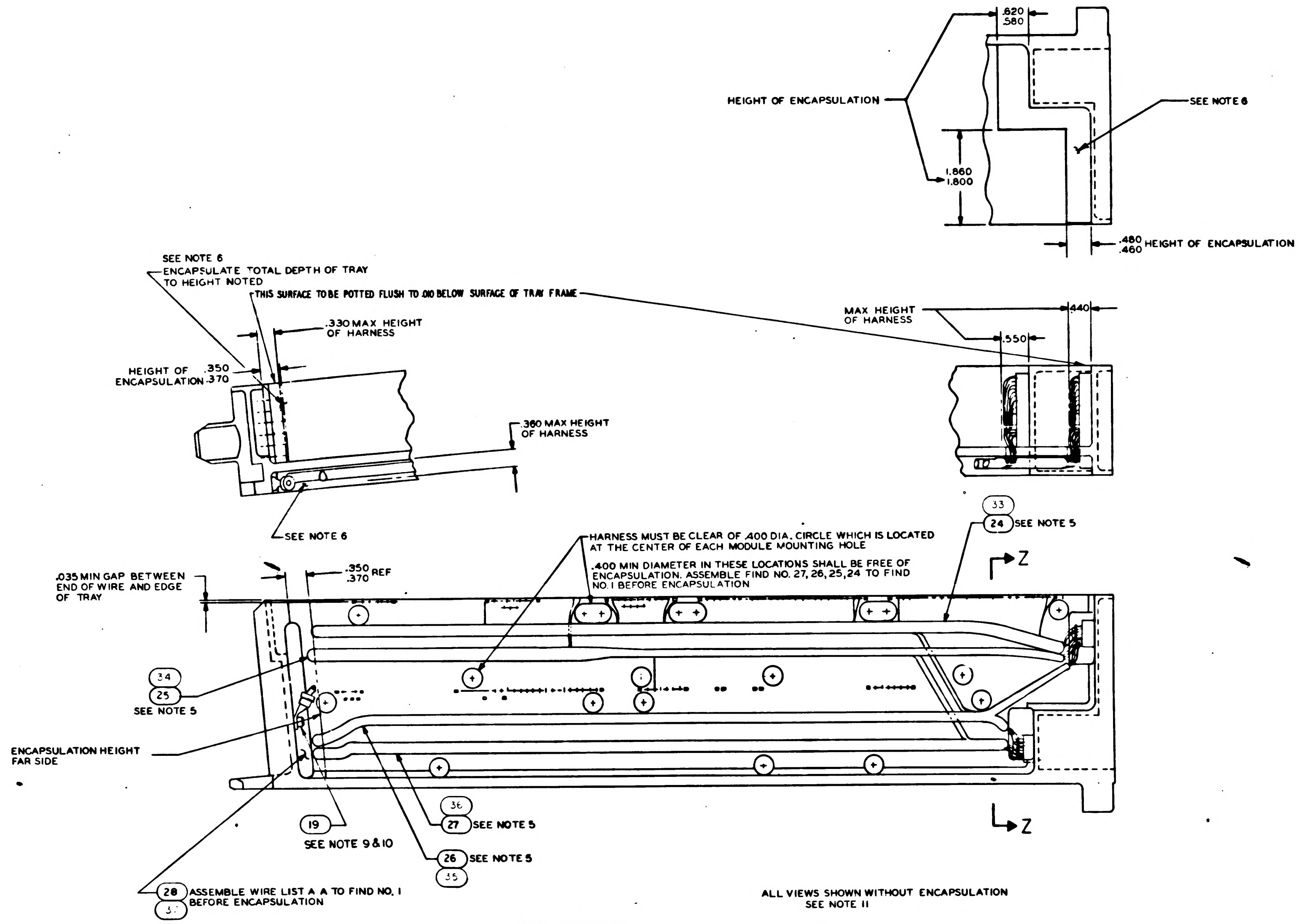
FRAME ASSEMBLY
TRAY 7

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007537
SCALE 1/1
WT
SHEET 1 OF 2

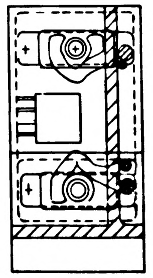
NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APP'D
C		[illegible]PLACES WOR[illegible] TAG REV B PER TD[illegible] 13937		[illegible]	WK
D		[illegible] PER TDRR 15156		29 Dec '64	WK
E		REV PER TDRR 15239			
F		REVISED PER TDRR 15948		11 FEB 65	JK
G		REVISED PER TDRR 16268		5 FEB 65	JJJ EF
H		REVISED PER TDRR 17613		25 MAR 65	W.D.
J		REVISED PER TDRR 18690		4 MAY 65	EF W.D.
K		REVISED PER TDRR 18691		7 MAY 65	JJJ EF


HEIGHT OF ENCAPSULATION
.620
.580
SEE NOTE 6
1.860
1.800
.480
.460 HEIGHT OF ENCAPSULATION
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.330 MAX HEIGHT OF HARNESS
HEIGHT OF ENCAPSULATION .350 .370
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6
MAX HEIGHT OF HARNESS
.440
.550
33
24 SEE NOTE 5
HARNESS MUST BE CLEAR OF .400 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO. 27, 26, 25, 24 TO FIND NO. 1 BEFORE ENCAPSULATION
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350
.370 REF
Z
34
25
SEE NOTE 5
ENCAPSULATION HEIGHT FAR SIDE
Z
19
SEE NOTE 9 & 10
36
27 SEE NOTE 5
26 SEE NOTE 5
35
28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
37

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



SECTION Z-Z

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± — DECIMALS ± — ANGLES ± —	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DO NOT SCALE THIS DRAWING	ACSP PN		
	DRAWN Jamanake DATE 30 SEP 64 CHECKED 6 OCT 64 APPROVAL 8 OCT 64 I N O APPROVAL	FRAME ASSEMBLY TRAY 7	
MATERIAL —	NASA APPROVAL	CODE IDENT NO. 80230	SIZE E — 1007537
CONTRACT NAS 9-497	MIT APPROVAL	SCALE FULL	SHEET 2 OF 2

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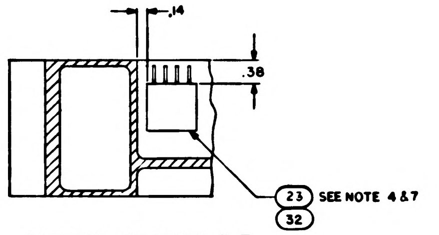
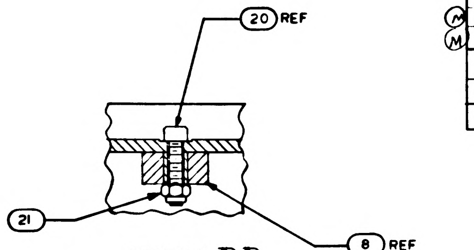
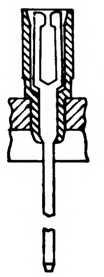
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	[illegible] WORD DWG REV B PER [illegible] 13939		WA
D	REV PER TDRR 15156	29 Dec 64	
E	REV PER TDRR 15239		
F	REVISED [illegible] TDRR 15948		
G	REVISED PER TDRR 16268	FEB 65	EF
H	REVISED [illegible] PR 17613	25 MAR 65	
J	REVISED PER TDRR 18690	4 MAY 65	EF
K	REVISED PER TDRR 18691	7 MAY 65	
L	REVISED [illegible] TDRR 18695	11 MAY 65	



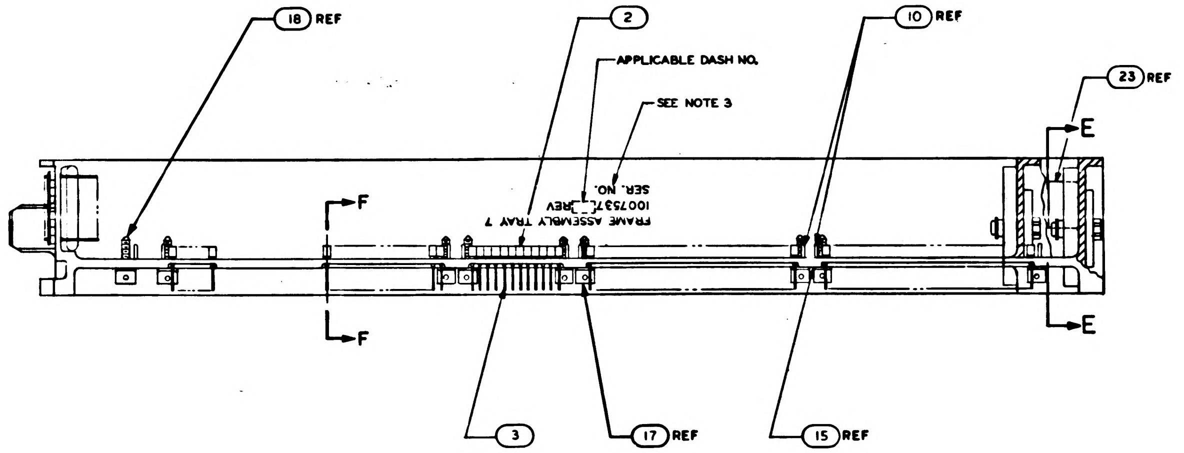
PARTIAL SECTION E-E

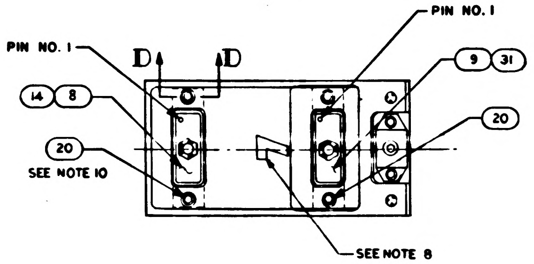


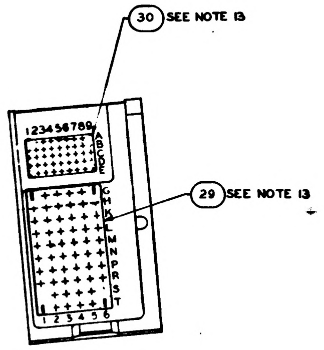
SECTION D-D
SCALE 2/1

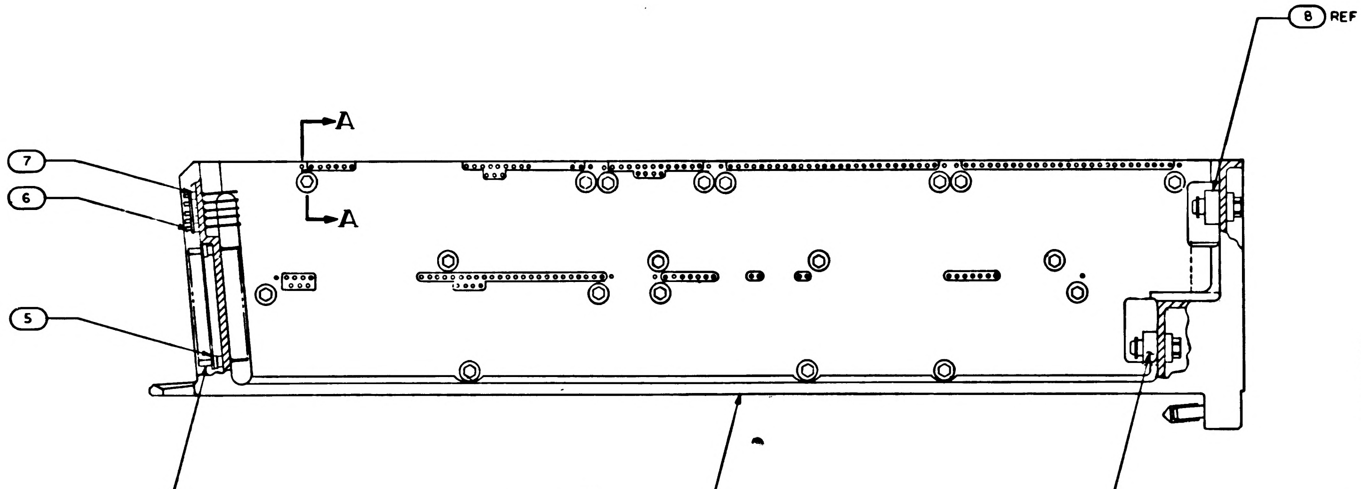


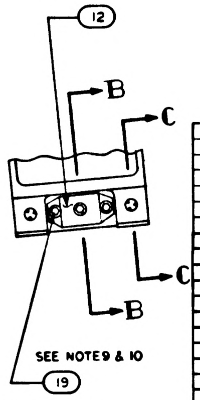
PARTIAL SECTION F-F
143 PLACES







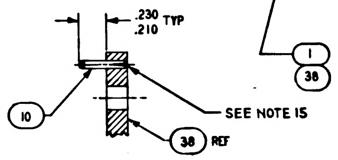




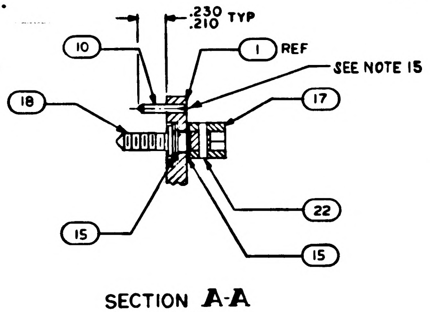
Ⓒ REPLACES WORD DWG REV B

NOTES:

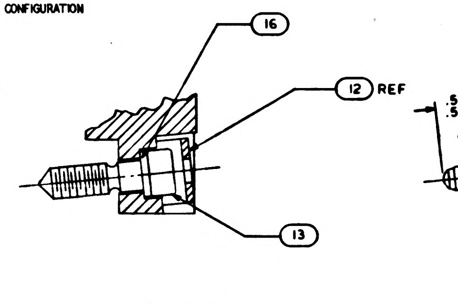
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4, 5, 6 AND 7 PER ND 1002136
3. MARK PER ND 1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023
4. BOND FIND NO. 23 AND 32 TO FIND NO. 1 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
5. BOND FIND NUMBERS 24, 25, 26, 27 AND 28 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 23 AND 32
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 19 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NOS. 19 AND 20 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATION TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. PROCURE PER PS 1007147
13. BOND FIND NOS. 29 AND 30 TO FIND NOS. 5 AND 7 PER ND 1002237
14. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.
15. FILL MODULE GUIDE PIN HOLES AND ANY ASSOSIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND [illegible]2004, POTTING SIDE ONLY.



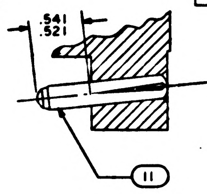
SECTION A-A
SCALE 2/1
-011 CONFIGURATION



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A7 E 9	45A7J1—35
E 10	—2
E 11	—1
E 12	—14
E 13	—7
E 14	—20
E 15	—27

QUANTITY REQUIRED						
021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
—	1		1008653	FRAME	38
—	1		1008633	WIRE LIST A A	37
—	1		1008632	WIRING HARNESS D	36
—	1		1008631	WIRING HARNESS C	35
—	1		1008630	WIRING HARNESS B	34
—	1		1008629	WIRING HARNESS A	33
—	1		1007597-011	BUFFER RESISTOR MODULE ASSY	32
—	1		1010821-2	CONNECTOR, RECEPTACLE	31
1	1		1008553	GASKET CONNECTOR MIN. TRAY	30
1	1		1008552	GASKET CONNECTOR TRAY	29
—			1009567	WIRING DIAGRAM	REF
	—		1009557	WIRING DIAGRAM	REF
1	—		1015758	WIRE LIST A A	28
1	—		1015757	WIRING HARNESS D	27
1	—		1015756	WIRING HARNESS C	26
1	—		1015755	WIRING HARNESS B	25
1	—		1015754	WIRING HARNESS A	24
1	—		1007092	BUFFER RESISTOR MODULE ASSY	23
19	~~19~~		MS171433	PIN, SPRING	22
4	4		MS 21045 C 04	NUT, SELF-LOCKING HEX	21
4	4		MS 16995-11	SCREW, CAP, SOCKET HEAD	20
3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	19
19	~~19~~		1008172	SCREW, JACK	18
19	~~19~~		1004207	DRIVE CYLINDER	17
1	1		1008099-2	WASHER	16
38	~~38~~		1004206	WASHER THRUST	15
—	1		1010821-1	CONNECTOR, RECEPTACLE	14
1	1		1008098	SCREW, SOCKET HEAD	13
1	1		1001317	RETAINER, JACK SCREW	12
2	2		1010620-5	PIN, GUIDE	11
12	12		MS[illegible]56-604	PIN, GUIDE	10
1	—		1010622-2	CONNECTOR, RECEPTACLE	9
1	—		1010622-1	CONNECTOR, RECEPTACLE	8
45	45		1006775	INSULATOR, WRAPOST, MALE MIN	7
45	45		1006782-2	CONTACT, WRAPOST, MALE MIN	6
60	60		1010383-1	INSULATOR, WRAPOST, MALE	5
60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
143	143		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
143	143		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
1	~~1~~		1008527	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007577		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ±.02
ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN J. Janounek DATE 30 SEP 64
CHECKED 6 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL W Kaylo 4/1/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

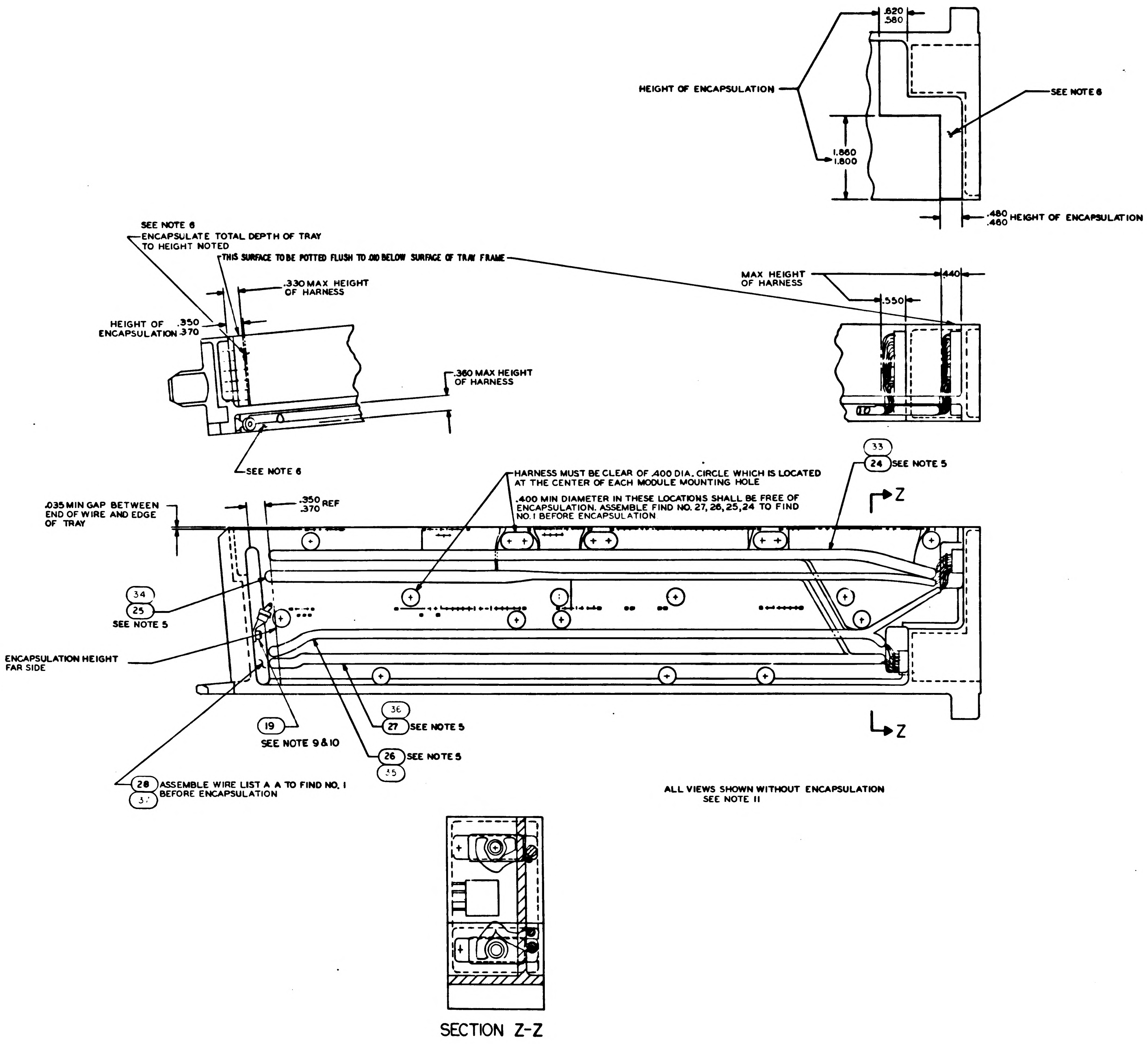
FRAME ASSEMBLY
TRAY 7

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO 1007537
SCALE 1/1
WT
SHEET 1 OF 2

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		REPLACES WORD [illegible] REV B PER TDRR 13737		4/64	WK
D		REV PER TDRR 15156		29 Dec 64	WK
E		REV PER TDRR 15239			
F		REVISED PER TDRR 15948		11 FEB 65	
G		REVISED PER TDRR 16268		5 FEB 65	JJ
H		REVISED PER TDRR 17613		25 MAR 65	L.K.
J		REVISED PER TDRR 18690		4 MAY 65	SF
K		REVISED PER TDRR 18691		MAY 65	J
L		REVISED PER TDRR 18695		MAY 65	


HEIGHT OF ENCAPSULATION
.620
.580
1.860
1.800
SEE NOTE 6
.480
.460 HEIGHT OF ENCAPSULATION
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.330 MAX HEIGHT OF HARNESS
HEIGHT OF ENCAPSULATION .350 .370
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6
MAX HEIGHT OF HARNESS
.440
.550
HARNESS MUST BE CLEAR OF .400 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO. 27, 26, 25, 24 TO FIND NO. 1 BEFORE ENCAPSULATION
33
24 SEE NOTE 5
Z
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350
.370 REF
34
25
SEE NOTE 5
ENCAPSULATION HEIGHT FAR SIDE
19
SEE NOTE 9 & 10
36
27 SEE NOTE 5
26 SEE NOTE 5
35
28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
37
Z
SECTION Z-Z

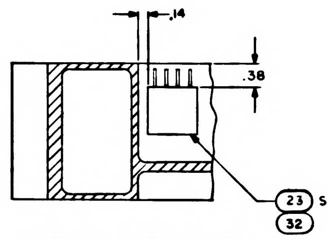
ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	ACSP PN	
	DRAWN Jasmunde DATE 30 SEP 64	FRAME ASSEMBLY TRAY 7
	CHECKED 6 OCT 64	
	APPROVAL 8 OCT 64	
DO NOT SCALE THIS DRAWING	APPROVAL	
MATERIAL —	NASA APPROVAL	CODE IDENT NO. 80230 · SIZE E · 1007537
CONTRACT NAS 9-497	MIT APPROVAL	SCALE FULL · SHEET 2 OF 2

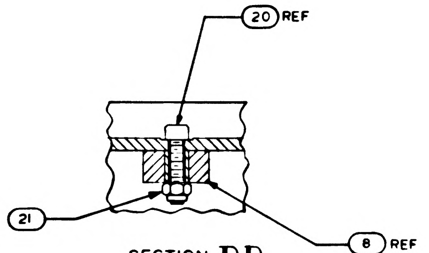
1007537

NOTICE WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

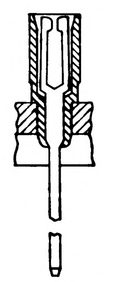
SYM	DESCRIPTION	DATE	APPROVAL
C	[illegible] WORD DWG [illegible] PER TDRR 13939		
D	REV PER TDRR 15156	29 [illegible] 64	
E	REV PER TDRR 15239		
F	REVISED PER TDRR 15948		
G	REVISED PER TDRR 16268		
H	REVISED PER TDRR 17613		
J	REVISED PER TDRR 1869[illegible]		
K	REVISED PER TDRR 1869[illegible]	MAY [illegible]	
L	REVISED PER TDRR 18693	MAY 65	
M	REVISED PER TDRR 20[illegible]		



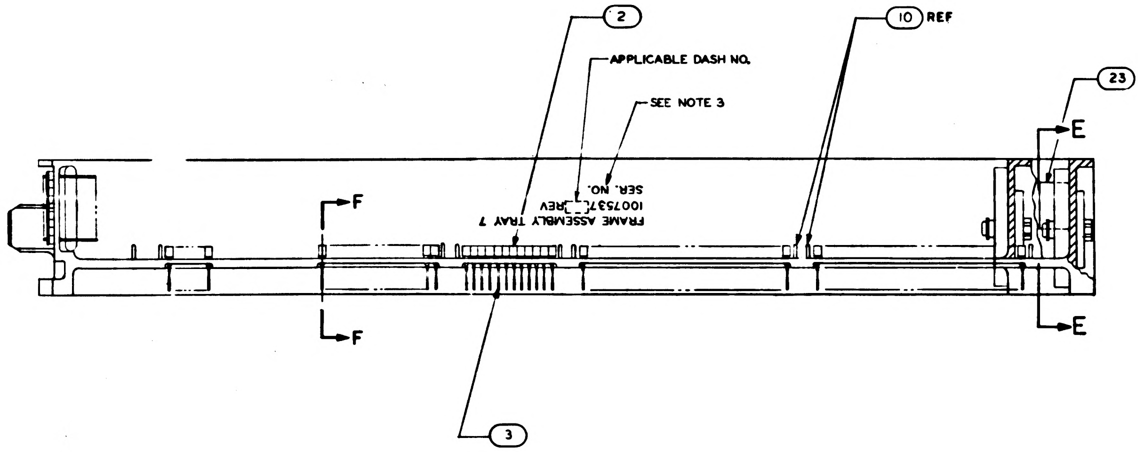
PARTIAL SECTION E-E

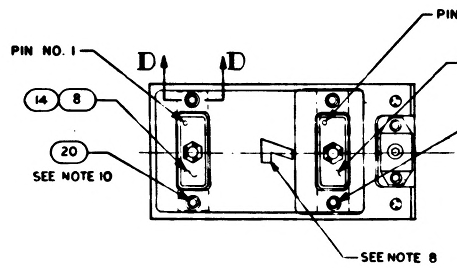


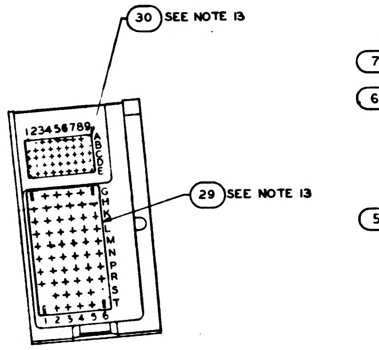
SECTION D-D
SCALE 2/1

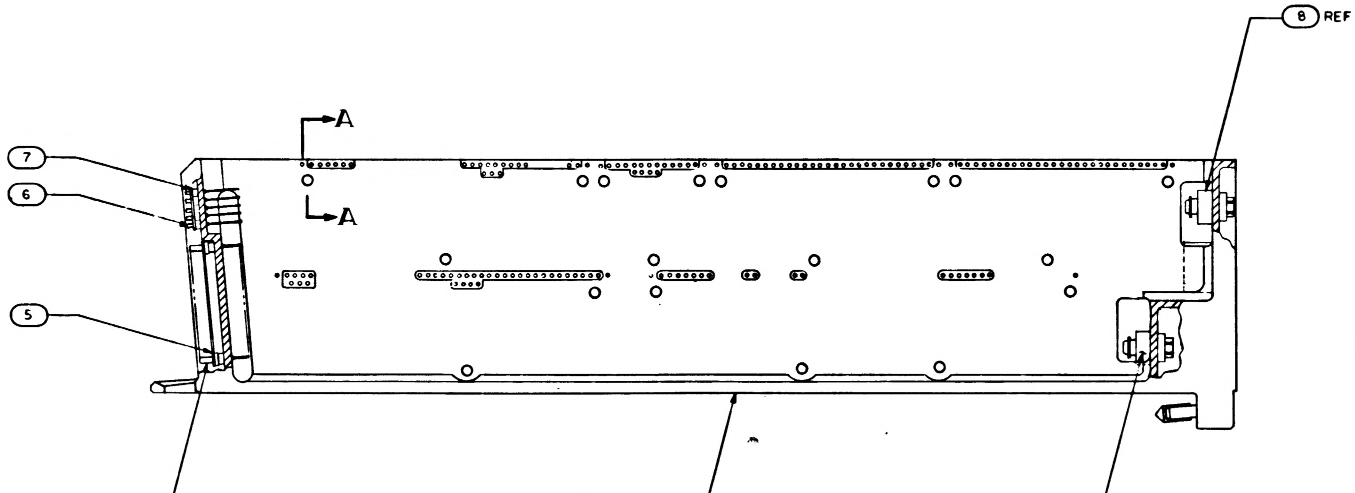


PARTIAL SECTION F-F
143 PLACES

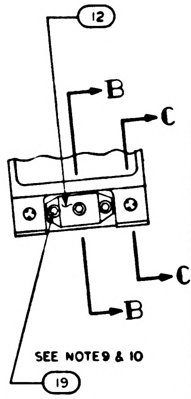


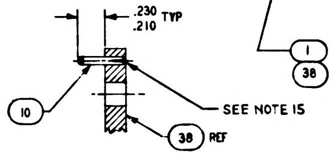






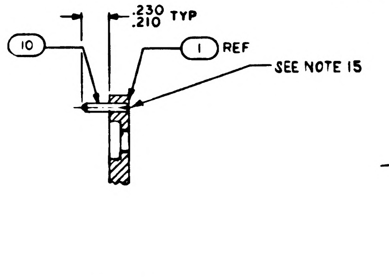
Ⓒ REPLACES WORD DWG REV B



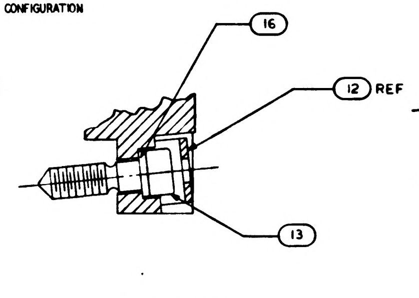


SECTION A-A
SCALE 2/1
-011 CONFIGURATION

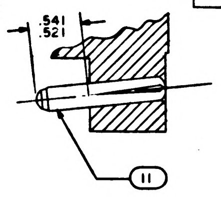
TERMINATION CHART	
FROM	TO
45A7 E 9	45A7J1-35
E 10	-2
E 11	-1
E 12	-14
E 13	-7
E 14	-20
E 15	-27



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4, 5, 6 AND 7 PER ND 1002136
3. MARK PER ND 1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023
4. BOND FIND NO. 23 AND 32 TO FIND NO. 1 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
5. BOND FIND NUMBERS 24, 25, 26, 27 AND 28 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 23 AND 32
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 19 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NOS. 19 AND 20 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATION TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071.. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. PROCURE PER PS 1007147
13. BOND FIND NOS. 29 AND 30 TO FIND NOS. 5 AND 7 PER ND 1002237
14. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.
15. FILL MODULE [illegible] HOLES AND ANY ASSOSIATED CRA[illegible] PLATING (AFTER [illegible] PIN INSERTION) USING TYPE I A[illegible] PER ND100200[illegible] [illegible]ING SIDE ONLY.

		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
		—	1		1008653	FRAME	38
		—	1		1008633	WIRE LIST A A	37
		—	1		1008632	WIRING HARNESS D	36
		—	1		1008631	WIRING HARNESS C	35
		—	1		1008630	WIRING HARNESS B	34
		—	1		1008629	WIRING HARNESS A	33
		—	1		1007597-011	BUFFER RESISTOR MODULE ASSY	32
		—	1		1010821-2	CONNECTOR, RECEPTACLE	31
		1	1		1008553	GASKET CONNECTOR MIN. TRAY	30
		1	1		1008552	GASKET CONNECTOR TRAY	29
		—	☒		1009567	WIRING DIAGRAM	REF
		☒	—		1009557	WIRING DIAGRAM	REF
		1	—		1015758	WIRE LIST A A	28
		1	—		1015757	WIRING HARNESS D	27
		1	—		1015756	WIRING HARNESS C	26
		1	—		1015755	WIRING HARNESS B	25
		1	—		1015754	WIRING HARNESS A	24
		1	—		1007092	BUFFER RESISTOR MODULE ASSY	23
		~~19~~	~~19~~		~~MS171433~~	~~PIN, SPRING~~	22
		4	4		MS 21045 C 04	NUT, SELF-LOCKING HEX	21
		4	4		MS 16995-11	SCREW, CAP, SOCKET HEAD	20
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	19
		~~19~~	~~19~~		~~1008172~~	~~SCREW, JACK~~	18
		~~19~~	~~19~~		~~1004207~~	~~DRIVE CYLINDER~~	17
		1	1		1008099-2	WASHER	16
		~~38~~	~~38~~		~~1004206~~	~~WASHER THRUST~~	15
		—	1		1010821-1	CONNECTOR, RECEPTACLE	14
		1	1		1008098	SCREW, SOCKET HEAD	13
		1	1		1001317	RETAINER, JACK SCREW	12
		2	2		1010620-5	PIN, GUIDE	11
		12	12		MS[illegible]504	PIN, GUIDE	10
		1	—		1010622-2	CONNECTOR, RECEPTACLE	9
		1	—		1010622-1	CONNECTOR, RECEPTACLE	8
		45	45		1006775	INSULATOR, WRAPOST, MALE MIN	7
		45	45		1006782-2	CONTACT, WRAPOST, MALE MIN	6
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	5
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		143	143		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		143	143		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	~~1~~		1008527	FRAME	1

QUANTITY REQUIRED
LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007577		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ±.02
ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497

DRAWN DATE 30 SEP 64
CHECKED 6 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 7

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007537
SCALE 1/1
WT
SHEET 1 OF 2

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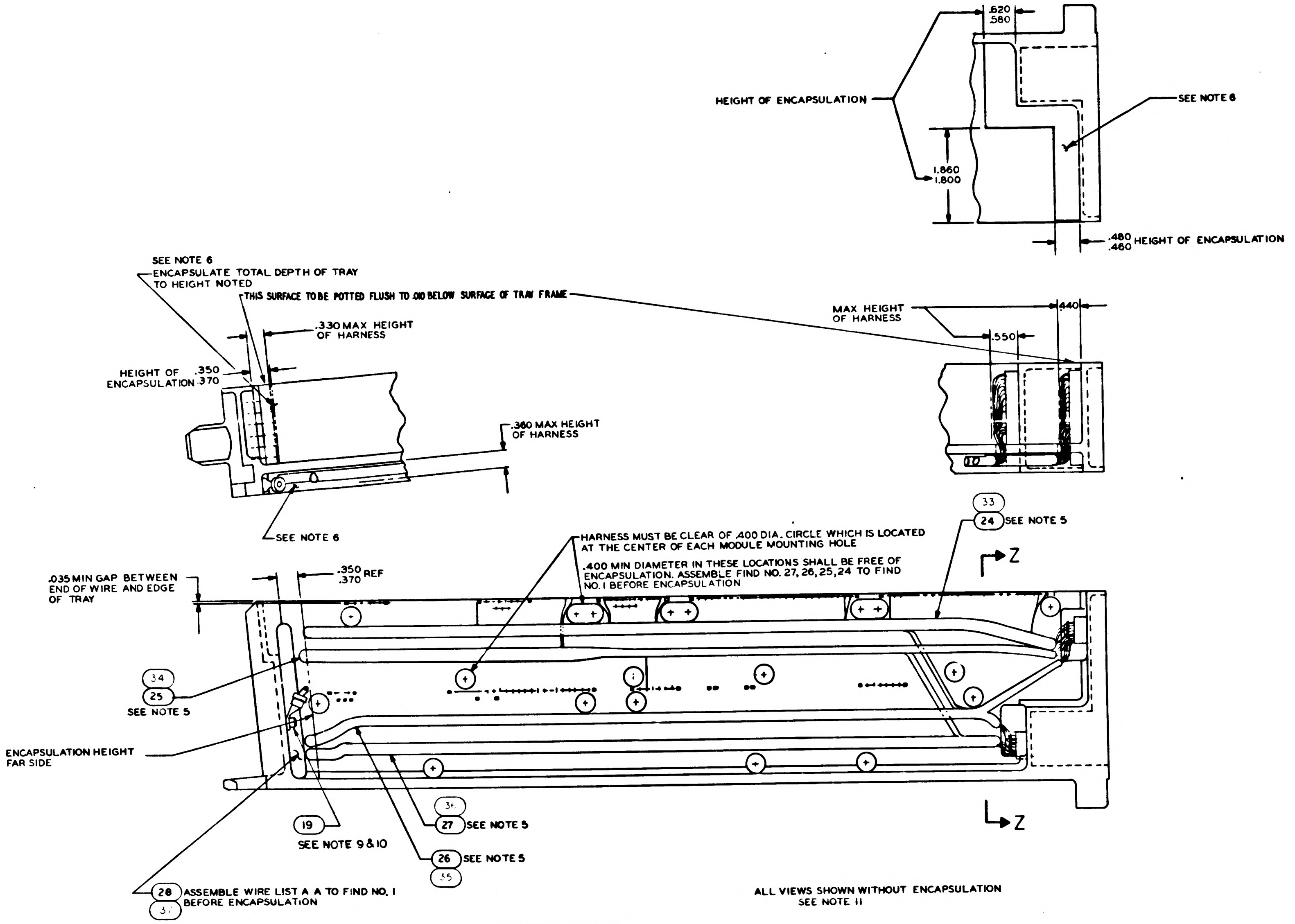
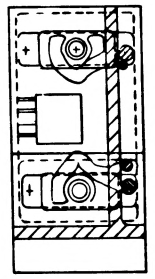
REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		[illegible]		[illegible]	[illegible]
D		[illegible] PER TDRR [illegible]		29 June 64	[illegible]
E		REV PER TDRR 15239			
F		REVISED PER TDRR 159-8		[illegible]	[illegible]
G		REVISED PER TDRR 16268		3 FEB 65	[illegible]
H		REVISED PER TDRR 17613		[illegible] 65	[illegible]
J		REVISED PER TDRR 18690		MAY 65	[illegible]
K		REVISED PER TDRR 18691		[illegible] 65	[illegible]
L		REVISED PER TDRR 8695		[illegible]	[illegible]
M		REVISION STATUS CHANGED		[illegible]	[illegible]


HEIGHT OF ENCAPSULATION
.620
.580
SEE NOTE 8
1.860
1.800
.480
.460 HEIGHT OF ENCAPSULATION
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.330 MAX HEIGHT OF HARNESS
HEIGHT OF ENCAPSULATION .350 .370
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6
MAX HEIGHT OF HARNESS
.440
.550
33
24 SEE NOTE 5
HARNESS MUST BE CLEAR OF .400 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO. 27, 26, 25, 24 TO FIND NO. 1 BEFORE ENCAPSULATION
Z
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.350
.370 REF
34
25
SEE NOTE 5
ENCAPSULATION HEIGHT FAR SIDE
Z
36
27 SEE NOTE 5
19
SEE NOTE 9 & 10
26 SEE NOTE 5
35
28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
37

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



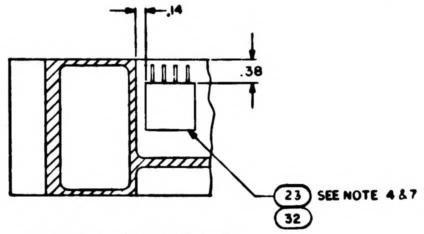
SECTION Z-Z

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± — DECIMALS ± — ANGLES ± —	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
	ACSP PN		
	DRAWN Jamowrake DATE 30 SEP 64 CHECKED 6 OCT 64 APPROVAL 8 OCT 64 APPROVAL	FRAME ASSEMBLY TRAY 7	
DO NOT SCALE THIS DRAWING			
MATERIAL —	NASA APPROVAL	CODE IDENT NO. 80230	SIZE E — 1007537
CONTRACT NAS 9-497	MIT APPROVAL	SCALE FULL	SHEET 2 OF 2

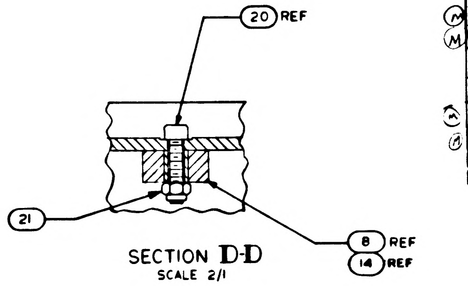
1007537

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

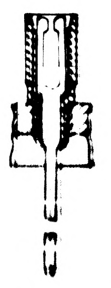
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES [illegible] DWG PER TDRR 13939	[illegible]	WA
D	REV PER TDRR 15156	29 Dec 69	[illegible]
E	REV PER TDRR 15239		[illegible]
F	REVISED PER TDRR 15948	[illegible]	[illegible]
G	REVISED PER TDRR 16268	[illegible]	EF
H	REVISED PER TDRR 17613	[illegible]	[illegible]
J	REVISED PER TDRR 18692	[illegible]	EF
K	REVISED PER TDRR 1869	[illegible]	[illegible]
L	REVISED PER TDRR 18695	[illegible]	[illegible]
M	REVISED PER TDRR 20 9	[illegible]	[illegible]
N	REVISION STATUS CHANGED	[illegible]	[illegible]


.14
.38
23
SEE NOTE 4 & 7
32

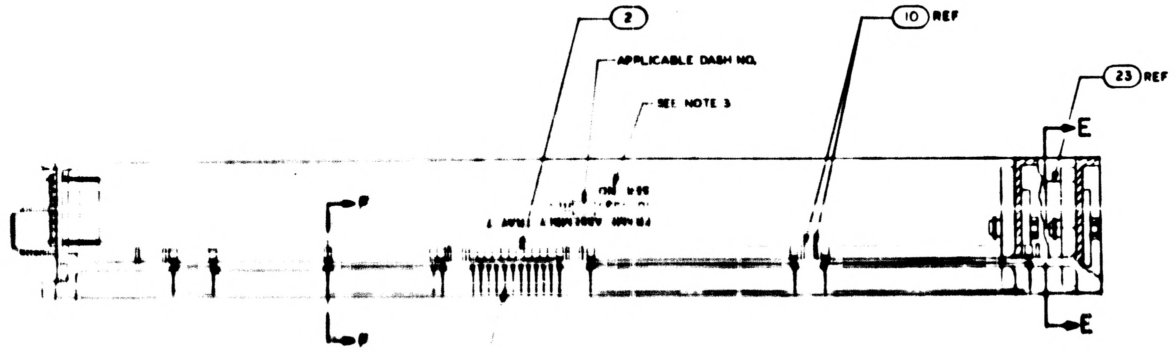
PARTIAL SECTION E-E

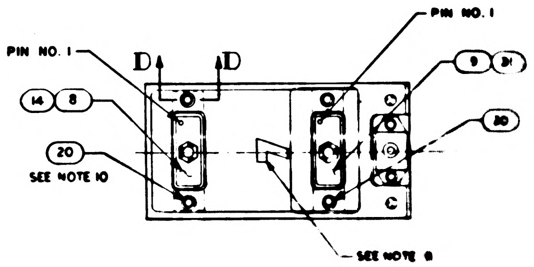

20 REF
21
8 REF
14 REF

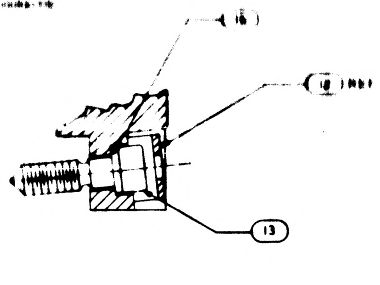
SECTION D-D
SCALE 2/1



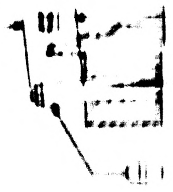
PARTIAL SECTION F-F


2
APPLICABLE DASH NO.
SEE NOTE 3
10 REF
23 REF
E
E
F
F


PIN NO. 1
D
D
PIN NO. 1
9
31
14
8
30
20
SEE NOTE 10
C
C
SEE NOTE 8



SECTION B-B
SCALE 2/1



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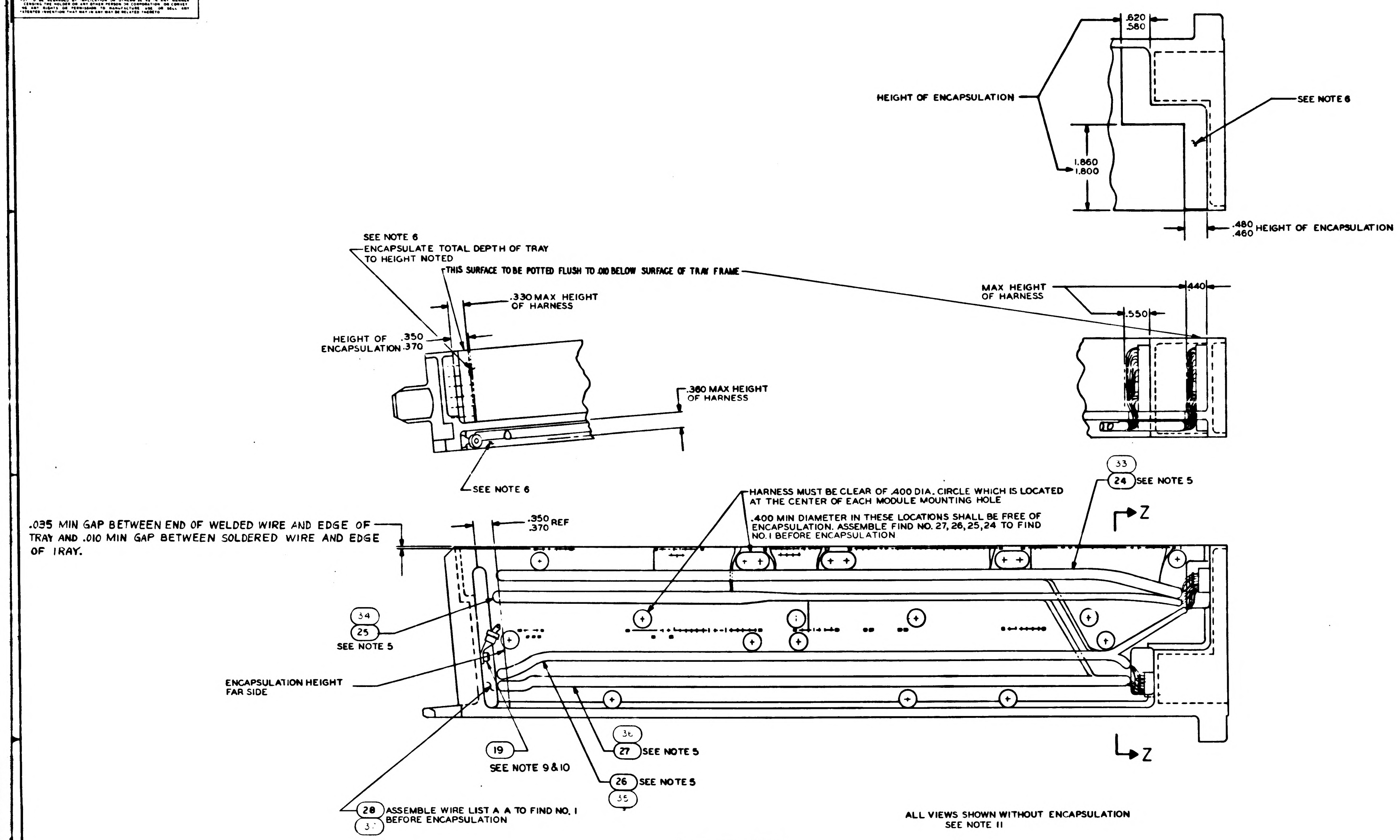
REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO	DATE	APPD
C		[illegible]		[illegible]	W
D		[illegible] PER TDRR [illegible]		[illegible]	[illegible]
E		REV PER TDRR 15239			[illegible]
F		REVISED PER TDRR 15948		[illegible]	[illegible]
G		REVISED PER TDRR 16268		[illegible]	[illegible]
H		REVISED PER TDRR 17613		[illegible]	[illegible]
J		REVISED PER TDRR 18690		MAY 65	[illegible]
K		REVISED PER TDRR 18691		MAY 65	[illegible]
L		REVISED PER TDRR 8695		[illegible]	[illegible]
M		REVISION STATUS CHANGED		19 [illegible]	[illegible]
N		REVISED PER TDRR 20687		12 [illegible]	[illegible]


HEIGHT OF ENCAPSULATION
.620
.580
1.860
1.800
SEE NOTE 6
.480
.460 HEIGHT OF ENCAPSULATION
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.330 MAX HEIGHT OF HARNESS
HEIGHT OF ENCAPSULATION .350 .370
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6
MAX HEIGHT OF HARNESS
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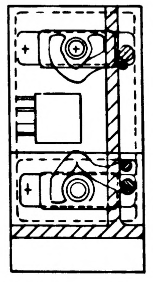
33
24 SEE NOTE 5
HARNESS MUST BE CLEAR OF .400 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO. 27, 26, 25, 24 TO FIND NO. 1 BEFORE ENCAPSULATION
Z
.035 MIN GAP BETWEEN END OF WELDED WIRE AND EDGE OF TRAY AND .010 MIN GAP BETWEEN SOLDERED WIRE AND EDGE OF TRAY.
.350
.370 REF
34
25
SEE NOTE 5
ENCAPSULATION HEIGHT FAR SIDE
19
SEE NOTE 9 & 10
36
27 SEE NOTE 5
26 SEE NOTE 5
35
Z
28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
37

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



SECTION Z-Z

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± — DECIMALS ± — ANGLES ± — DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	DRAWN Jamennah DATE 30 SEP 64 CHECKED 6 OCT 64 APPROVAL 8 OCT 64 APPROVAL	FRAME ASSEMBLY TRAY 7
MATERIAL —	NASA APPROVAL	CODE IDENT NO. 80230 · SIZE E · 1007537
CONTRACT NAS 9-497	MIT APPROVAL	SCALE FULL · SHEET 2 OF 2

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REVISIONS

	SYM	DESCRIPTION	DATE	APPROVAL
Ⓜ	C	REPLACES WORD DWG REV B PER TDRR 13939	7/64	WA
	D	REV PER TDRR 15156	29 Dec 64	[illegible]
	E	REV PER TDRR 15239		[illegible]
	F	REVISED PER TDRR 15948	[illegible]	[illegible]
Ⓜ	G	REVISED PER TDRR 16268	[illegible]	EF
Ⓜ	H	REVISED PER TDRR 17613	25 [illegible]	[illegible]
	J	REVISED PER TDRR 18690	[illegible]	EF
	K	REVISED PER TDRR 18691	7 MAY 65	[illegible]
Ⓜ	L	REVISED PER TDRR 18695	MAY 65	[illegible]
Ⓜ	M	REVISED PER TDRR 20119	[illegible] 65	[illegible]
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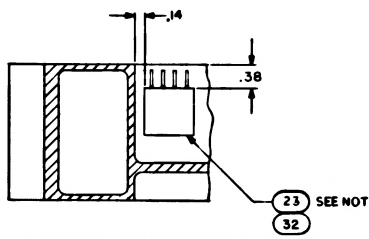
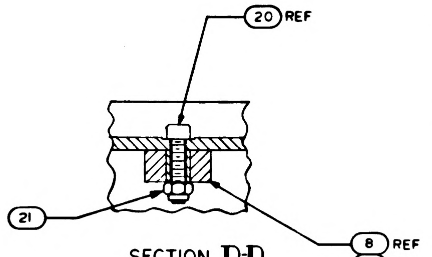
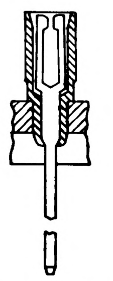
Ⓜ	P	REVISED PER TDRR 20785	[illegible]	[illegible]



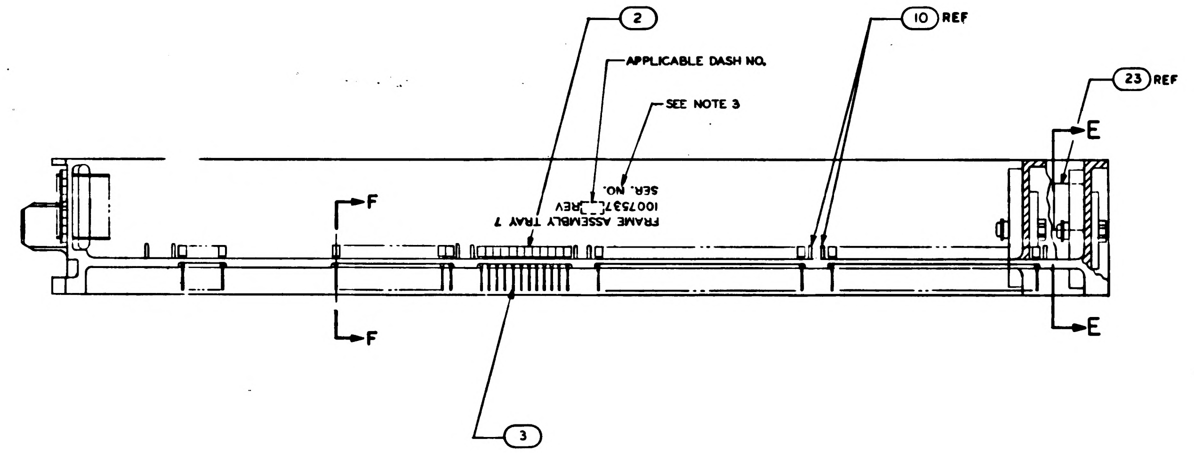
PARTIAL SECTION E-E

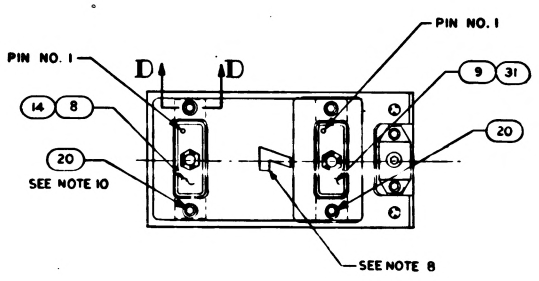


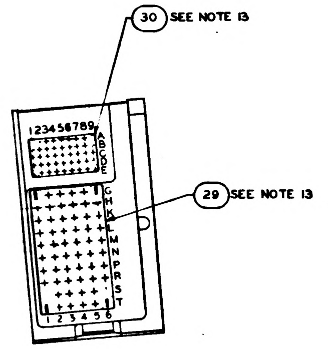
SECTION D-D
SCALE 2/1

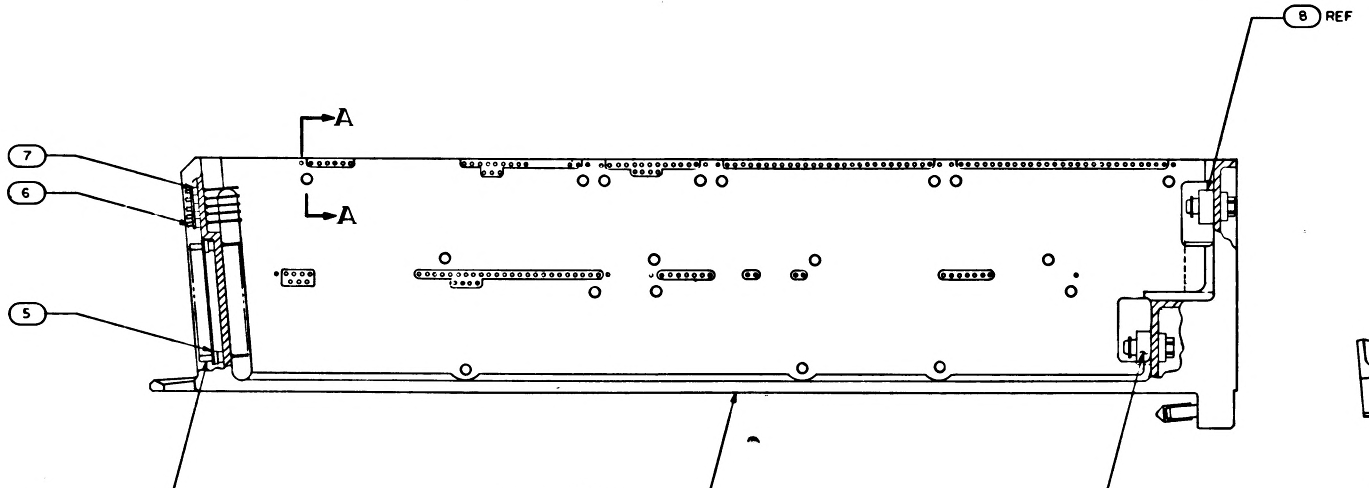


PARTIAL SECTION F-F
143 PLACES

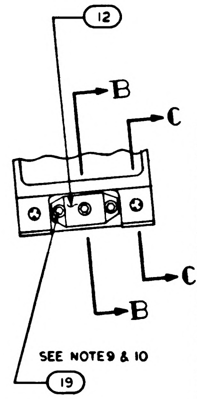


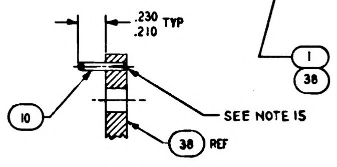






Ⓒ REPLACES WORD DWG REV B

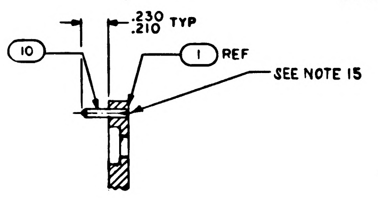




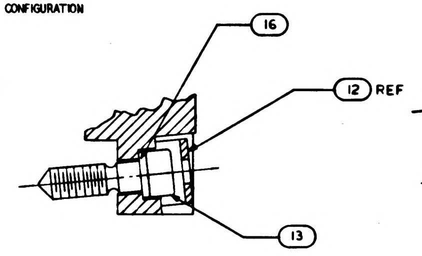
SECTION A-A
SCALE 2/1
-011 CONFIGURATION

NOTES:

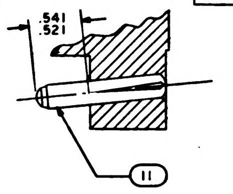
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4, 5, 6 AND 7 PER ND 1002136
3. MARK PER ND 1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023
4. BOND FIND NO. 23 AND 32 TO FIND NO. 1 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
5. BOND FIND NUMBERS 24, 25, 26, 27 AND 28 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 23 AND 32
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 19 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NOS. 19 AND 20 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATION TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071.. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. PROCURE PER PS 1007147
13. BOND FIND NOS. 29 AND 30 TO FIND NOS. 5 AND 7 PER ND 1002237
14. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A [illegible] ON CONSISTING OF 40 PARTS BY WT. 1010959-1, 100 PARTS BY WT. [illegible]959-2, AND 7 PARTS BY WT. 1006277 AND CURE AT ROOM TEMPE[illegible] FOR THREE HOURS OR ONE HOUR AT 140°F. LIMITED AMO[illegible] TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRA[illegible] CONNECTOR USING ND 1002004, TYPE I.
15. FILL MODULE [illegible] HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER [illegible] PIN INSERTION) USING TYPE I ADHESIVE PER ND 1002004, [illegible] SIDE ONLY.



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A7 E 9	45A7J1–35
E 10	–2
E 11	–1
E 12	–14
E 13	–7
E 14	–20
E 15	–27

QUANTITY REQUIRED							
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
		–	1		1008653	FRAME	38
		–	1		1008633	WIRE LIST AA	37
		–	1		1008632	WIRING HARNESS D	36
		–	1		1008631	WIRING HARNESS C	35
		–	1		1008630	WIRING HARNESS B	34
		–	1		1008629	WIRING HARNESS A	33
		–	1		1007597-011	BUFFER RESISTOR MODULE ASSY	32
		–	1		1010821-2	CONNECTOR, RECEPTACLE	31
		1	1		1008553	GASKET CONNECTOR MIN. TRAY	30
		1	1		1008552	GASKET CONNECTOR TRAY	29
		–	X		1009567	WIRING DIAGRAM	REF
		X	–		1009557	WIRING DIAGRAM	REF
		1	–		1015758	WIRE LIST A A	28
		1	–		1015757	WIRING HARNESS D	27
		1	–		1015756	WIRING HARNESS C	26
		1	–		1015755	WIRING HARNESS B	25
		1	–		1015754	WIRING HARNESS A	24
		1	–		1007092	BUFFER RESISTOR MODULE ASSY	23
		~~19~~	~~19~~		~~MS171433~~	~~PIN, SPRING~~	22
		4	4		MS 21045 C 04	NUT, SELF-LOCKING HEX	21
		4	4		MS 16995-11	SCREW, CAP, SOCKET HEAD	20
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	19
		~~19~~	~~19~~		~~1008172~~	~~SCREW, JACK~~	18
		~~19~~	~~19~~		~~1004207~~	~~DRIVE CYLINDER~~	17
		1	1		1008099-2	WASHER	16
		~~38~~	~~38~~		~~1004206~~	~~WASHER THRUST~~	15
		–	1		1010821-1	CONNECTOR, RECEPTACLE	14
		1	1		1008098	SCREW, SOCKET HEAD	13
		1	1		1001317	RETAINER, JACK SCREW	12
		2	2		1010620-5	PIN, GUIDE	11
		12	12		MS 16556-604	PIN, GUIDE	10
		1	–		1010622-2	CONNECTOR, RECEPTACLE	9
		1	–		1010622-1	CONNECTOR, RECEPTACLE	8
		45	45		1006775	INSULATOR, WRAPOST, MALE MIN	7
		45	45		1006782-2	CONTACT, WRAPOST, MALE MIN	6
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	5
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		143	143		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		143	143		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	~~1~~		1008527	FRAME	1

LIST OF MATERIALS

1007577		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497
DRAWN J. Jamowski DATE 30 SEP 64
CHECKED 6 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 7

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007537
SCALE 1/1
WT
SHEET 1 OF 2

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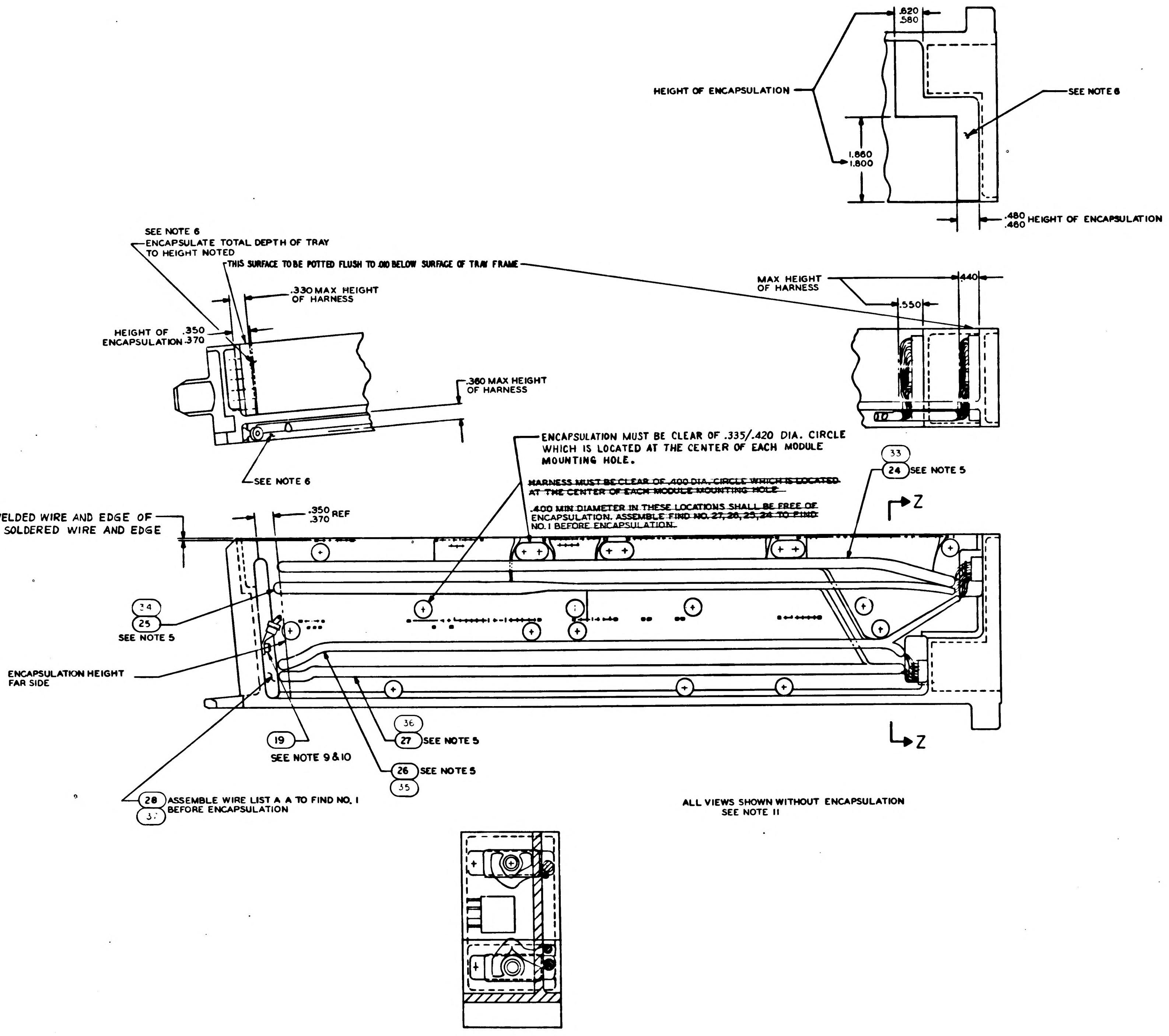
REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
[illegible]		REPLACES W[illegible] REV B PER TDRR 13737			
D		REV PER TDRR 15156		27 Jan 64	
E		REV PER TDRR 15239			
F		REVISED PER TDRR 15948			
G		REVISED PER TDRR 16268			
H		REVISED PER TDRR 17613			
J		REVISED PER TDRR 18690			
K		REVISED PER TDRR 18691			
L		REVISED PER TDRR 18695			
M		REVISION STATUS CHANGED			
N		REVISED PER TDRR 20687		12	
P		REVISED PER TDRR 20785		21	


.620
.580
HEIGHT OF ENCAPSULATION
SEE NOTE 6
1.860
1.800
.480
.460 HEIGHT OF ENCAPSULATION
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.330 MAX HEIGHT OF HARNESS
HEIGHT OF ENCAPSULATION .350 .370
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6
MAX HEIGHT OF HARNESS
.440
.550
ENCAPSULATION MUST BE CLEAR OF .335/.420 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
~~HARNESS MUST BE CLEAR OF .400 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE~~
~~.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO. 27, 26, 25, 24 TO FIND NO. 1 BEFORE ENCAPSULATION.~~
33
24 SEE NOTE 5
Z
.035 MIN GAP BETWEEN END OF WELDED WIRE AND EDGE OF TRAY AND .010 MIN GAP BETWEEN SOLDERED WIRE AND EDGE OF TRAY.
.350
.370 REF
34
25
SEE NOTE 5
ENCAPSULATION HEIGHT FAR SIDE
19
SEE NOTE 9 & 10
36
27 SEE NOTE 5
26 SEE NOTE 5
35
28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
37
Z

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11

SECTION Z-Z

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES + − + − + −	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	ACSP PN	
DO NOT SCALE THIS DRAWING	DRAWN Jamowski DATE 30 SEP 64 CHECKED 6 OCT 64 APPROVAL 8 OCT 64 APPROVAL	FRAME ASSEMBLY TRAY 7
MATERIAL —	NASA APPROVAL	CODE IDENT NO. 86238 · SIZE E · 1007537
CONTRACT NAS 9-497	MIT APPROVAL	SCALE FULL · SHEET 2 OF 2

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
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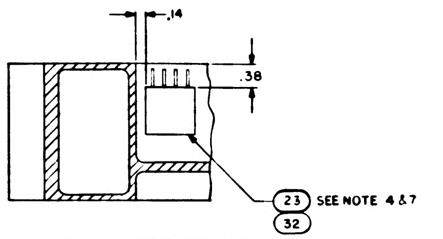
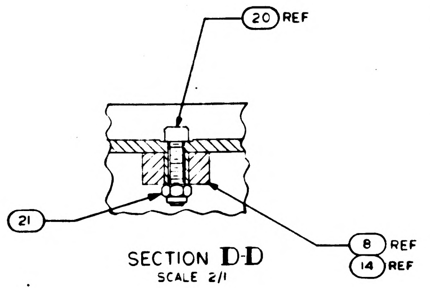
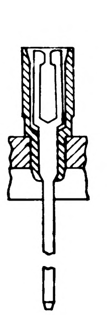
D	REV PER TDRR 15156	29 Jul 64	[illegible]
E	REV PER TDRR 15239		
F	REVISED PER TDRR 15948	1 FEB 65	
G	REVISED PER TDRR 16268		EF
H	REVISED PER TDRR 17515	25 Mar 65	
J	REVISED PER TDRR 18690	4 MAY 65	EF WD
K	REVISED PER TDRR 18691	7 MAY 65	JJJ EF
L	REVISED PER TDRR 18695	11 MAY 65	A.N.
M	REVISED PER TDRR 20119	19 JUN 65	R.B.
N	REVISION STATUS CHANGED	12 JUL 65	RP
P	REVISED PER TDRR 20785	21 JUL 65	WJR RNH
R	REVISED PER TDRR 21515	13 AUG 65	RP AU



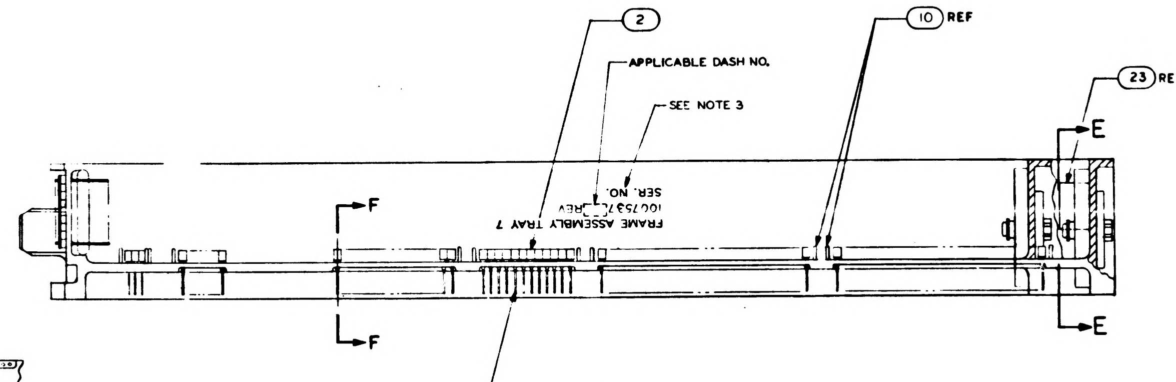
PARTIAL SECTION E-E

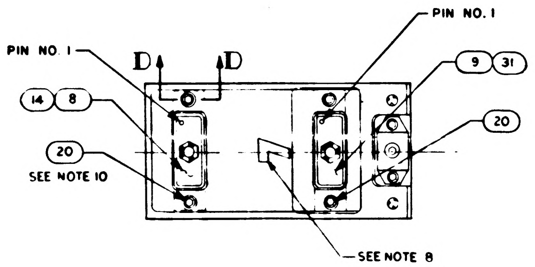


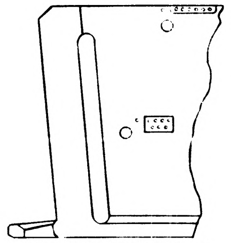
SECTION D-D
SCALE 2/1



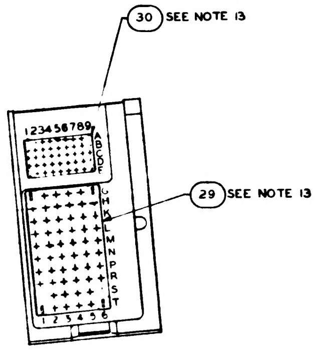
PARTIAL SECTION F-F
146 PLACES

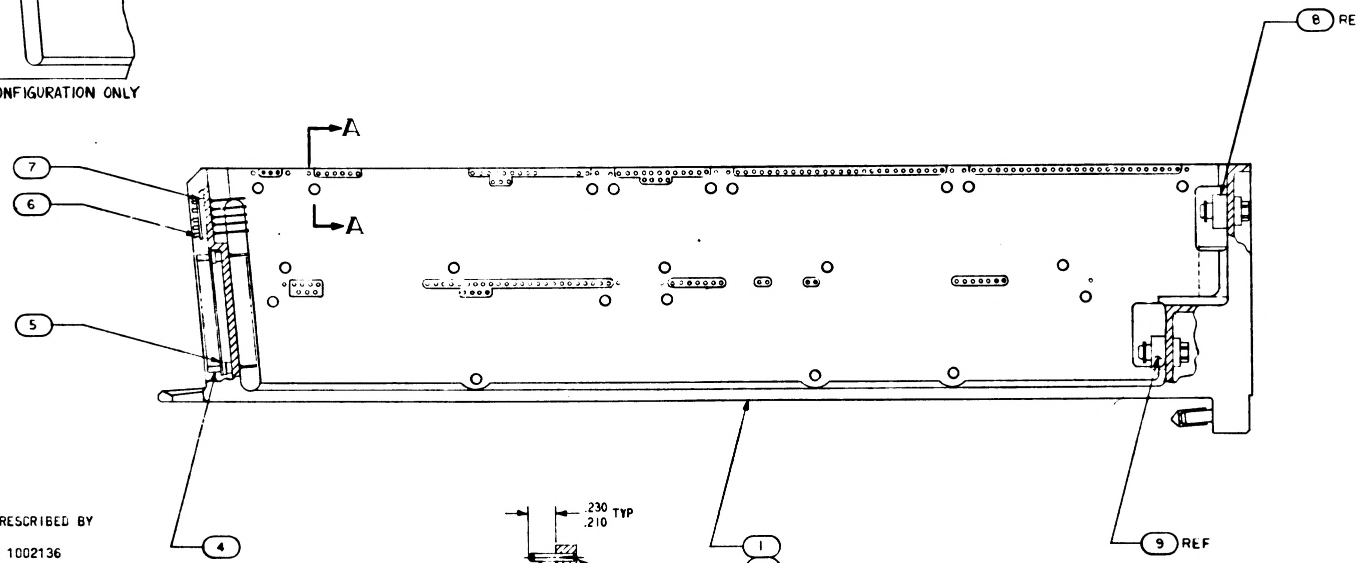


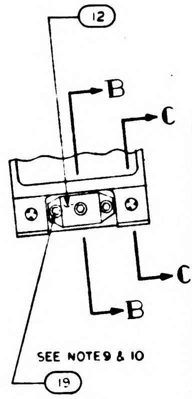




-021 CONFIGURATION ONLY



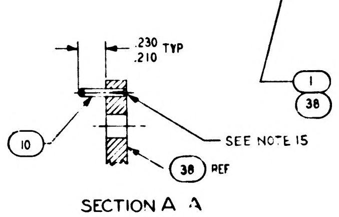




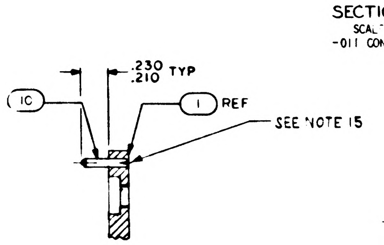
REPLACES [illegible] DWG REV B

NOTES:

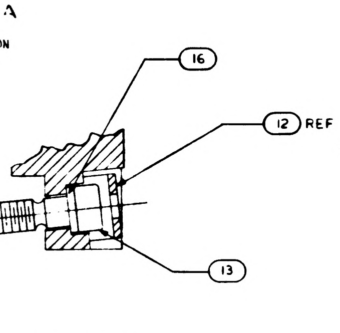
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4, 5, 6 AND 7 PER ND 1002136
3. MARK PER ND 1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023
4. BOND FIND NO. 23 AND 32 TO FIND NO. 1 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
5. BOND FIND NUMBERS 24, 25, 26, 27 AND 28 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 23 AND 32
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 19 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NOS. 19 AND 20 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATION TO BE WELDED PER ND 1002035. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071.. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. PROCURE PER PS 1007147
13. BOND FIND NOS. 29 AND 30 TO FIND NOS. 5 AND 7 PER ND 1002237
14. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A FORMULATION CONSISTING OF 40 PARTS BY WT. 1010959-1, 100 PARTS BY WT. 1010959-2, AND 7 PARTS BY WT. 1006277 AND CURE AT ROOM TEMPERATURE FOR THREE HOURS OR ONE HOUR AT 140°F. LIMITED AMOUNT ALLOWED TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004, TYPE I.
15. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND 1002004, POTTING SIDE ONLY.



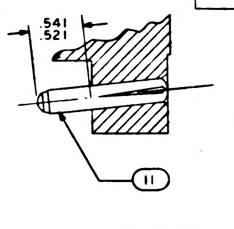
SECTION A-A
SCALE 2/1
-011 CONFIGURATION



SECTION A-A
SCALE 2/1
-021 CONFIGURATION



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

TERMINATION CHART	
FROM	TO
45A7 E9	45A7J1-35
E10	-2
E11	-1
E12	-14
E13	-7
E14	-20
E15	-27

		–	1		1008653	FRAME	38
		–	1		[illegible]	WIRE LIST A A	[illegible]
		–	1		[illegible]	WIRING HARNESS D	[illegible]
		–	1		[illegible]	WIRING HARNESS C	[illegible]
		–	1		1008630	WIRING HARNESS B	34
		–	1		1008629	WIRING HARNESS A	33
		–	1		1007597-011	BUFFER RESISTOR MODULE ASSY	32
		–	1		1010821-2	CONNECTOR, RECEPTACLE	31
		1	1		1008553	GASKET CONNECTOR MIN. TRAY	30
		1	1		1008552	GASKET CONNECTOR TRAY	29
		–			1009567	WIRING DIAGRAM	REF
			–		1009557	WIRING DIAGRAM	REF
		1			1015758	WIRE LIST A A	28
		1	–		1015757	WIRING HARNESS D	27
		1	–		1015756	WIRING HARNESS C	26
		1	–		1015755	WIRING HARNESS B	25
		1	–		1015754	WIRING HARNESS A	24
		1	–		1007092	BUFFER RESISTOR MODULE ASSY	23
		~~19~~	~~19~~		~~MS171433~~	~~PIN, SPRING~~	22
		4	4		MS 21045 C 04	NUT, SELF-LOCKING HEX	21
		4	4		MS 16995-11	SCREW, CAP, SOCKET HEAD	20
		3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	19
		~~19~~	~~19~~		~~1008172~~	~~SCREW, JACK~~	18
		~~19~~	~~19~~		~~1004207~~	~~DRIVE CYLINDER~~	17
		1	1		1008099-2	WASHER	16
		38	~~38~~		~~1004206~~	~~WASHER THRUST~~	15
		–	1		1010821-1	CONNECTOR, RECEPTACLE	14
		1	1		1008098	SCREW, SOCKET HEAD	13
		1	1		1001317	RETAINER, JACK SCREW	12
		2	2		1010620-5	PIN, GUIDE	11
		12	14		[illegible]-4	PIN, GUIDE	10
		1	–		1010622-2	CONNECTOR, RECEPTACLE	9
		1	–		1010622-1	CONNECTOR, RECEPTACLE	8
		45	45		1006775	INSULATOR, WRAPOST, MALE MIN	7
		45	45		1006782-2	CONTACT, WRAPOST, MALE MIN	6
		60	60		1010383-1	INSULATOR, WRAPOST, MALE	5
		60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
		143	146		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
		143	146		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
		1	~~1~~		1008527	FRAME	1
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
QUANTITY REQUIRED					LIST OF MATERIALS		

1007577		
NEXT ASSY	USED ON	APPLICABLE DASH NO
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± .02 ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

M I T
INSTRUMENTATION LAB
Cambridge Mass
Contract NAS 9-497
DWG NO

DRAWN [illegible] DATE 30 SEP [illegible]
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

FRAME ASSEMBLY
TRAY 7

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007537
SCALE 1/1
WT
SHEET 1 OF 2

1007537 R

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REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		REPLACES W[illegible] REV [illegible] PER TDRR 13937		[illegible]	W/
D		REV PER TDRR 15156		23 Dec 64	W/
E		REV PEP TDRR 15239			
F		REVISED PER TDRR 15948		1 FEB	
G		REVISED PER TDRR 16268		3 FEB 65	
H		REVISED PER TDRR 17619		[illegible] 65	
J		REVISED PER TDRR 18690		MAY 65	
K		REVISED PER TDRR 18691		7 [illegible] 65	
L		REVISED PER TDRR 18695		11 [illegible] 65	
M		REVISION STATUS CHANGED		19 [illegible] 65	
N		REVISED PER TDRR 20687		12 [illegible]	
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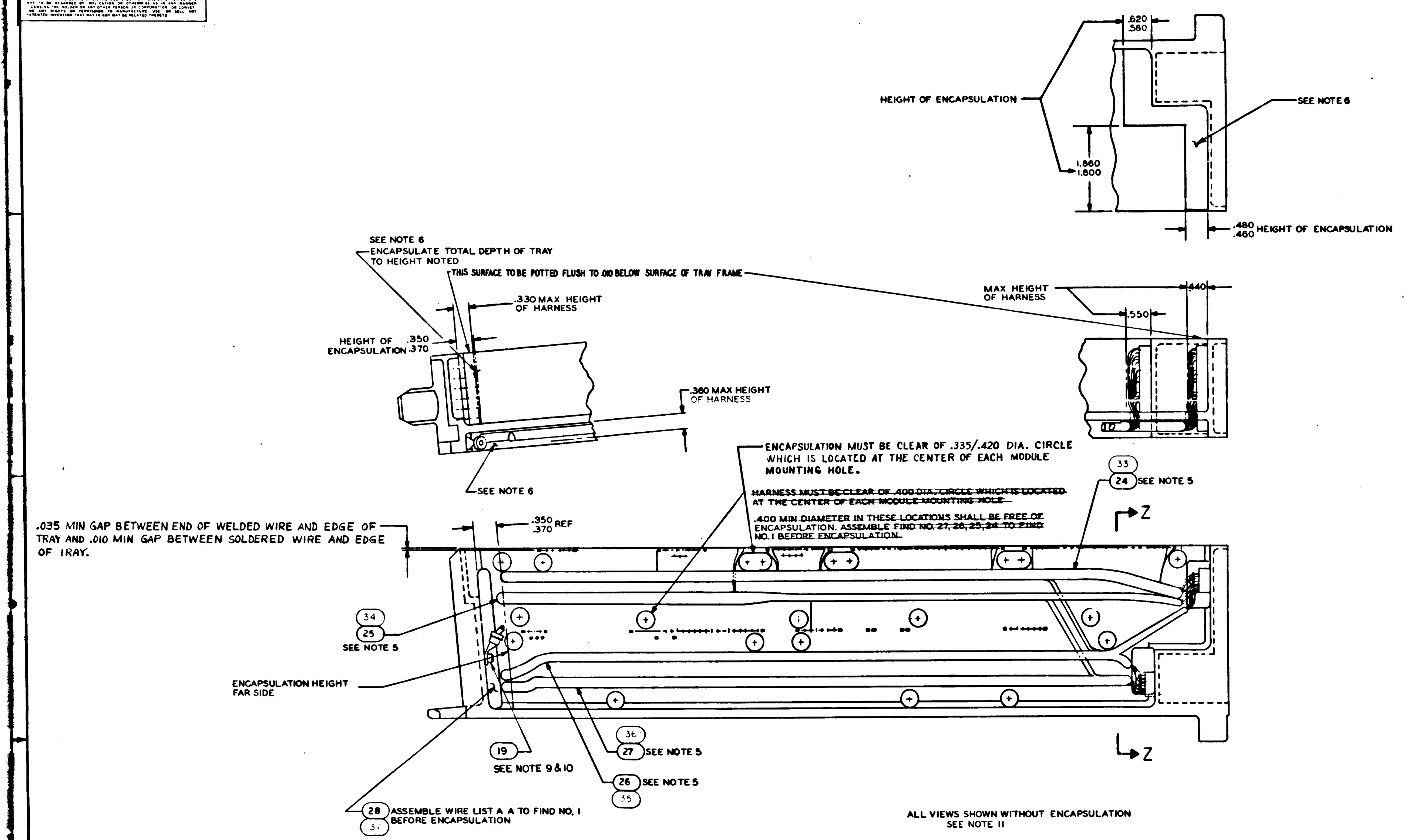

HEIGHT OF ENCAPSULATION
.620
.580
SEE NOTE 6
1.860
1.800
.480
.460 HEIGHT OF ENCAPSULATION
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.330 MAX HEIGHT OF HARNESS
HEIGHT OF ENCAPSULATION .350 .370
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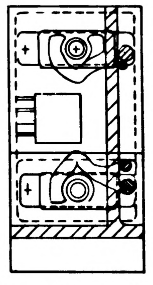
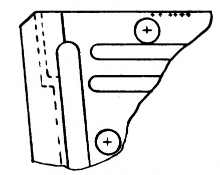
~~.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NO. 27, 26, 25, 24 TO FIND NO. 1 BEFORE ENCAPSULATION.~~
33
24 SEE NOTE 5
Z
.035 MIN GAP BETWEEN END OF WELDED WIRE AND EDGE OF TRAY AND .010 MIN GAP BETWEEN SOLDERED WIRE AND EDGE OF TRAY.
.350
.370 REF
34
25
SEE NOTE 5
ENCAPSULATION HEIGHT FAR SIDE
19
SEE NOTE 9 & 10
36
27 SEE NOTE 5
26 SEE NOTE 5
35
28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
37
Z

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



SECTION Z-Z

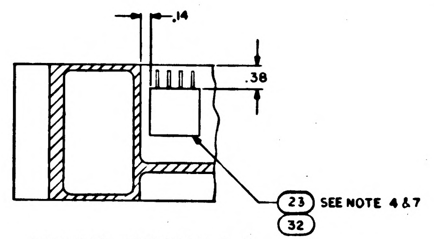


-021 CONFIGURATION ONLY

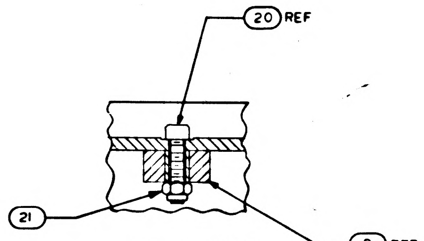
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN Jamowski DATE 30 SEP 64 CHECKED 6 OCT 64 APPROVAL APPROVAL	FRAME ASSEMBLY TRAY 7
MATERIAL ——	NASA APPROVAL	CODE IDENT NO. 80230 · SIZE E · 1007537
CONTRACT NAS 9-497	MIT APPROVAL	SCALE FULL · SHEET 2 OF 2

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

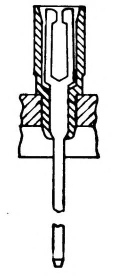
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 13939	11/6/64	WK
D	REV PER TDRR 15156	29 Dec 64	
E	REV PER TDRR 15239		
F	REVISED PER TDRR 15948	11 Feb 65	
G	REVISED PER TDRR 16268	15 FEB 65	JJJ EF
H	REVISED PER TDRR 17613	25 MAR 65	J.K.
J	REVISED PER TDRR 18690	4 MAY 65	EF
K	REVISED PER TDRR 18691	7 MAY 65	JJJ EF
L	REVISED PER TDRR 18695	11 MAY 65	A.N.
M	REVISED PER TDRR 20119	19 JUN 65	RGB
N	REVISION STATUS CHANGED	12 JUL 65	RUP
P	REVISED PER TDRR 20785	21 JUL 65	WJR RWH
R	REVISED PER TDRR 21515	13 AUG 65	RUP AU
S	REVISED PER TDRR 26402	24 FEB 66	



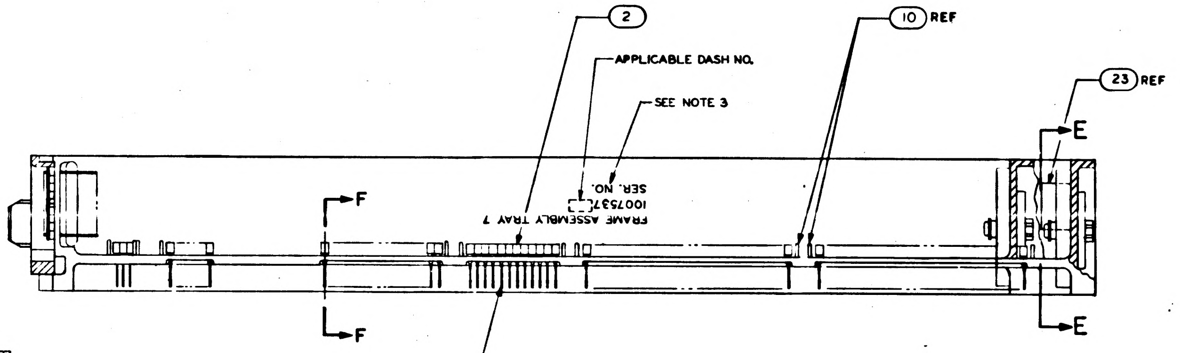
PARTIAL SECTION E-E

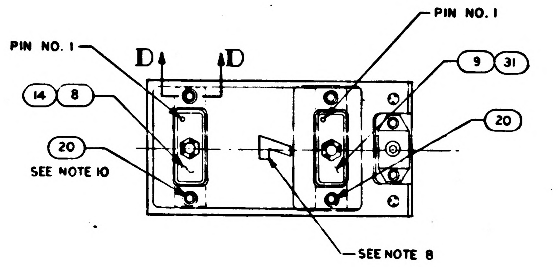


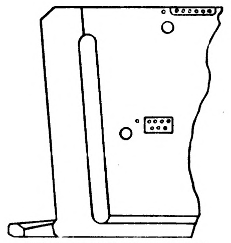
SECTION D-D
SCALE 2/1



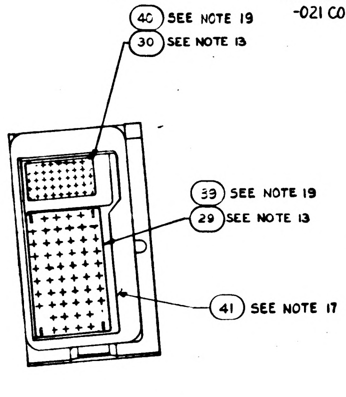
PARTIAL SECTION F-F
146 PLACES

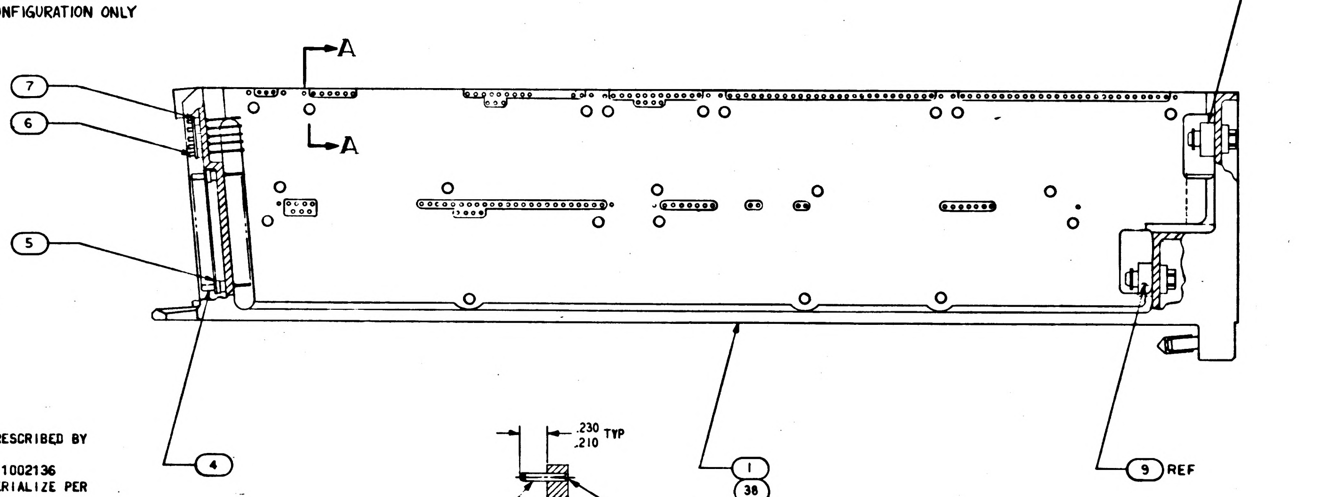


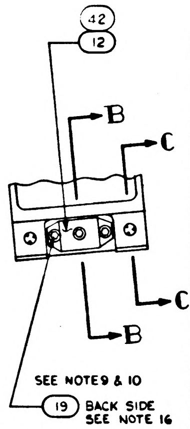




-021 CONFIGURATION ONLY







© REPLACES WORD DWG REV B

QUANTITY REQUIRED							
		021	011	EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
	☒	—	—		1008346	WIRING DIAGRAM	REF
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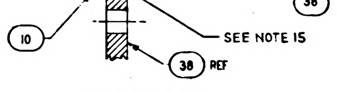
	AR	—	—		SEE NOTE 18	MOISTURE PROOFING	43
	1	—	—		1008333	RETAINER, JACK SCREW	42
	1	—	—		1008336	GASKET MINI WASP	41
	1	—	—		1008339	GASKET CONNECTOR TRAY	40
	1	—	—		1008338	GASKET CONNECTOR TRAY	39
	1	—	1		1008853	FRAME	38
	1	—	1		1008633	WIRE LIST A A	37
	1	—	1		1008632	WIRING HARNESS D	36
	1	—	1		1008631	WIRING HARNESS C	35
	1	—	1		1008630	WIRING HARNESS B	34
	—	—	1		1008629	WIRING HARNESS A	33
	1	—	1		1007597-011	BUFFER RESISTOR MODULE ASSY	32
	1	—	1		1010821-2	CONNECTOR, RECEPTACLE	31
	—	1	1		1008553	GASKET CONNECTOR MIN. TRAY	30
	—	1	1		1008552	GASKET CONNECTOR TRAY	29
	—	—	☒		1009567	WIRING DIAGRAM	REF
	—	☒	—		1009557	WIRING DIAGRAM	REF
	—	1	—		1015758	WIRE LIST A A	28
	—	1	—		1015757	WIRING HARNESS D	27
	—	1	—		1015756	WIRING HARNESS C	26
	—	1	—		1015755	WIRING HARNESS B	25
	—	1	—		1015754	WIRING HARNESS A	24
	—	1	—		1007092	BUFFER RESISTOR MODULE ASSY	23
	—	~~19~~	~~19~~		~~MS171433~~	~~PIN, SPRING~~	22
	4	4	4		MS 21045 C 04	NUT, SELF-LOCKING HEX	21
	4	4	4		MS 16995-11	SCREW, CAP, SOCKET HEAD	20
	3	3	3		MS 16995-10	SCREW, CAP, SOCKET HEAD	19
	—	~~19~~	~~19~~		~~1008172~~	~~SCREW, JACK~~	18
	—	~~19~~	~~19~~		~~1004207~~	~~DRIVE CYLINDER~~	17
	1	1	1		1008099-2	WASHER	16
	—	~~38~~	~~38~~		~~1004206~~	~~WASHER THRUST~~	15
	1	—	1		1010821-1	CONNECTOR, RECEPTACLE	14
	1	1	1		1008098	SCREW, SOCKET HEAD	13
	—	1	1		1001317	RETAINER, JACK SCREW	12
	2	2	2		1010620-5	PIN, GUIDE	11
	14	12	14		MS [illegible]56-604	PIN, GUIDE	10
	—	1	—		1010622-2	CONNECTOR, RECEPTACLE	9
	—	1	—		1010622-1	CONNECTOR, RECEPTACLE	8
	45	45	45		1006775	INSULATOR, WRAPOST, MALE MIN	7
	45	45	45		1006782-2	CONTACT, WRAPOST, MALE MIN	6
	60	60	60		1010383-1	INSULATOR, WRAPOST, MALE	5
	60	60	60		1010382-1	CONTACT, BLADE EDGE CONNECTOR	4
	146	143	146		1006781-2	CONTACT, WRAPOST, FEMALE MIN	3
	146	143	146		1006774	INSULATOR, WRAPOST, FEMALE MIN	2
	-	1	~~1~~		1008527	FRAME	1

LIST OF MATERIALS

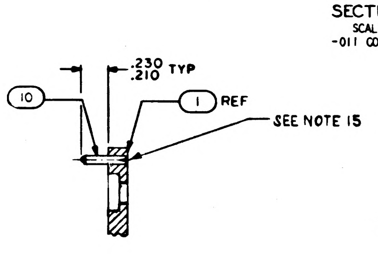
NOTES:

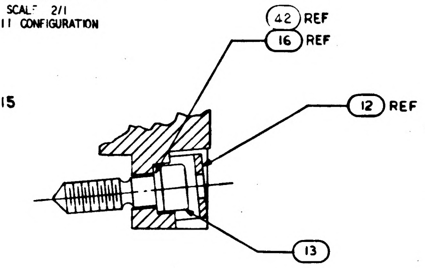
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4, 5, 6 AND 7 PER ND 1002136
3. MARK PER ND 1002019 (BLACK) .100/.140 HIGH AND SERIALIZE PER ND 1002023
4. BOND FIND NO. 23 AND 32 TO FIND NO. 1 USING FLEXIBLE FORMULATION OF NASA DRAWING 1010657 AND NASA DRAWING 1010686
5. BOND FIND NUMBERS 24, 25, 26, 27 AND 28 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
6. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A FOR -021 CONFIGURATION AND CURE CYCLE A OR B FOR -011 CONFIGURATION USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL, BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
7. SEE CONDUCTOR TERMINATION CHART FOR FIND NO. 23 AND 32
8. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
9. COAT THREADS OF FIND NO. 19 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
10. MOUNTING TORQUE FOR FIND NOS. 19 AND 20 TO FIND NO. 1 TO BE 5.0-5.5 IN. LB
11. ALL NICKEL WIRE HARNESS TERMINATION TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS REQUIRED PER ND 1002071.; ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
12. PROCURE PER PS 1007147
13. BOND FIND NOS. 29 AND 30 TO FIND NOS. 5 AND 7 PER ND 1002237
14. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A FORMULATION CONSISTING OF 40 PARTS BY WT. 1010959-1, 100 PARTS BY WT. 1010959-2, AND 7 PARTS BY WT. 1006277 AND CURE AT ROOM TEMPERATURE FOR THREE HOURS OR ONE HOUR AT 140°F. LIMITED AMOUNT ALLOWED TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004, TYPE I.
15. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND 1002004, POTTING SIDE ONLY.

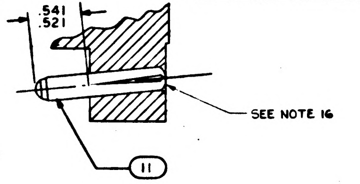


SECTION A-A
SCALE 2/1
-011 CONFIGURATION

TERMINATION CHART	
FROM	TO
45A7 E9	45A7J1-35
E10	-2
E11	-1
E12	-14
E13	-7
E14	-20
E15	-27







SECTION A-A
SCALE 2/1
-021 CONFIGURATION

SECTION B-B
SCALE 2/1

SECTION C-C
SCALE 2/1

1007577		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
Contract NAS 9-497

DRAWN J. Jannuzzi DATE 30 SEP 64
CHECKED 6 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL 11/4/64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

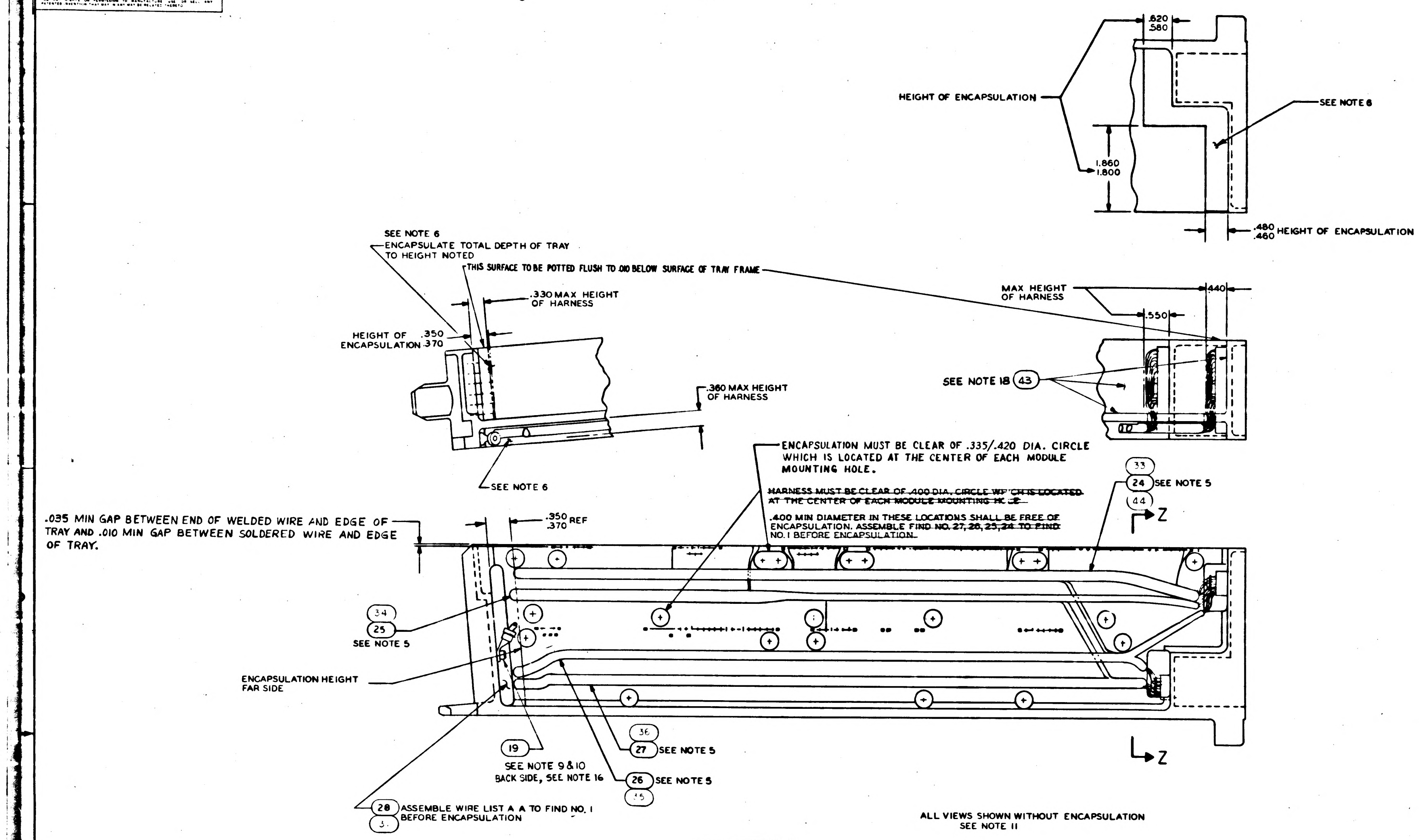
FRAME ASSEMBLY
TRAY 7

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007537
SCALE 1/1
WT
SHEET 1 OF 2

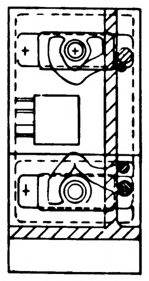
NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

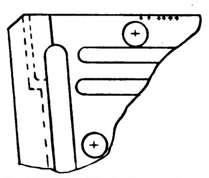
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		[illegible] REV B PER TD[illegible] 13727		[illegible]	W
D		[illegible]		29 Dec 64	[illegible]
E		REV PER TDRR 15239			
F		REVISED PER TDRR 15948		11 FEB	
G		REVISED PER TDRR 16268		5 FEB 65	
H		REVISED PER TDRR 17613		25 MAR 65	
J		REVISED PER TDRR 18690		4 MAY 65	EF
K		REVISED PER TDRR 18691		7 MAY 65	J J J / EF
L		REVISED PER TDRR 18695		11 MAY 65	A.N.
M		REVISION STATUS CHANGED		19 JUN 65	
N		REVISED PER TDRR 20687		12 JUL 65	RLP
P		REVISED PER TDRR 20785		21 JUL 65	WJR / RWH
R		REVISED PER TDRR 21515		13 AUG 65	RLP / AU
S		REVISED PER TDRR 26402		24 FEB 66	


HEIGHT OF ENCAPSULATION
.620
.580
1.860
1.800
SEE NOTE 6
.480
.460 HEIGHT OF ENCAPSULATION
SEE NOTE 6
ENCAPSULATE TOTAL DEPTH OF TRAY TO HEIGHT NOTED
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.330 MAX HEIGHT OF HARNESS
HEIGHT OF ENCAPSULATION .350 .370
.360 MAX HEIGHT OF HARNESS
SEE NOTE 6
MAX HEIGHT OF HARNESS
.550
.440
SEE NOTE 18 43
.035 MIN GAP BETWEEN END OF WELDED WIRE AND EDGE OF TRAY AND .010 MIN GAP BETWEEN SOLDERED WIRE AND EDGE OF TRAY.
.350
.370 REF
ENCAPSULATION MUST BE CLEAR OF .335/.420 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
~~HARNESS MUST BE CLEAR OF .400 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE~~
.400 MIN DIAMETER IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE ~~FIND NO. 27, 26, 25, 24 TO FIND~~ NO. 1 BEFORE ENCAPSULATION.
33
24 SEE NOTE 5
44
Z
34
25
SEE NOTE 5
ENCAPSULATION HEIGHT FAR SIDE
19
SEE NOTE 9 & 10
BACK SIDE, SEE NOTE 16
36
27 SEE NOTE 5
26 SEE NOTE 5
35
28 ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
3.
Z

ALL VIEWS SHOWN WITHOUT ENCAPSULATION
SEE NOTE 11



SECTION Z-Z



-021 CONFIGURATION ONLY

16. FILL CAVITY PER ND1002009, METHOD J.

17. BOND FIND NO. 41 TO FIND NO. 38 PER ND1002151, USING ADHESIVE MIL-A-25457.

18. PAINT THE MODULE MOUNTING SURFACE AND THE SURFACE PERPENDICULAR TO THE MOUNTING SURFACE PER ND1002292, USING MIL-C-15328. WASH PRIMER FOLLOWED BY MIL-P-8585 ZINC CHROMATE PRIMER FOLLOWED BY 1012543-003 PAINT. MODULE GUIDE PINS, CONNECTOR FEMALE PINS AND INSULATOR ARE TO BE FREE OF PAINT. SEE FIND NO. 43.

19. APPLY A BEAD OF SILICONE GREASE MIL-S-8660 BETWEEN THE ROWS OF MALCO PINS IN BOTH DIRECTIONS BETWEEN THE GASKETS AND THE TRAY FRAME AND AROUND THE PERIMETER OF THE GASKETS ON THE MALCO CONNECTOR. NOMINAL BEAD DIAMETER SHALL BE 1/8 INCH.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ – + – + –
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Jamowak DATE 30 SEP 64
CHECKED 6 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY TRAY 7

CODE IDENT NO. 80230
SIZE E
1007537
SCALE FULL
SHEET 2 OF 2

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1007537

REVISIONS 12031			
SYM	DESCRIPTION	DATE	APPROVAL

DASH NO. 011

PART NO.	DESCRIPTION	REQD.
1008527-001	Frame Tray 7	1
1006774	Insulator, Wrapost, Female Miniature	143
1006781-2	Contact, Wrapost, Female Miniature	143
1010382-1	Contact, Blade Edge Connector	60
1010383-1	Insulator, Wrapost, Male	60
1010622-1	Connector Receptacle	1
1010622-2	Connector Receptacle	1
1010620-4	Pin, Guide	12
1010620-5	Pin, Guide	2
1001317	Retainer, Jack Screw	1
1008172	Screw, Jack	19
1008098	Screw, Socket Head	1
1004206	Washer, Thrust	38
1008099-2	Washer	1
1007092	Assembly, Buffer Resistor Module	1
MS 16995-10	Screw, Cap, Socket Head	3
MS 16995-11	Screw, Cap, Socket Head	4
MS 21045 C 04	Nut, Self-Locking Hex	4
1006782-2	Contact, Wrapost-Male, Miniature	45
1006775	Insulator, Wrapost-Male, Miniature	45
MS 171433	Pin Spring	19
1004207	Drive Cylinder	19
1008552 -001	Gasket, Connector	1
1008553 -001	Gasket, Connector	1

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007577	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

M I T
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN DATE 7/15/64
CHECKED
APPROVAL
APPROVAL 8/24/64
NASA APPROVAL 8/25/64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 7
(100 SERIES)

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007537
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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1007538 A (r)

REVISIONS 12031			
SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED BY CONFIGURATION DWG REV B PER TDRR 14706	12/16/64	9B W.T.

DASH NO. 011

PART NO.	DESCRIPTION	REQD.
1008528-001	Frame, Tray 8	1
1006774	Insulator, Wrapost, Female Miniature	247
1006781-2	Contact, Wrapost, Female Miniature	247
1010382-1	Contact, Blade Edge Connector	60
1010383-1	Insulator, Wrapost, Male	60
1010622-1	Connector Receptacle	1
1010620-4	Pin, Guide	18
1010620-5	Pin, Guide	2
1001317	Retainer, Jack Screw	1
1008172	Screw, Jack	23
1008098	Screw, Socket Head Externally Relieved Body	1
1004206	Washer, Thrust	46
1008099-2	Washer	1
1004207	Drive Cylinder	23
MS 16995-10	Screw, Cap, Socket Head	3
MS 16995-11	Screw, Cap, Socket Head	2
MS 21045 C 04	Nut, Self-Locking Hex	2
1006782-2	Contact, Wrapost-Male, Miniature	45
1006775	Insulator, Wrapost-Male, Miniature	45
MS 171433	Pin, Spring	23
1008552-001	Gasket, Connector	1
1008553-001	Gasket, Connector	1

Ⓐ REPLACED BY CONFIGURATION DWG REV B

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007578	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN Karen DATE 2/15/64
CHECKED
APPROVAL
APPROVAL C. B. Frost 8/24/64
NASA APPROVAL [illegible] 9/4/64
MIT APPROVAL W Kupfer 2 Sep 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

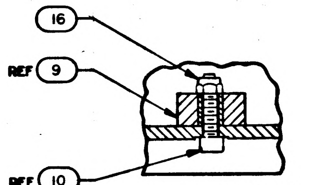
FRAME ASSEMBLY
TRAY 8
(100 SERIES)

CODE IDENT NO. SIZE C NASA DRAWING NO. 1007538
SCALE WT SHEET 1 OF 1

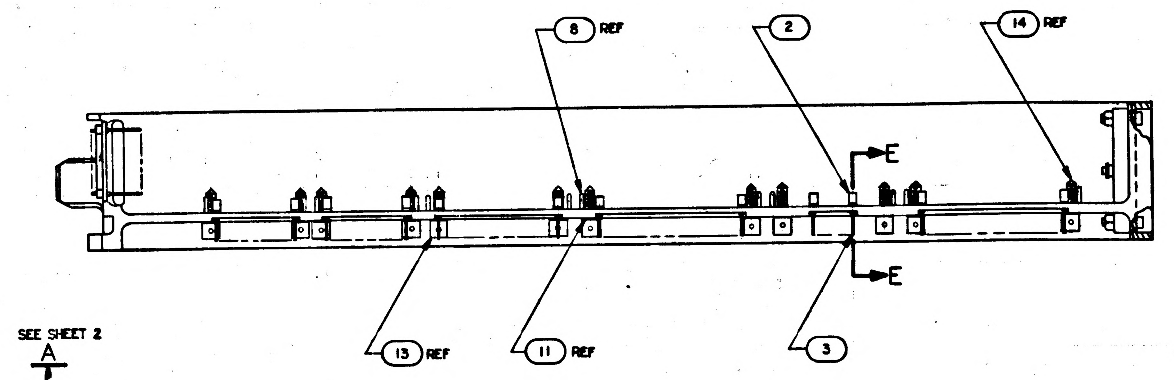
INCHES 0 1 2 PHOTOGRAPHIC SCALE ONLY

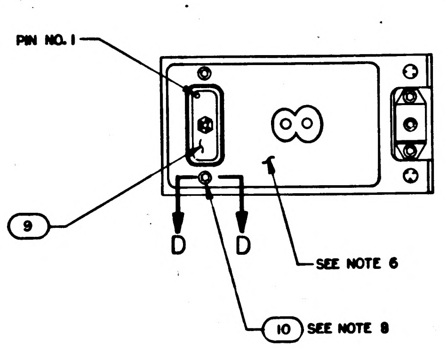
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

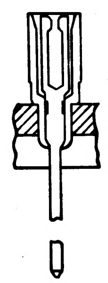
REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706			9/1/64	WK



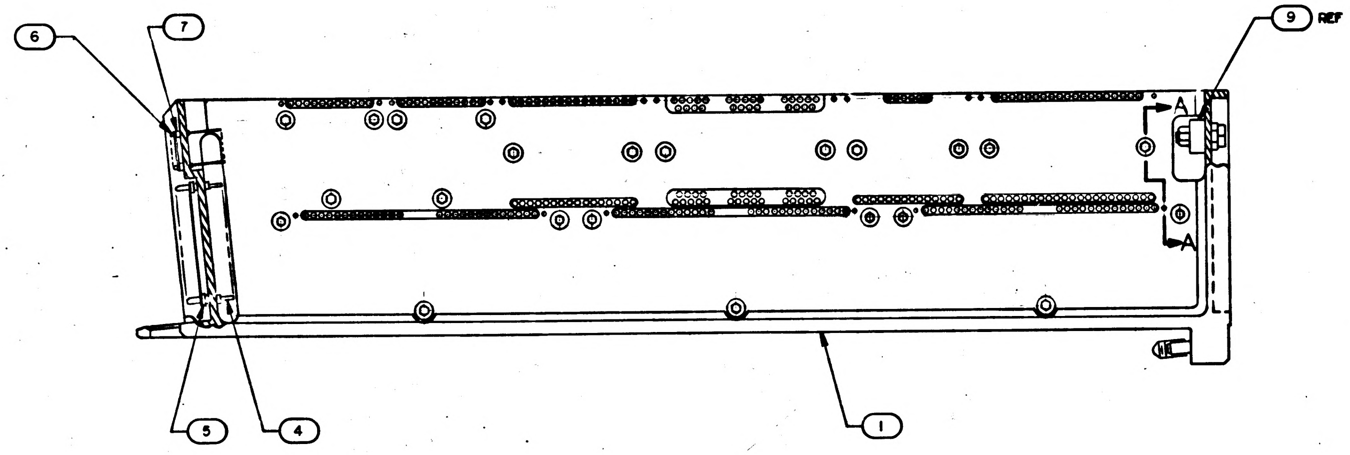
SECTION D-D
SCALE 2/1

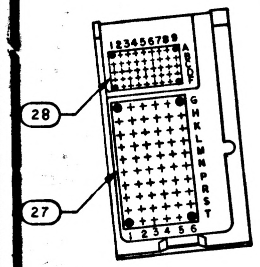


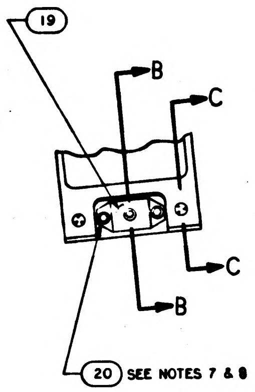




PARTIAL SECTION E-E
247 PLACES

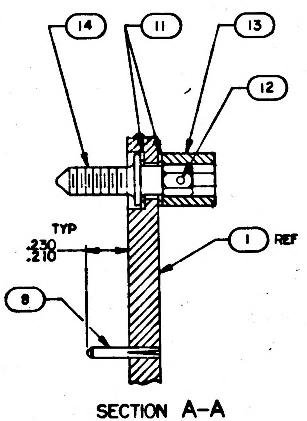




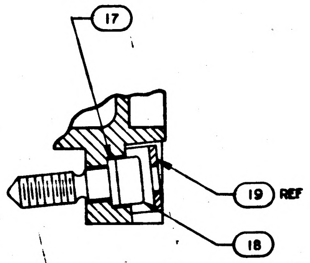


Ⓑ REPLACES WORD DWG REV A

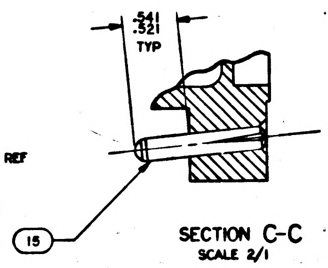
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL D 70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
4. BOND FIND NOS. 21,22,23,24,25 AND 26 TO FIND NO. 1 PER ND1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND1002071.
ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT



SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009568		WIRING DIAGRAM	REF
1	1008553		GASKET, CONNECTOR	28
1	1008552		GASKET, CONNECTOR	27
1			WIRE LIST A A	26
1			WIRING HARNESS E	25
1			WIRING HARNESS D	24
1			WIRING HARNESS C	23
1			WIRING HARNESS B	22
1			WIRING HARNESS A	21
3	MS16995-10		SCREW, CAP, SOCKET HEAD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HEAD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
23	1008172		SCREW, JACK	14
23	1004207		DRIVE CYLINDER	13
23	MS171433		PIN, SPRING	12
46	1004206		WASHER, THRUST	11
2	MS16995-11		SCREW, CAP, SOCKET HEAD	10
1	1010622-1		CONNECTOR, RECEPTACLE	9
18	1010620-4		PIN, GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	1010382-1		CONTACT, BLADE EDGE CONN	4
247	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
247	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008528		FRAME	1
-011	LIST OF MATERIALS			

1007578	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± —— ± —— ± ——
DO NOT SCALE THIS DRAWING
MATERIAL
——

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN B J Fagian 2 Sept 64
CHECKED 15 Sept 64
APPROVED
APPROVED 12 Sept 64
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 8

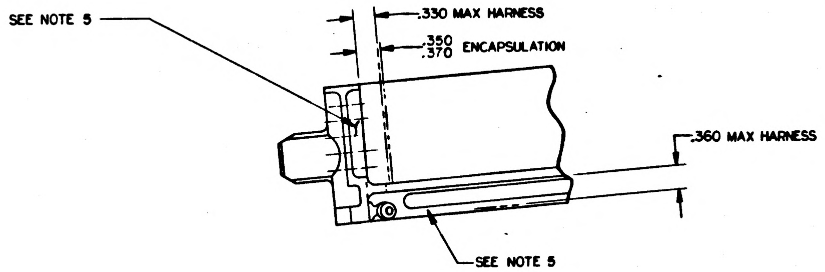
CODE IDENT NO. ——
SIZE E
DRAWING NO. 1007538
SCALE 1/1
SHEET 1 OF 2

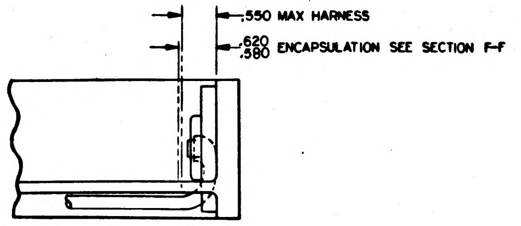
MASTER

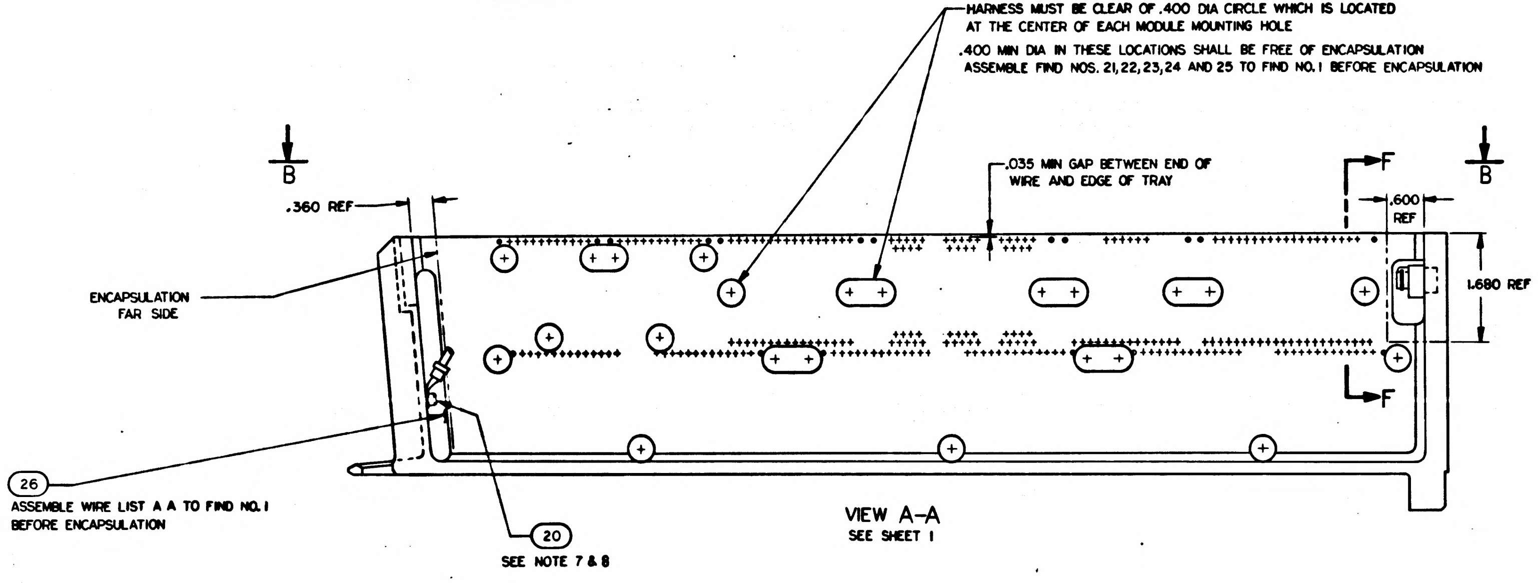
NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

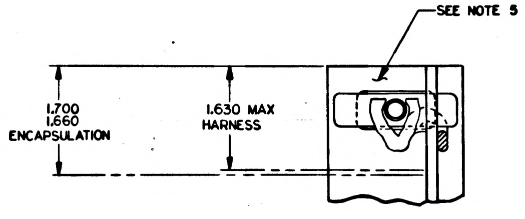
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706	ab		7/8/64	ink


SEE NOTE 5
.330 MAX HARNESS
.350
.370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 5

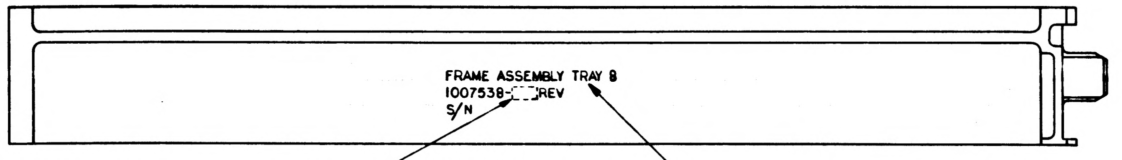

.550 MAX HARNESS
.620
.580 ENCAPSULATION SEE SECTION F-F


HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED
AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION
ASSEMBLE FIND NOS. 21,22,23,24 AND 25 TO FIND NO. 1 BEFORE ENCAPSULATION
B
B
.035 MIN GAP BETWEEN END OF
WIRE AND EDGE OF TRAY
F
F
.600
REF
.360 REF
1.680 REF
ENCAPSULATION
FAR SIDE
26
ASSEMBLE WIRE LIST A A TO FIND NO. 1
BEFORE ENCAPSULATION
20
SEE NOTE 7 & 8

VIEW A-A
SEE SHEET 1


SEE NOTE 5
1.700
1.660
ENCAPSULATION
1.630 MAX
HARNESS

PARTIAL SECTION F-F


FRAME ASSEMBLY TRAY 8
1007538-☐REV
S/N
APPLICABLE DASH NO.
SEE NOTE 3

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS XXX ±.005 XX ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL
—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN	B.J. Vazia	3 Sept 64
CHECKED	[illegible]	15 Sept 64
APPROVED		
APPROVED	D.B. Feat	12/4/64
APPROVED MIT	[illegible]	[illegible]
APPROVED MSC	W.J. Rhine	12-4-64
		DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 8

CODE IDENT NO.	SIZE	DRAWING NO.
—	E	1007538
SCALE 1/1		SHEET 2 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
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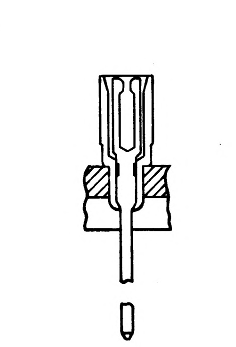
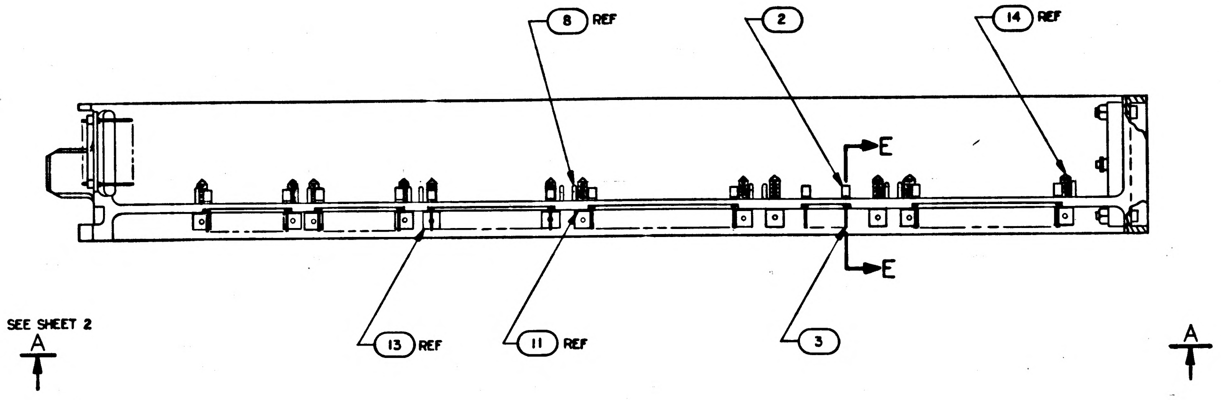
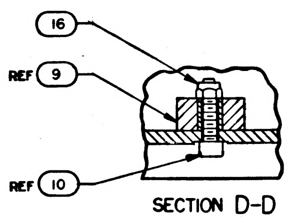
C		REVISED PER TDRR 15159			29 Dec '64	WC

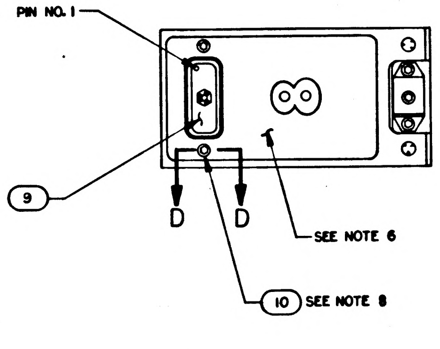


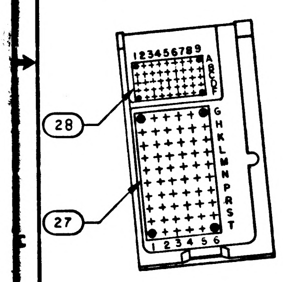
PARTIAL SECTION E-E
247 PLACES

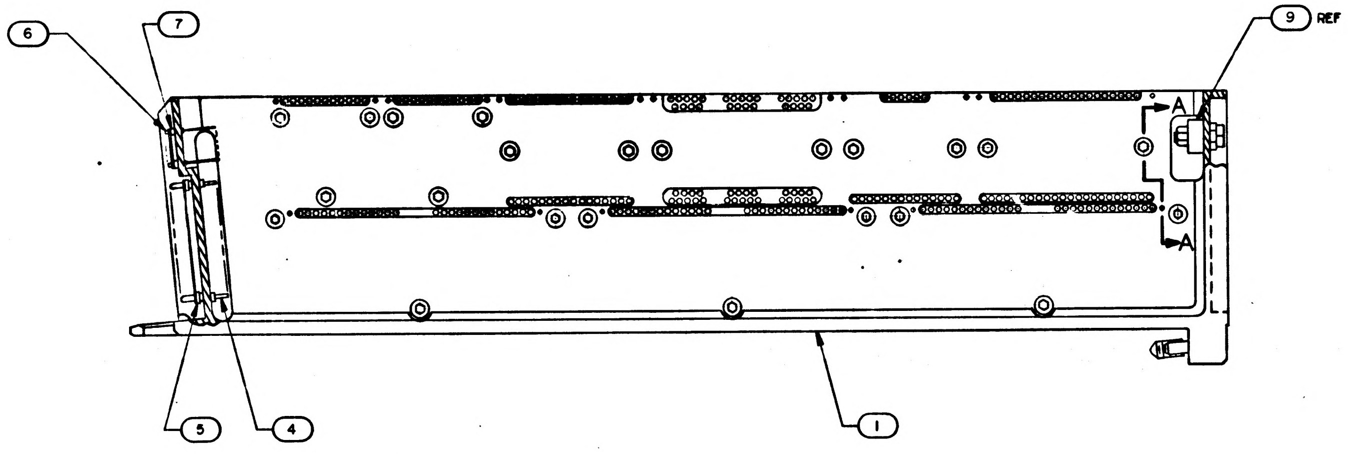


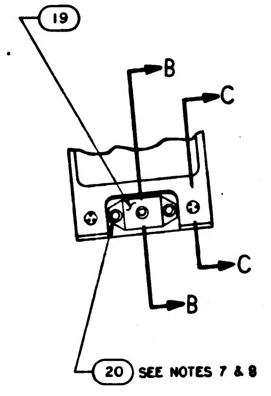


SECTION D-D
SCALE 2/1



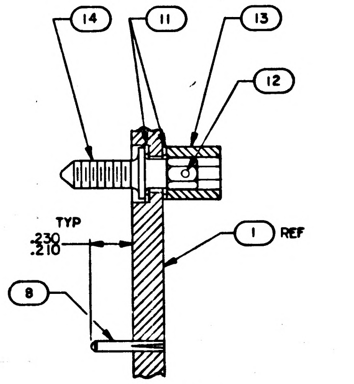




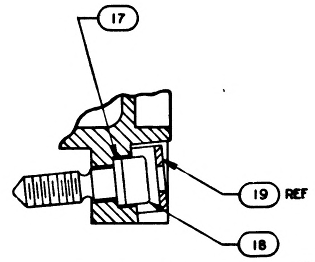


Ⓑ REPLACES WORD DWG REV A

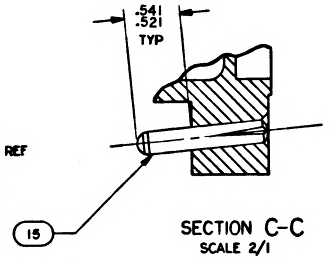
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL D 70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
4. BOND FIND NOS. 21,22,23 AND 26 TO FIND NO.1 PER ND1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND1002071.
   ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT



SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009568		WIRING DIAGRAM	REF
1	1008553		GASKET, CONNECTOR	28
1	1008552		GASKET, CONNECTOR	27
1	1008614		WIRE LIST A A	26
1				25
1				24
1	1008613		WIRING HARNESS C	23
1	1008612		WIRING HARNESS B	22
1	1008611		WIRING HARNESS A	21
3	MS16995-10		SCREW, CAP, SOCKET HEAD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HEAD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
23	1008172		SCREW, JACK	14
23	1004207		DRIVE CYLINDER	13
23	MS171433		PIN, SPRING	12
46	1004206		WASHER, THRUST	11
2	MS16995-11		SCREW, CAP, SOCKET HEAD	10
1	1010821-1		CONNECTOR, RECEPTACLE	9
18	1010620-4		PIN, GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	1010382-1		CONTACT, BLADE EDGE CONN	4
247	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
247	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008528		FRAME	1
-011	LIST OF MATERIALS			

1007578	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN B J Lapias 2 Sept 64
CHECKED 15 Sept 64
APPROVED
APPROVED 12/8/64
APPROVED MIT
APPROVED MSC 12-8-64
DATE

FRAME ASSEMBLY
TRAY 8

CODE IDENT NO. —
SIZE E
DRAWING NO. 1007538
SCALE 1/1
SHEET 1 OF 2

MASTER

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
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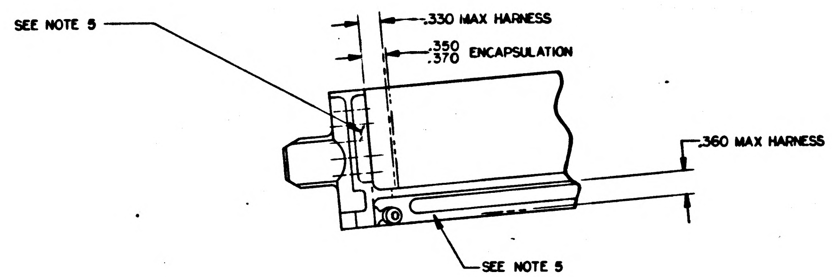
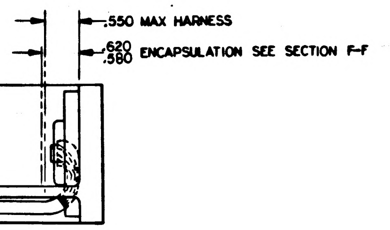
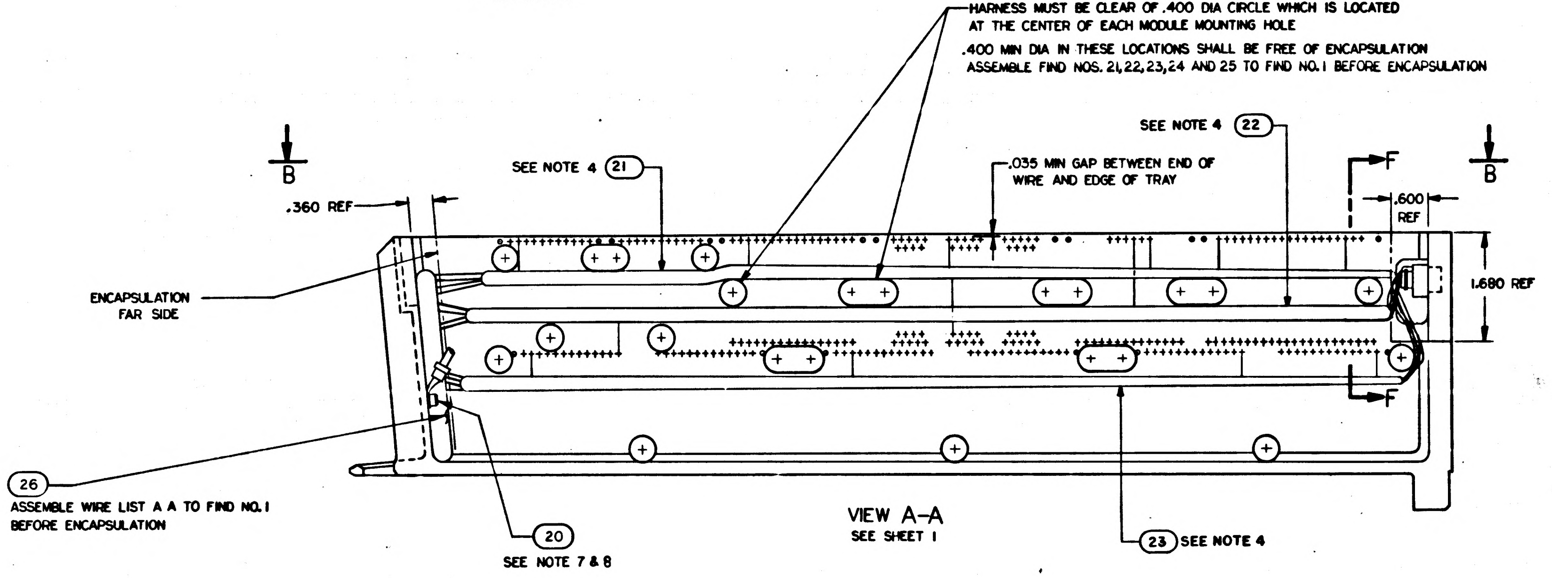
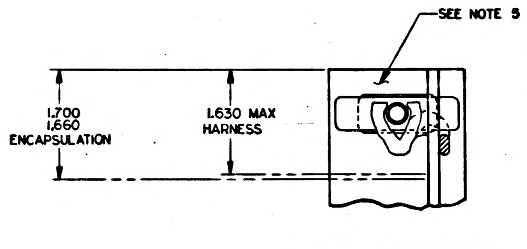
C		REVISED PER TDRR 15159				


SEE NOTE 5
.330 MAX HARNESS
.350
.370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 5

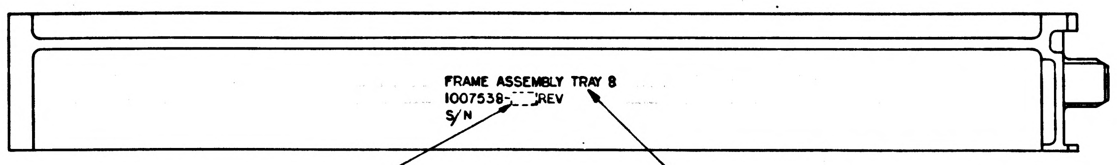

.550 MAX HARNESS
.620
.580 ENCAPSULATION SEE SECTION F-F


HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION
ASSEMBLE FIND NOS. 21,22,23,24 AND 25 TO FIND NO. 1 BEFORE ENCAPSULATION
SEE NOTE 4 22
SEE NOTE 4 21
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
B
F
.600 REF
B
.360 REF
1.680 REF
ENCAPSULATION FAR SIDE
F
26
ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
20
SEE NOTE 7 & 8
23 SEE NOTE 4

VIEW A-A
SEE SHEET 1


SEE NOTE 5
1.700
1.660
ENCAPSULATION
1.630 MAX
HARNESS

PARTIAL SECTION F-F


FRAME ASSEMBLY TRAY 8
1007538-   REV
S/N
APPLICABLE DASH NO.
SEE NOTE 3

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS XXX ± .005 XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN B J Papia 3 Sept 64
CHECKED
APPROVED
APPROVED D. B. Test
APPROVED MIT
APPROVED MSC W. J. Rhine 12-1-64
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

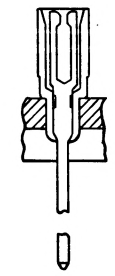
FRAME ASSEMBLY
TRAY 8

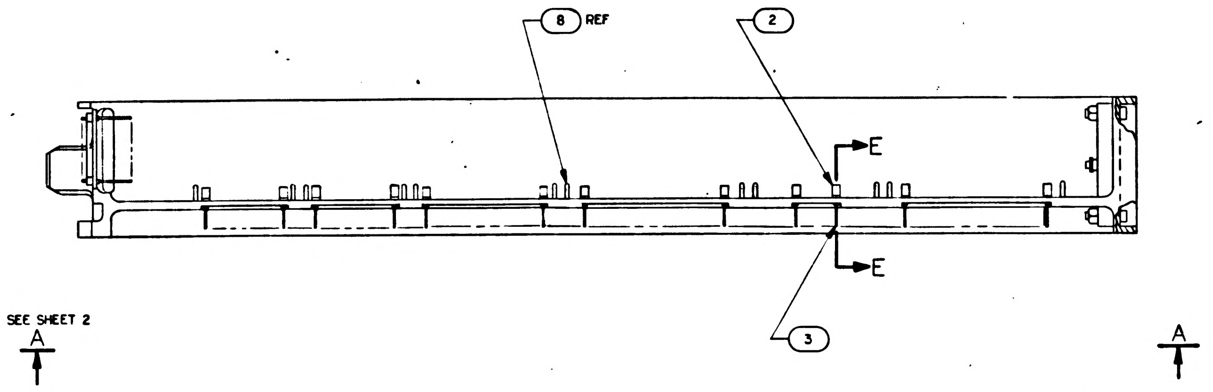
CODE IDENT NO. —
SIZE E
DRAWING NO. 1007538
SCALE 1/1
SHEET 2 OF 2

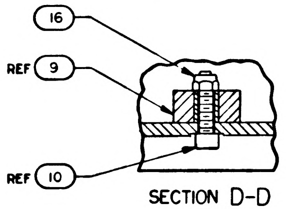
NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

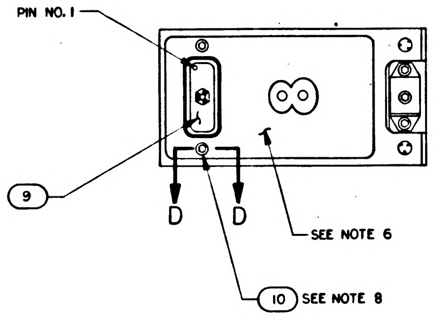
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
B		REPLACES WORD DWG REV A PER TDRR 14706			9/5/64		
C		REVISED PER TDRR 15159					
D		REVISED PER TDRR 15948		CW	11-FEB-65		

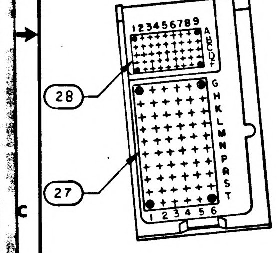

PARTIAL SECTION E-E
247 PLACES

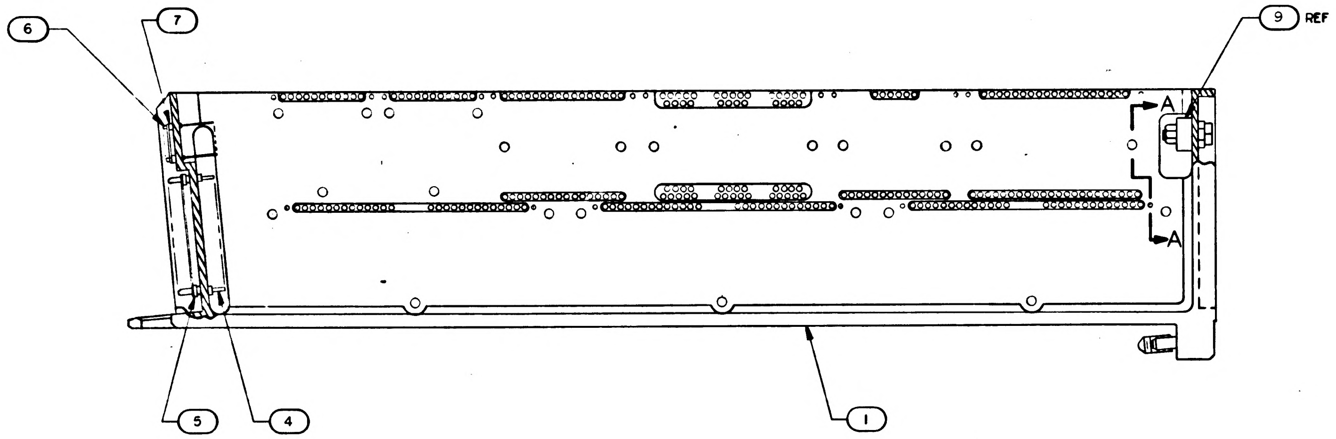


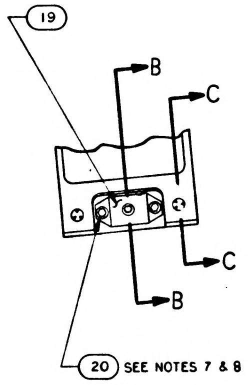


SECTION D-D
SCALE 2/1



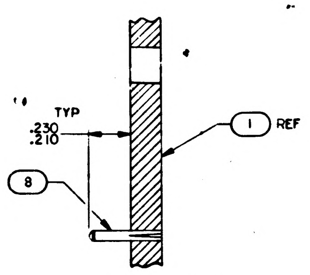




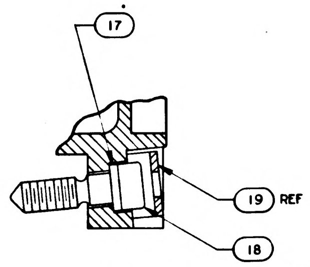


(B) REPLACES WORD DWG REV A

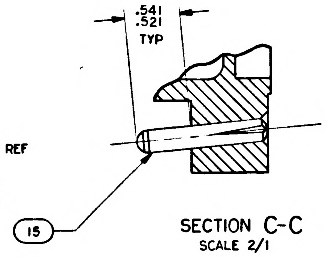
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL D 70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
4. BOND FIND NOS. 21,22,23 AND 26 TO FIND NO.1 PER ND1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER).
8. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO.1 TO BE 5.0 TO 5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND 1002071.
ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT



SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009568		WIRING DIAGRAM	REF
1	1008553		GASKET, CONNECTOR	28
1	1008552		GASKET, CONNECTOR	27
1	1008614		WIRE LIST A A	26
1				25
1				24
1	1008613		WIRING HARNESS C	23
1	1008612		WIRING HARNESS B	22
1	1008611		WIRING HARNESS A	21
3	MS16995-10		SCREW, CAP, SOCKET HEAD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HEAD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
~~23~~	~~1008172~~		~~SCREW, JACK~~	14
~~23~~	~~1004207~~		~~DRIVE CYLINDER~~	13
~~23~~	~~MS171433~~		~~PIN, SPRING~~	12
~~46~~	~~1004206~~		~~WASHER, THRUST~~	11
2	MS16995-11		SCREW, CAP, SOCKET HEAD	10
1	1010621-1		CONNECTOR, RECEPTACLE	9
18	1010620-4		PIN, GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	1010382-1		CONTACT, BLADE EDGE CONN	4
247	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
247	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008528		FRAME	1
-011	LIST OF MATERIALS			

NEXT ASSY	USED ON
1007578	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN 2 Sept 64
CHECKED
APPROVED
APPROVED 12/4/64
APPROVED MIT Dec 64
APPROVED MSC 12-8-64
DATE

FRAME ASSEMBLY
TRAY 8

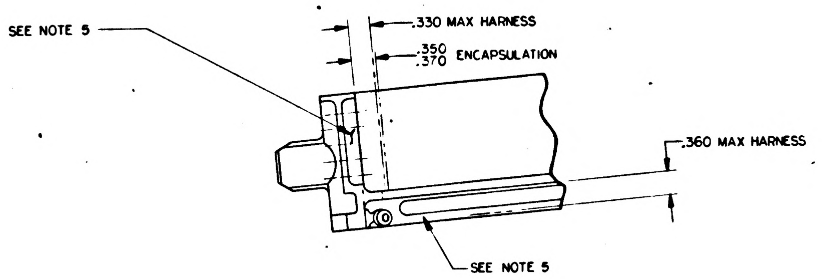
CODE IDENT NO —
SIZE E
DRAWING NO. 1007538
SCALE 1/1
SHEET 1 OF 2

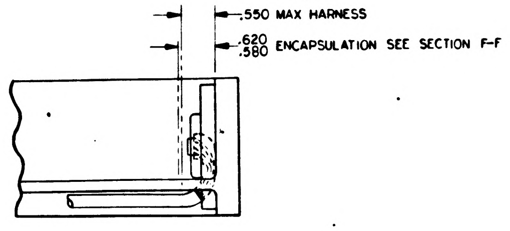
1007538 D

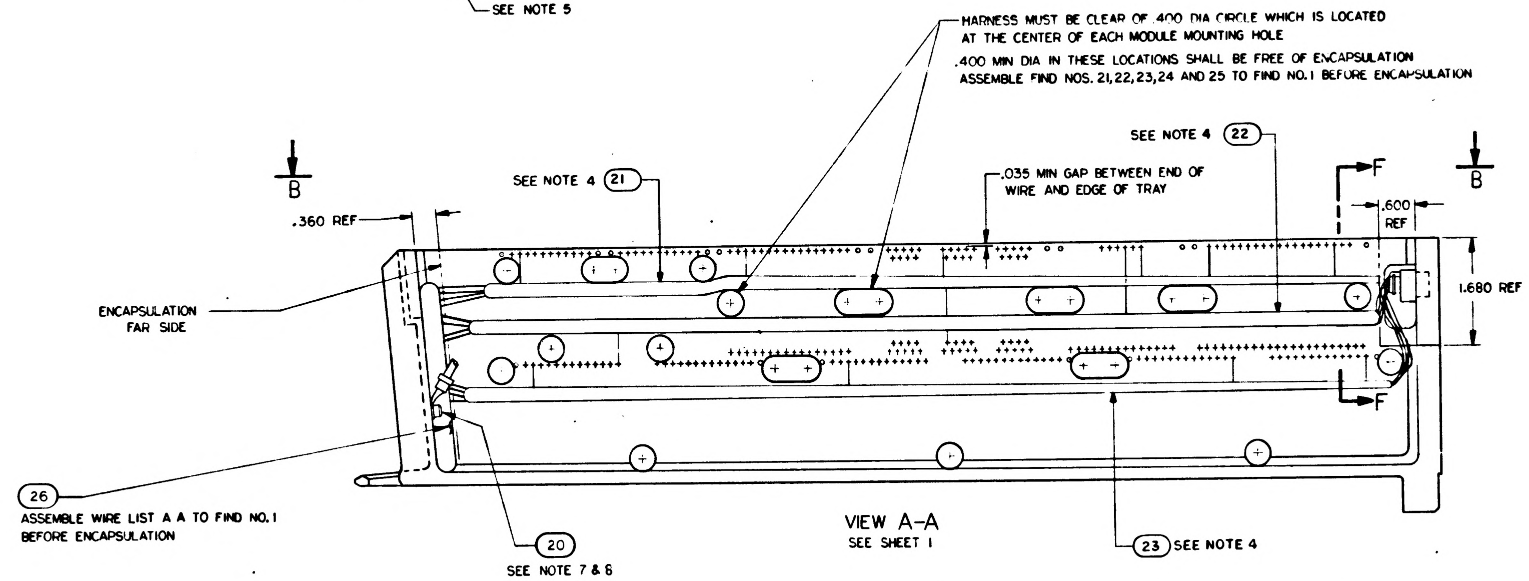
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

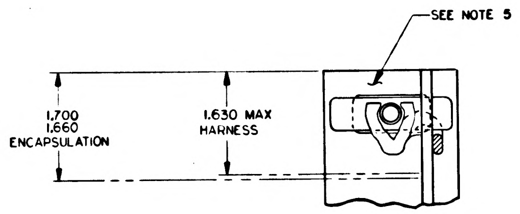
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706			12/8/64	
C		REVISED PER TDRR 15159			Dec 64	
D		REVISED PER TDRR 15948			11-FEB-65	


SEE NOTE 5
.330 MAX HARNESS
.350
.370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 5

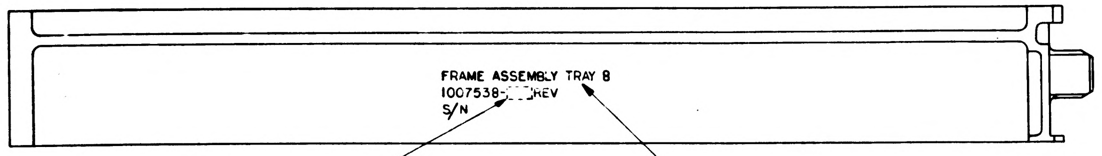

.550 MAX HARNESS
.620
.580 ENCAPSULATION SEE SECTION F-F


HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION
ASSEMBLE FIND NOS. 21,22,23,24 AND 25 TO FIND NO.1 BEFORE ENCAPSULATION
B
SEE NOTE 4 ㉑
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
SEE NOTE 4 ㉒
F
B
.360 REF
.600 REF
1.680 REF
ENCAPSULATION FAR SIDE
F
㉖ ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
⑳ SEE NOTE 7 & 8
㉓ SEE NOTE 4

VIEW A-A
SEE SHEET 1


SEE NOTE 5
1.700
1.660
ENCAPSULATION
1.630 MAX HARNESS

PARTIAL SECTION F-F


FRAME ASSEMBLY TRAY 8
1007538-__REV
S/N
APPLICABLE DASH NO.
SEE NOTE 3

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS .XXX ±.005 .XX ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN 3 Sept 64
CHECKED
APPROVED
APPROVED 12/4/64
APPROVED MIT
APPROVED MSC 12/8/64
DATE

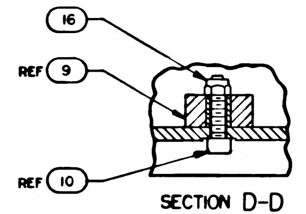
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 8

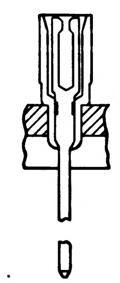
CODE IDENT NO —
SIZE E
DRAWING NO 1007538
SCALE 1/1
SHEET 2 OF 2

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

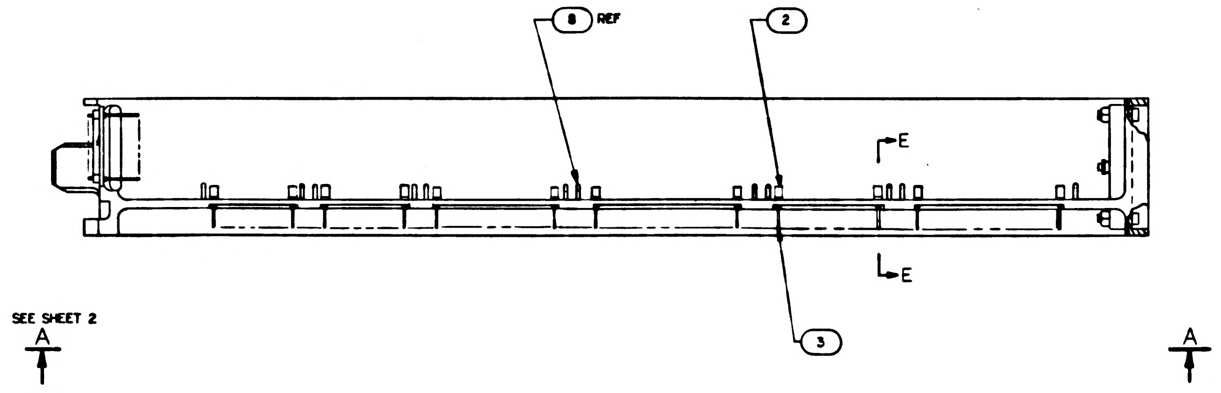
REVISIONS							
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
B		REPLACES WORD DWG REV A PER TDRR 14706			[illegible]/64		WK
C		REVISED PER TDRR 15159			23 [illegible] '64		WK
D		REVISED PER TDRR 15948		CW	11 FEB 65		
E		REVISED PER TDRR 16333	JM		15 FEB 65		

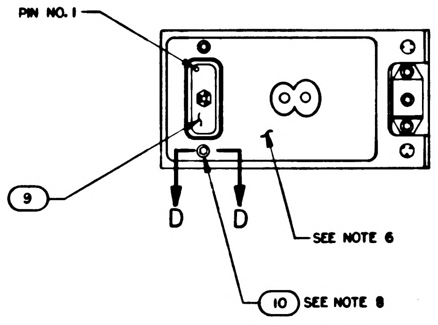


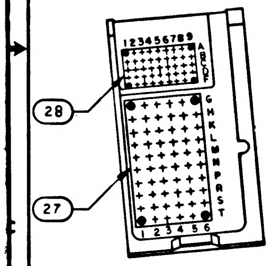
SECTION D-D
SCALE 2/1

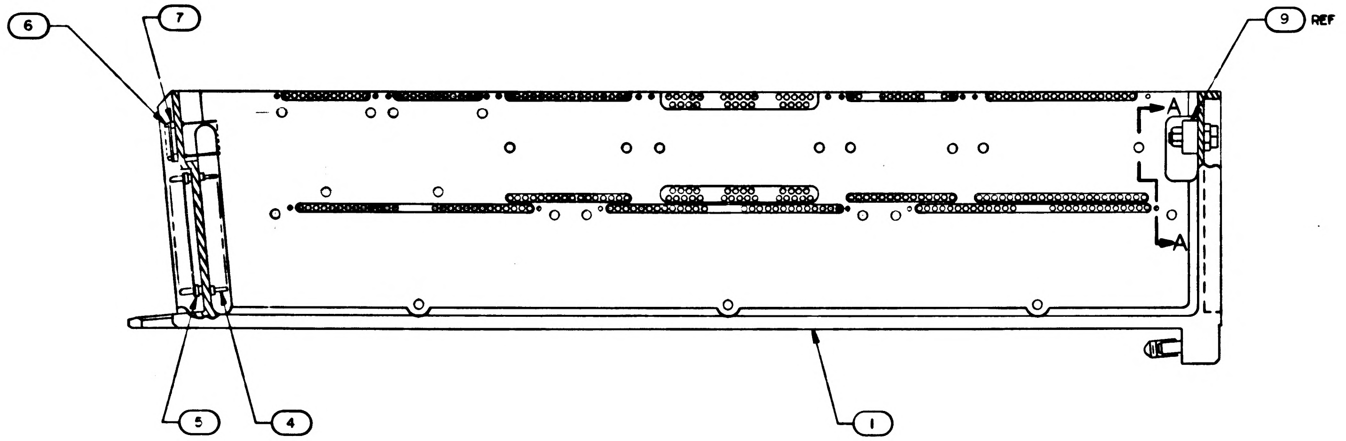


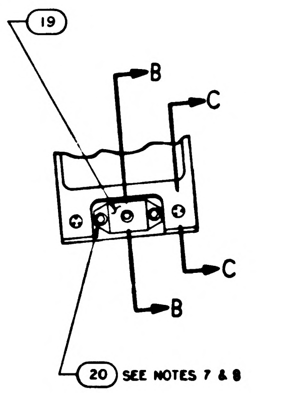
PARTIAL SECTION E-E
251 PLACES





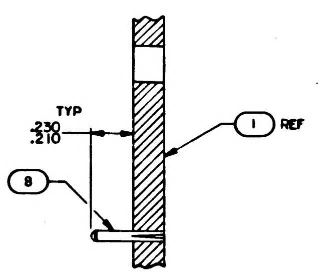




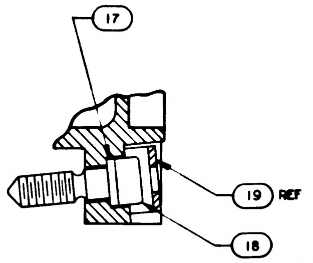


Ⓑ REPLACES WORD DWG REV A

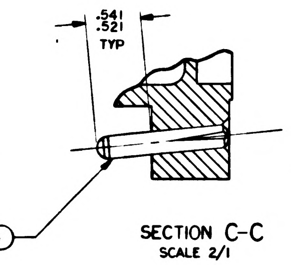
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL D 70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
4. BOND FIND NOS. 21,22,23 AND 26 TO FIND NO.1 PER ND1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND1002071.
ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT



SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009568		WIRING DIAGRAM	REF
1	1008553		GASKET, CONNECTOR	28
1	1008552		GASKET, CONNECTOR	27
1	1008614		WIRE LIST A A	26
1				25
1				24
1	1008613		WIRING HARNESS C	23
1	1008612		WIRING HARNESS B	22
1	1008611		WIRING HARNESS A	21
3	MS16995-10		SCREW, CAP, SOCKET HEAD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HEAD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
~~23~~	~~1008172~~		~~SCREW, JACK~~	14
~~23~~	~~1004207~~		~~DRIVE CYLINDER~~	13
~~23~~	~~MS171433~~		~~PIN, SPRING~~	12
~~46~~	~~1004206~~		~~WASHER, THRUST~~	11
2	MS16995-11		SCREW, CAP, SOCKET HEAD	10
1	1010821-1		CONNECTOR, RECEPTACLE	9
18	1010620-4		PIN, GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	1010382-1		CONTACT, BLADE EDGE CONN	4
251	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
251	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008528		FRAME	1
-011	LIST OF MATERIALS			

1007578	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN B. Lapias 2 Sept 64
CHECKED
APPROVED
APPROVED S. W. Test 12/4/64
APPROVED MIT
APPROVED MSC 12-4-64
DATE

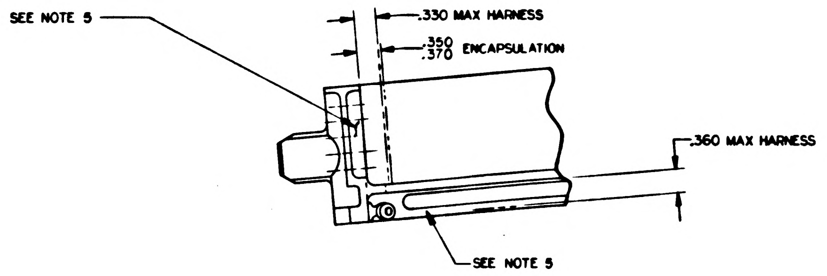
FRAME ASSEMBLY
TRAY 8

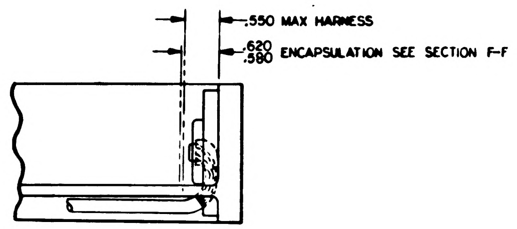
CODE IDENT NO. —
SIZE E
DRAWING NO. 1007538
SCALE 1/1
SHEET 1 OF 2

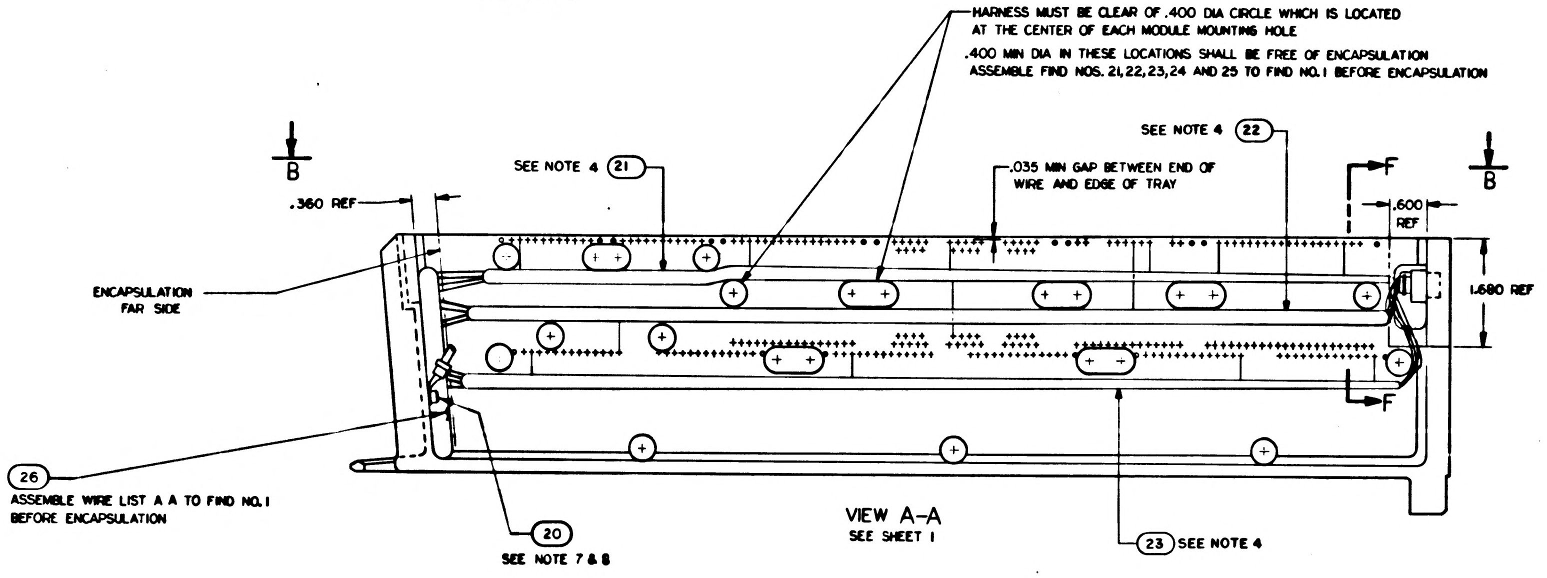
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

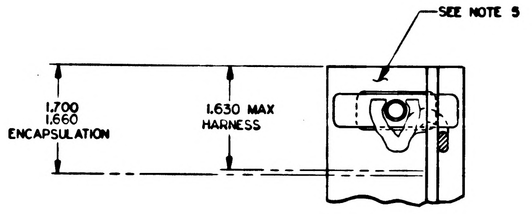
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
B		REPLACES WORD DWG REV A PER TDRR 14706			12/8/64		
C		REVISED PER TDRR 15159					
D		REVISED PER TDRR 15948			FEB		
E		REVISED PER TDRR 16333	JN		5-Feb 65		


SEE NOTE 5
.330 MAX HARNESS
.350
.370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 5

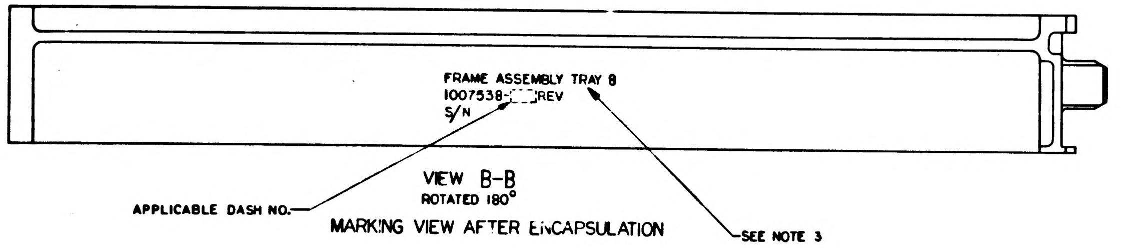

.550 MAX HARNESS
.620
.580 ENCAPSULATION SEE SECTION F-F


HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION
ASSEMBLE FIND NOS. 21,22,23,24 AND 25 TO FIND NO. 1 BEFORE ENCAPSULATION
B
SEE NOTE 4 (21)
SEE NOTE 4 (22)
F
B
.360 REF
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.600 REF
1.680 REF
ENCAPSULATION FAR SIDE
F
(26)
ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
(20)
SEE NOTE 7 & 8
(23) SEE NOTE 4

VIEW A-A
SEE SHEET 1


SEE NOTE 5
1.700
1.660
ENCAPSULATION
1.630 MAX
HARNESS

PARTIAL SECTION F-F


FRAME ASSEMBLY TRAY 8
1007538-___REV
S/N
APPLICABLE DASH NO.
SEE NOTE 3

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS .XXX ±.005 .XX ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL
—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

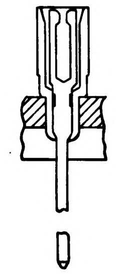
DRAWN B. Papia 3 Sept 64
CHECKED
APPROVED
APPROVED D. R. Scot 12/4/64
APPROVED MIT
APPROVED MSC
DATE

FRAME ASSEMBLY TRAY 8

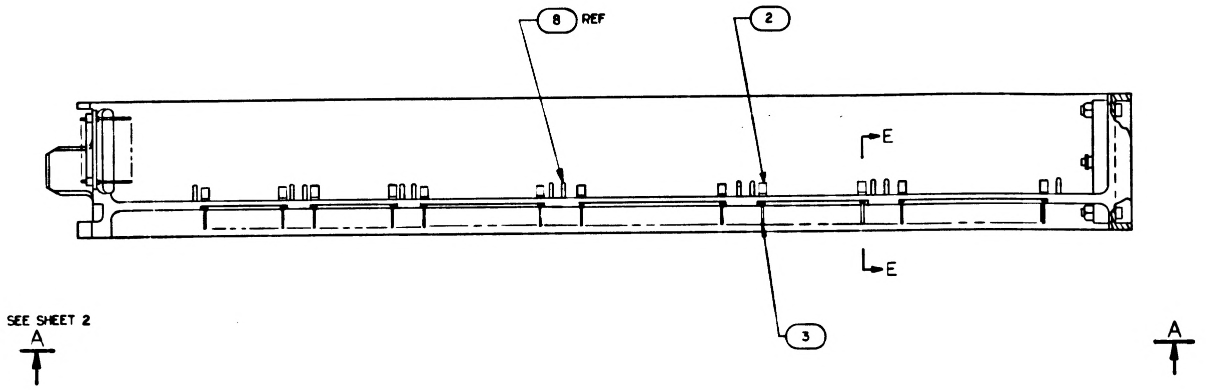
CODE IDENT NO. —
SIZE E
DRAWING NO. 1007538
SCALE 1/1
SHEET 2 OF 2

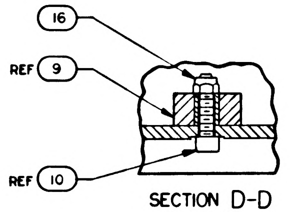
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706			5/64	
C		REVISED PER TDRR 15159			29 Dec 64	
D		REVISED PER TDRR 15948			11-FEB-65	
E		REVISED PER TDRR 16333	JM		15-FEB 65	
F		REVISED PER TDRR 17613	JJJ		25 MAR 65	

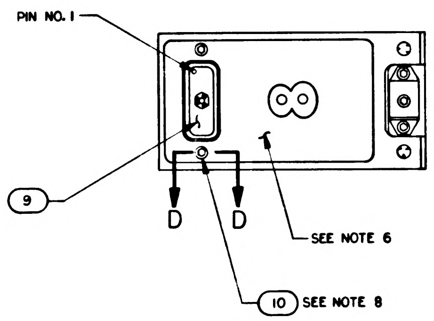


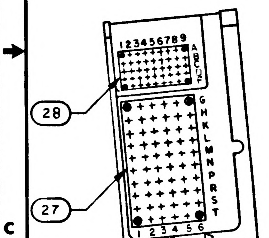
PARTIAL SECTION E-E
251 PLACES

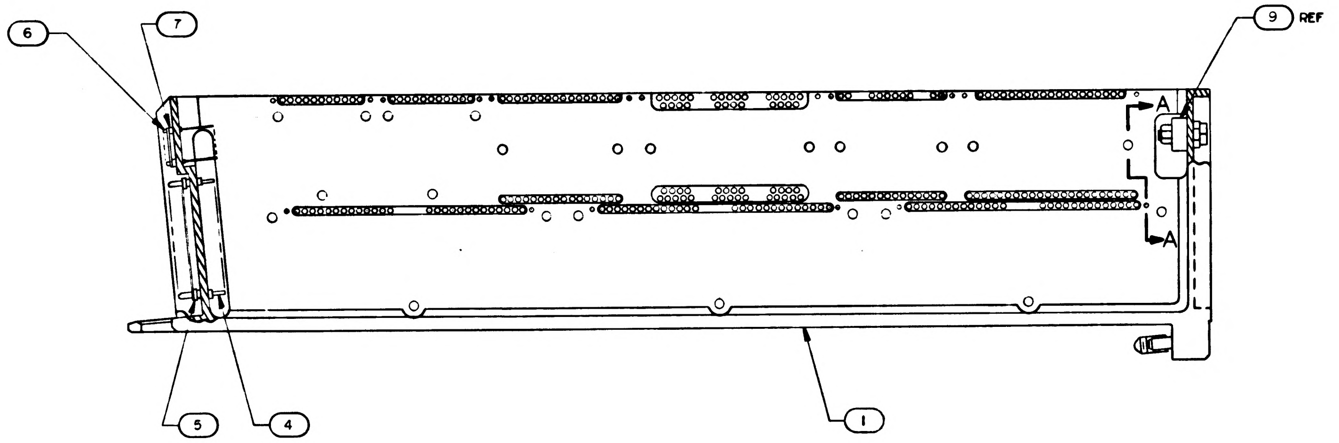


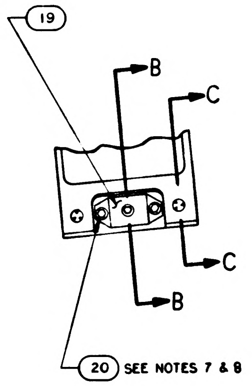


SECTION D-D
SCALE 2/1



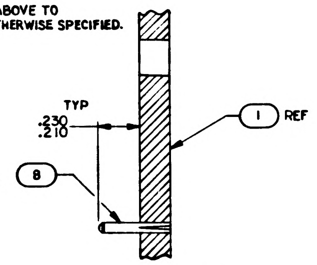




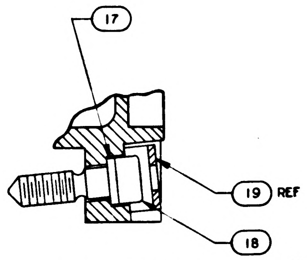


Ⓑ REPLACES WORD DWG REV A

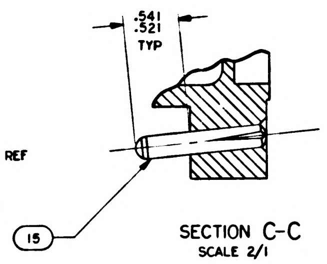
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL D 70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
4. BOND FIND NOS. 21,22,23 AND 26 TO FIND NO.1 PER ND1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) .010 ABOVE TO .010 BELOW PERIPHERAL SURFACES OF THE TRAY FRAME UNLESS OTHERWISE SPECIFIED.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT



SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009568		WIRING DIAGRAM	REF
1	1008553		GASKET, CONNECTOR	28
1	1008552		GASKET, CONNECTOR	27
1	1008614		WIRE LIST A A	26
1				25
1				24
1	1008613		WIRING HARNESS C	23
1	1008612		WIRING HARNESS B	22
1	1008611		WIRING HARNESS A	21
3	MS16995-10		SCREW, CAP, SOCKET HEAD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HEAD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
~~23~~	~~1008172~~		~~SCREW, JACK~~	14
~~23~~	~~1004207~~		~~DRIVE CYLINDER~~	13
~~23~~	~~MS171433~~		~~PIN, SPRING~~	12
~~46~~	~~1004206~~		~~WASHER, THRUST~~	11
2	MS16995-11		SCREW, CAP, SOCKET HEAD	10
1	1010821-1		CONNECTOR, RECEPTACLE	9
18	1010620-4		PIN, GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	.010382-1		CONTACT, BLADE EDGE CONN	4
251	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
251	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008528		FRAME	1

-011 LIST OF MATERIALS

1007578	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN 2 Sep 64
CHECKED 15 Sep 64
APPROVED
APPROVED 12/9/64
APPROVED MIT Dec 64
APPROVED MSC 12/4/64
DATE

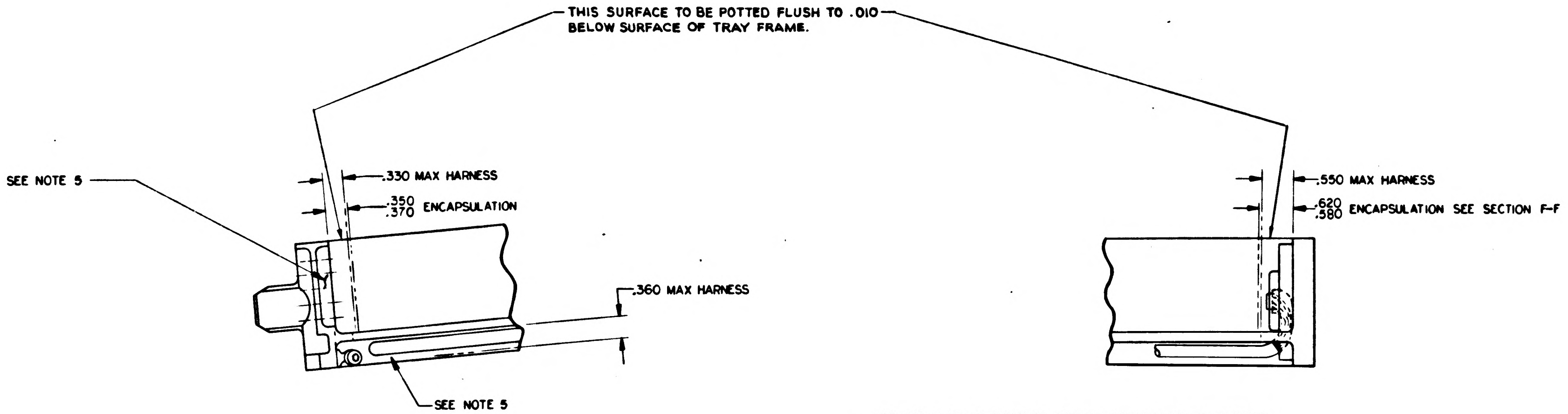
FRAME ASSEMBLY
TRAY 8

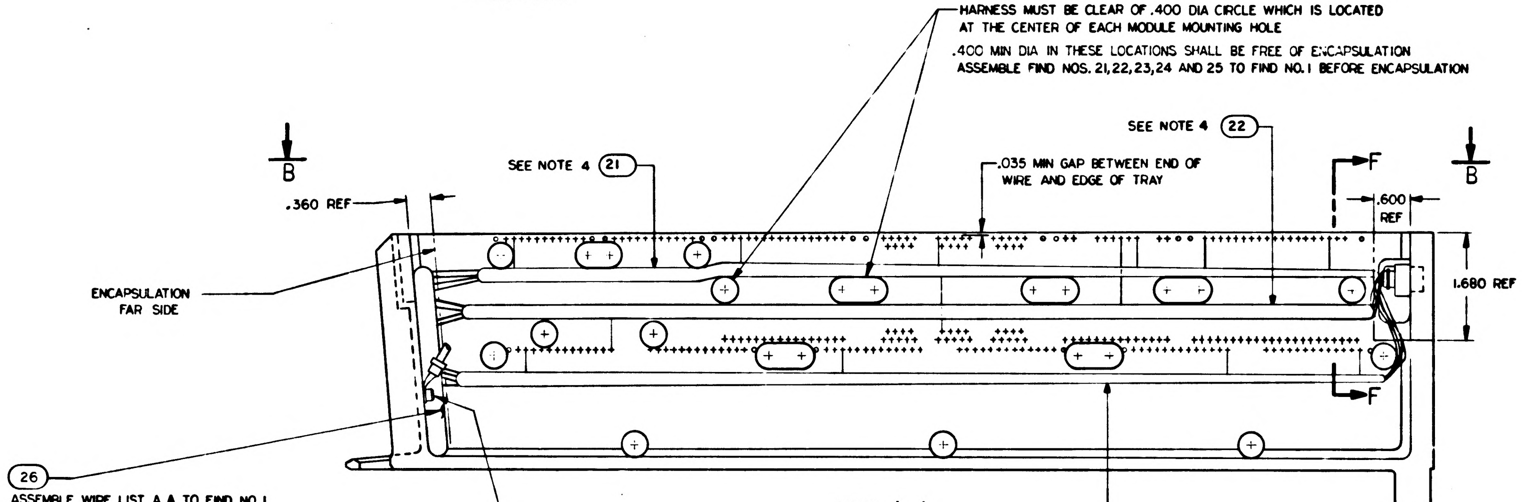
CODE IDENT NO. —
SIZE E
DRAWING NO. 1007538
SCALE 1/1
SHEET 1 OF 2

1007538 E

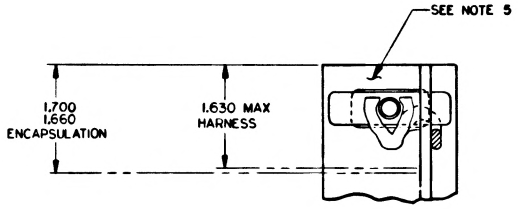
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706			2/6/64	
C		REVISED PER TDRR 15159			29 Dec 64	
D		REVISED PER TDRR 15948			FEB	
E		REVISED PER TDRR 16333	JN		5-Feb 65	
F		REVISED PER TDRR 17613			25 MAR 65	

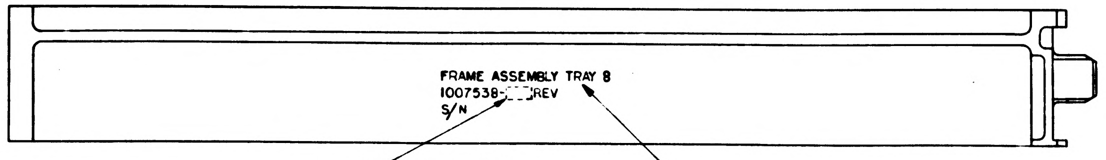

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME.
SEE NOTE 5
.330 MAX HARNESS
.350
.370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 5
.550 MAX HARNESS
.620
.580 ENCAPSULATION SEE SECTION F-F


HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION
ASSEMBLE FIND NOS. 21,22,23,24 AND 25 TO FIND NO.1 BEFORE ENCAPSULATION
SEE NOTE 4 (22)
SEE NOTE 4 (21)
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
B
B
F
F
.360 REF
.600 REF
1.680 REF
ENCAPSULATION FAR SIDE
(26)
ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
(20)
SEE NOTE 7 & 8
(23) SEE NOTE 4

VIEW A-A
SEE SHEET 1


SEE NOTE 5
1.700
1.660
ENCAPSULATION
1.630 MAX
HARNESS

PARTIAL SECTION F-F


FRAME ASSEMBLY TRAY 8
1007538-REV
S/N
APPLICABLE DASH NO.
SEE NOTE 3

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS XXX ±.005 XX ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL
—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN B. Papia 3 Sept 64
CHECKED
APPROVED
APPROVED 12/4/64
APPROVED MIT
APPROVED MSC 12/4/64
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

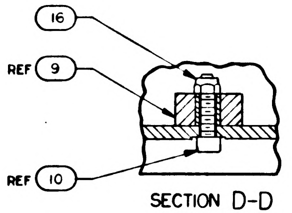
FRAME ASSEMBLY
TRAY 8

CODE IDENT NO. —
SIZE E
DRAWING NO. 1007538
SCALE 1/1
SHEET 2 OF 2

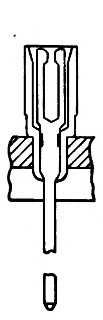
1007538 F

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

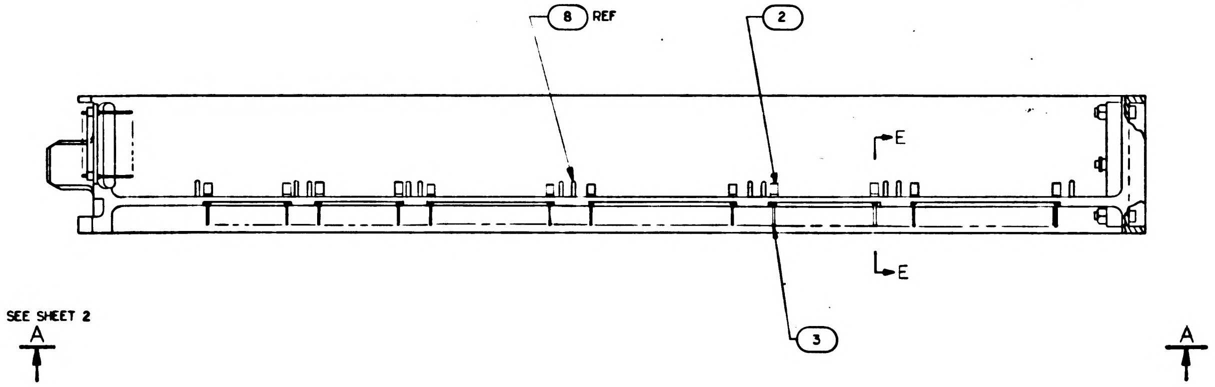
REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706			5/64	
C		REVISED PER TDRR 15159			64	
D		REVISED PER TDRR 15948		CW	11-FEB-65	
E		REVISED PER TDRR 16333	JM		15-FEB 65	
F		REVISED PER TDRR 17613	JJJ		25 MAR 65	
G		REVISED PER TDRR 18690		EF	65	

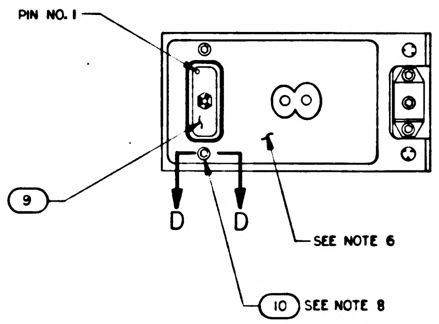


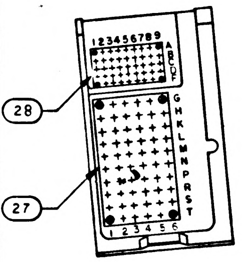
SECTION D-D
SCALE 2/1

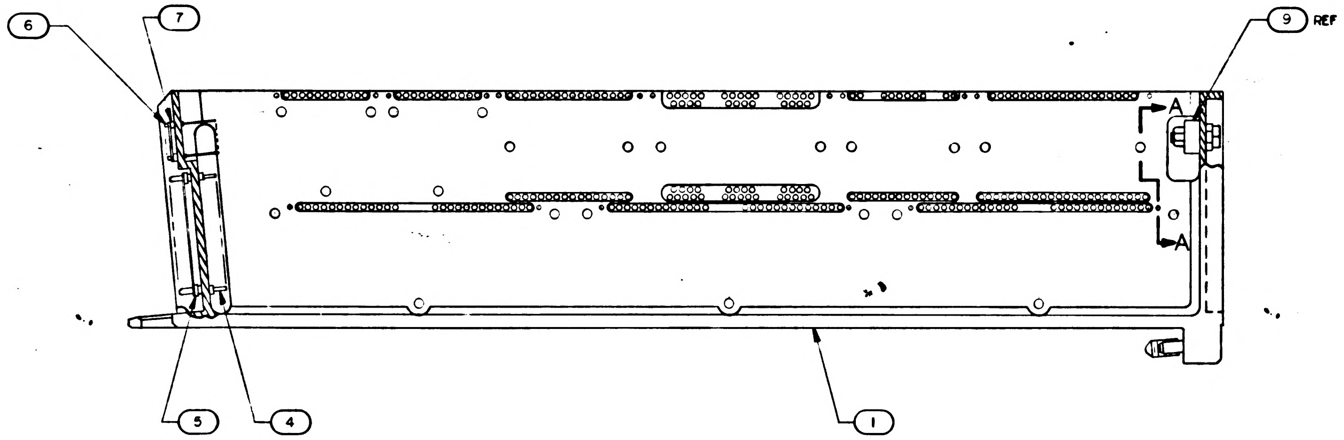


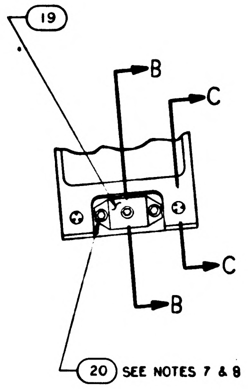
PARTIAL SECTION E-E
251 PLACES





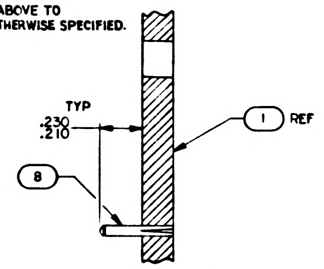




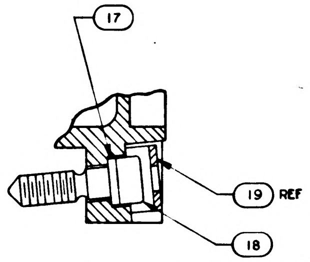


Ⓑ REPLACES WORD DWG REV A

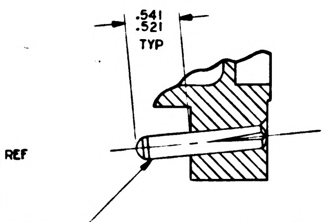
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL D 70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
4. BOND FIND NOS. 21,22,23 AND 26 TO FIND NO.1 PER ND1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND1002002 (BLACK POLYURETHANE FOAM) .010 ABOVE TO .010 BELOW PERIPHERAL SURFACES OF THE TRAY FRAME UNLESS OTHERWISE SPECIFIED.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
7. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NO.10 AND 20 TO FIND NO.1 TO BE 5.0 TO 5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT



SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO
☒	1009568		WIRING DIAGRAM	REF
1	1008553		GASKET, CONNECTOR	28
1	1008552		GASKET, CONNECTOR	27
1	1008614		WIRE LIST A A	26
1				25
1				24
1	1008613		WIRING HARNESS C	23
1	1008612		WIRING HARNESS B	22
1	1008611		WIRING HARNESS A	21
3	MS16995-10		SCREW, CAP, SOCKET HEAD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HEAD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
~~23~~	~~1008172~~		~~SCREW, JACK~~	14
~~23~~	~~1004207~~		~~DRIVE CYLINDER~~	13
~~23~~	~~MS171433~~		~~PIN, SPRING~~	12
~~46~~	~~1004206~~		~~WASHER, THRUST~~	11
2	MS16995-11		SCREW, CAP, SOCKET HEAD	10
1	1010821-1		CONNECTOR, RECEPTACLE	9
18	MS16556-604		PIN, GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	1010382-1		CONTACT, BLADE EDGE CONN	4
251	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
251	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008528		FRAME	1

-C11 LIST OF MATERIALS

1007578	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN
CHECKED
APPROVED
APPROVED 12/8/64
APPROVED MIT 64
APPROVED MSC
DATE

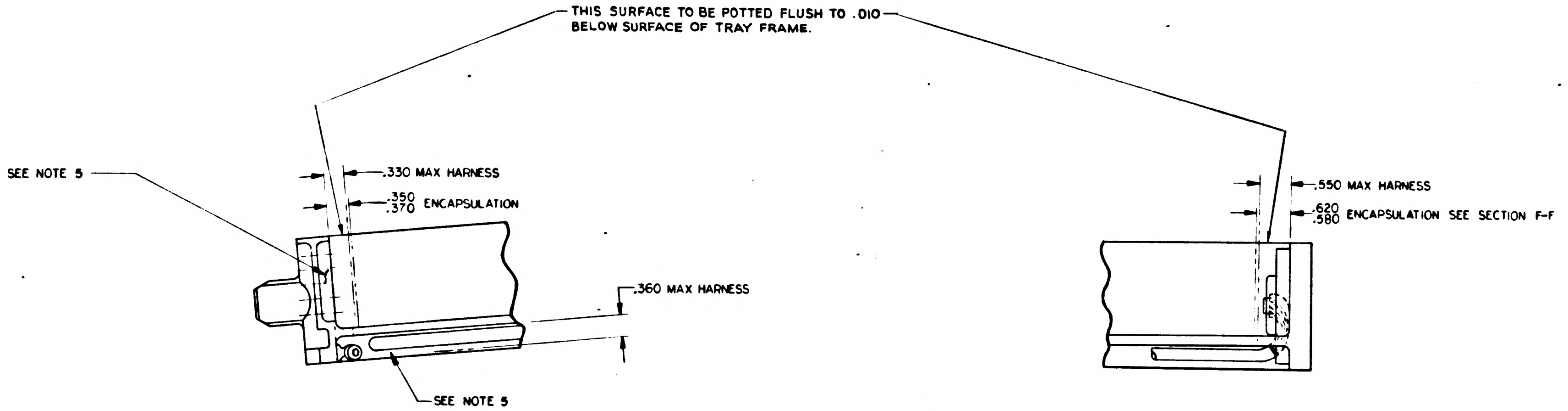
FRAME ASSEMBLY
TRAY 8

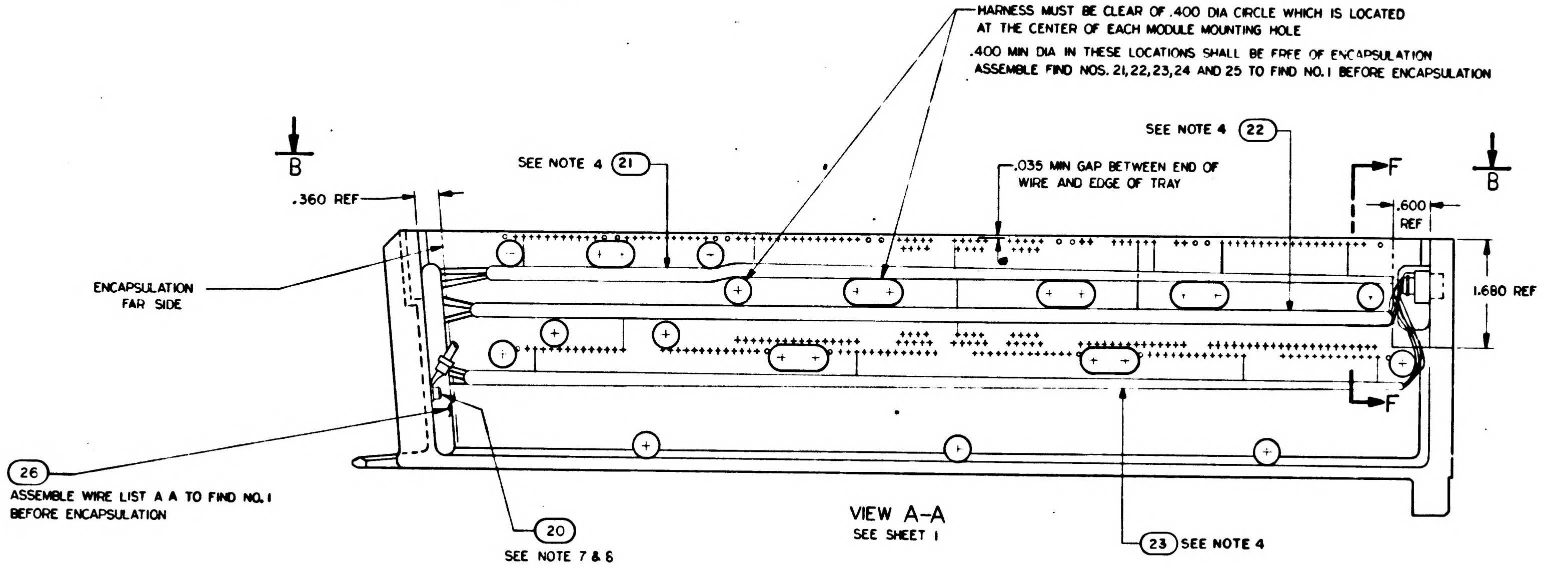
CODE IDENT NO. —
SIZE E
DRAWING NO. 1007538
SCALE 1/1
SHEET 1 OF 2

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

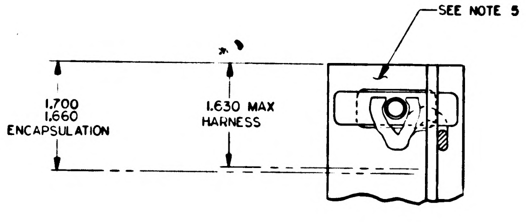
REVISIONS

	SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
(M)	B		REPLACES WJHD DWG REV A PER TDRR 11706	H		9/18/64		
	C		REVISED PER TDRR 15159	TA		7 Dec 64		
	D		REVISED PER TDRR 15948			11-FEB 65		
Ⓜ	E		REVISED PER TDRR 16333	JN		5-Feb 65		
(M)	F		REVISED PER TDRR 17613	JJJ		25 MAR 65		
	G		REVISED PER TDRR 18690		EF			

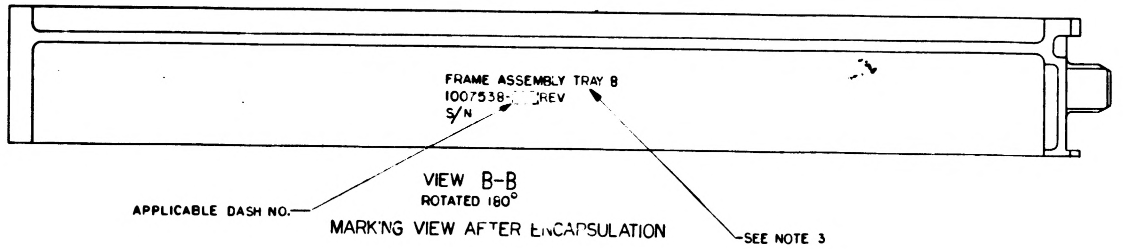

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME.
SEE NOTE 5
.330 MAX HARNESS
.350
.370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 5
.550 MAX HARNESS
.620
.580 ENCAPSULATION SEE SECTION F-F


HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION
ASSEMBLE FIND NOS. 21,22,23,24 AND 25 TO FIND NO. 1 BEFORE ENCAPSULATION
SEE NOTE 4 (22)
B
SEE NOTE 4 (21)
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
F
B
.360 REF
.600 REF
ENCAPSULATION FAR SIDE
1.680 REF
F
(26)
ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
(20)
SEE NOTE 7 & 6
(23) SEE NOTE 4

VIEW A-A
SEE SHEET 1


SEE NOTE 5
1.700
1.660
ENCAPSULATION
1.630 MAX
HARNESS

PARTIAL SECTION F-F


FRAME ASSEMBLY TRAY 8
1007538- REV
S/N
APPLICABLE DASH NO.
SEE NOTE 3

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS XXX ±.005 XX ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

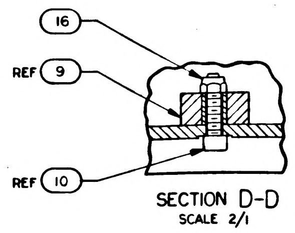
DRAWN		3 Sept 64
CHECKED		
APPROVED		
APPROVED		
APPROVED MIT		
APPROVED MSC		
		DATE

FRAME ASSEMBLY
TRAY 8

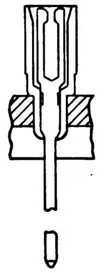
CODE IDENT NO.	SIZE	DRAWING NO.
—	E	1007538
SCALE 1/1	—	SHEET 2 OF 2

NOTICE WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

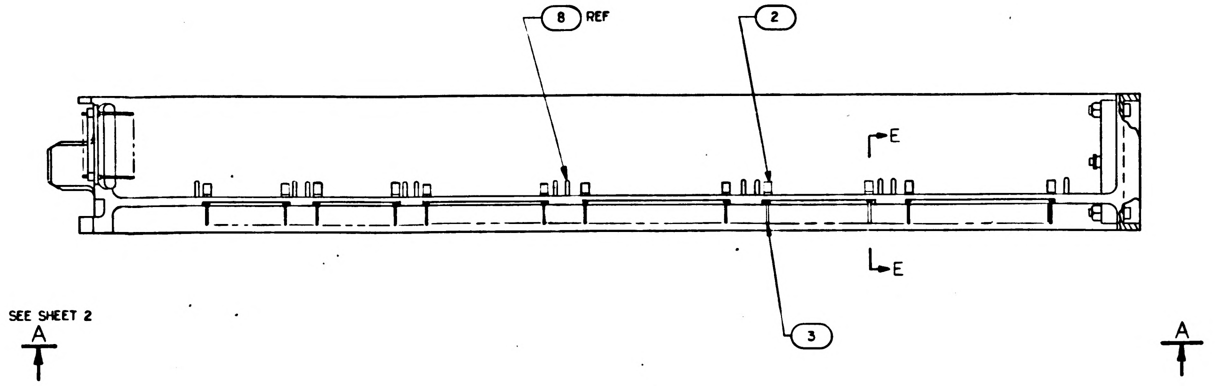
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
B		REPLACE WORD DWG REV A PER TDRR 14706			8/64		WR
C		REVISED PER TDRR 15159			23 Dec '64		WR
D		REVISED PER TDRR 15948		CW	11-FEB-65		
E		REVISED PER TDRR 16333	JM		15-FEB 65		
F		REVISED PER TDRR 17613	JJJ		25 MAR 65		
G		REVISED PER TDRR 18690		EF	4 MAY 65		
H		REVISED PER TDRR 18691	JJJ	EF	4 MAY 65		

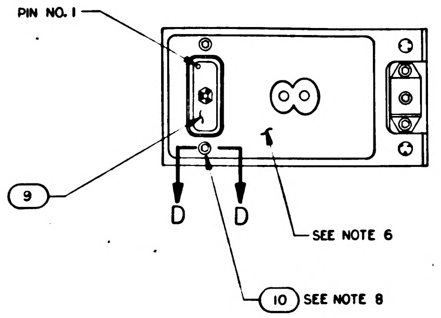


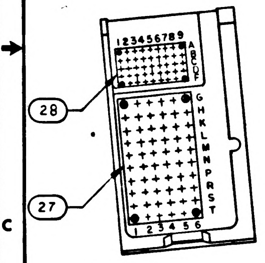
SECTION D-D
SCALE 2/1

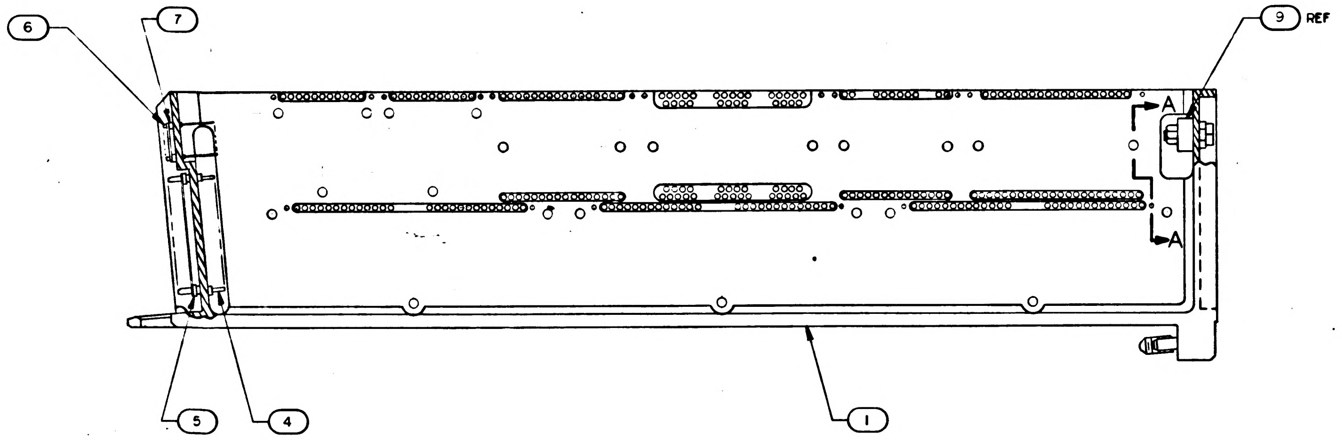


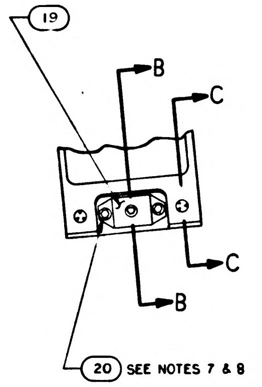
PARTIAL SECTION E-E
251 PLACES







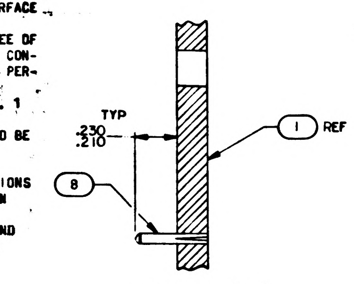




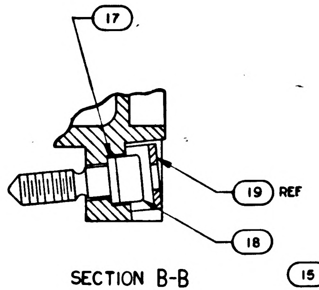
Ⓑ REPLACES WORD DWG REV A

NOTES:

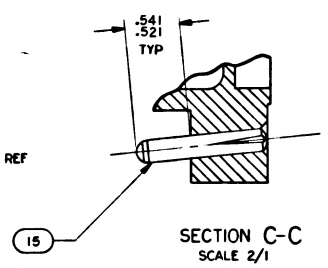
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4, 5, 6 AND 7 PER ND 1002136
3. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
4. BOND FIND NOS. 21, 22, 23 AND 26 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A OR B USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL BUT NOT TO EXCEED .100 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
7. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
10. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.



SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO
☒	1009568		WIRING DIAGRAM	REF
1	1008553		GASKET, CONNECTOR	28
1	1008552		GASKET, CONNECTOR	27
1	1008614		WIRE LIST A A	26
1				25
1				24
1	1008613		WIRING HARNESS C	23
1	1008612		WIRING HARNESS B	22
1	1008611		WIRING HARNESS A	21
3	MS16995-10		SCREW, CAP, SOCKET HEAD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HEAD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
~~23~~	~~1008172~~		~~SCREW, JACK~~	14
~~23~~	~~1004207~~		~~DRIVE CYLINDER~~	13
~~23~~	~~MS171433~~		~~PIN, SPRING~~	12
~~46~~	~~1004206~~		~~WASHER, THRUST~~	11
2	MS16995-11		SCREW, CAP, SOCKET HEAD	10
1	1010821 -1		CONNECTOR, RECEPTACLE	9
18	MS 16556-604		PIN, GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	010382-1		CONTACT, BLADE EDGE CONN	4
251	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
251	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008528		FRAME	1

-011 LIST OF MATERIALS

1007538 H

1007578	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN 2 Sept 64
CHECKED
APPROVED
APPROVED 12/9/64
APPROVED MIT
APPROVED MSC 12 8 64
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

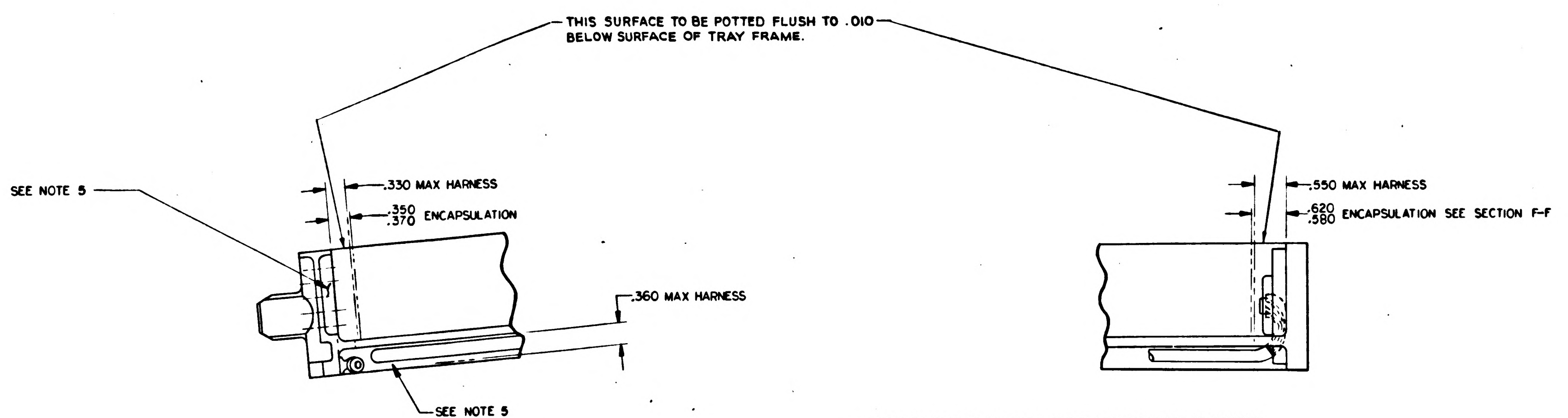
FRAME ASSEMBLY
TRAY 8

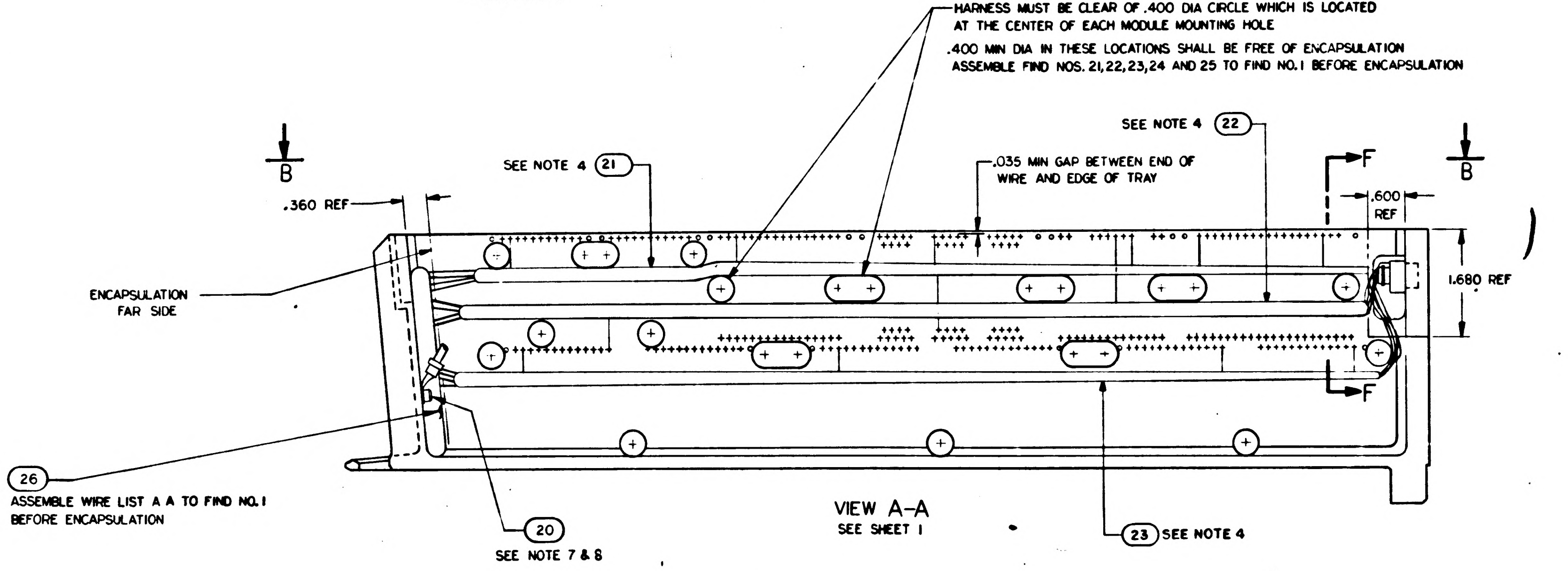
CODE IDENT NO 80230
SIZE E
DRAWING NO. 1007538
SCALE 1/1
SHEET 1 OF 2

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

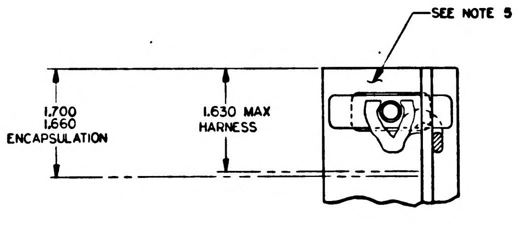
REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706			12/8/64	
C		REVISED PER TDRR 15159			29 Dec 64	
D		REVISED PER TDRR 15948			11-FEB 65	
E		REVISED PER TDRR 16333	JN		5-Feb 65	
F		REVISED PER TDRR 17613	JJJ		25 MAR 65	
G		REVISED PER TDRR 18690.		EF	4 MAY 65	
H		REVISED PER TDRR 18691	JJJ	EF	7 MAY 65	

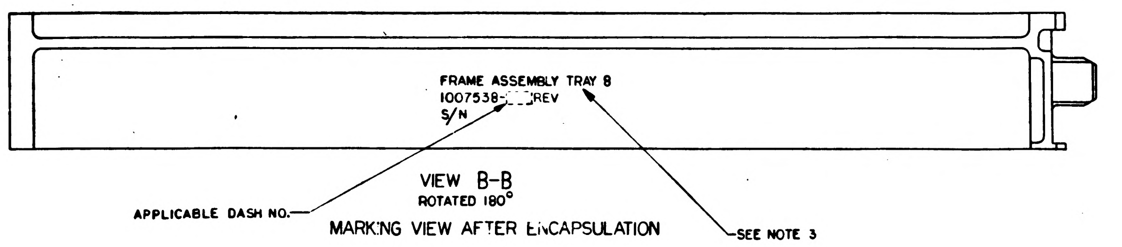

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME.
SEE NOTE 5
.330 MAX HARNESS
.350 .370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 5
.550 MAX HARNESS
.620 .580 ENCAPSULATION SEE SECTION F-F


HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION
ASSEMBLE FIND NOS. 21,22,23,24 AND 25 TO FIND NO.1 BEFORE ENCAPSULATION
SEE NOTE 4 (22)
B
SEE NOTE 4 (21)
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
F
B
.360 REF
.600 REF
1.680 REF
ENCAPSULATION FAR SIDE
F
(26)
ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
(20)
SEE NOTE 7 & 8
(23) SEE NOTE 4

VIEW A-A
SEE SHEET 1


SEE NOTE 5
1.700 1.660 ENCAPSULATION
1.630 MAX HARNESS

PARTIAL SECTION F-F


FRAME ASSEMBLY TRAY 8
1007538-   REV
S/N
APPLICABLE DASH NO.
SEE NOTE 3

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS .XXX ±.005 .XX ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN B J Papia 3 Sept 64
CHECKED
APPROVED
APPROVED D. B. Feat 12/4/64
APPROVED MIT
APPROVED MSC W J Rhine 12/ 64
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 8

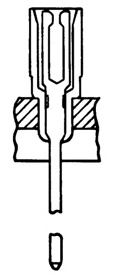
CODE IDENT NO. 80230
SIZE E
DRAWING NO. 1007538
SCALE 1/1
SHEET 2 OF 2

1007538 H

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

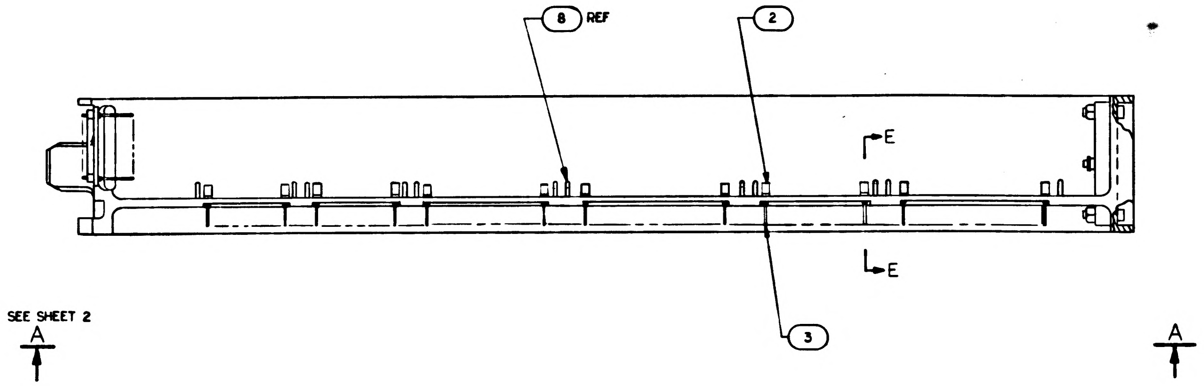
REVISIONS

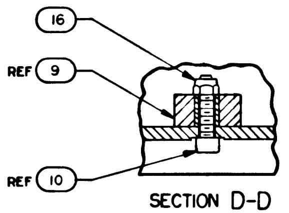
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706	GB		9/5/64	WW
C		REVISED PER TDRR 15159	GG	T.M.L.	29 Dec '64	WR
D		REVISED PER TDRR 5497		CW	11-FEB-65	
E		REVISED PER TDRR 16333	JM		15-FEB 65	
F		REVISED PER TDRR 17613		WR	25 MAR 65	
G		REVISED PER TDRR 186[illegible]		EF	65	
H		REVISED PER TDRR 18691		EF	MAY 65	
J		REVISED PER TDRR 18695	A.N		11 MAY 65	



PARTIAL SECTION E-E

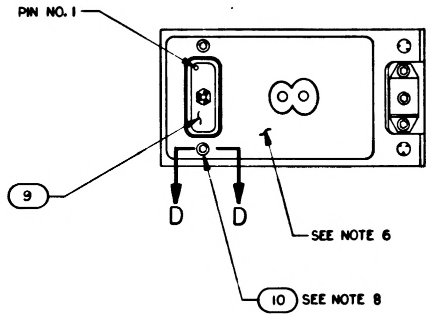
251 PLACES

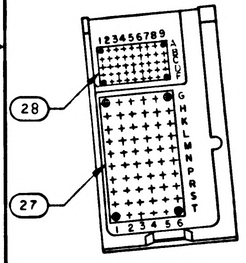


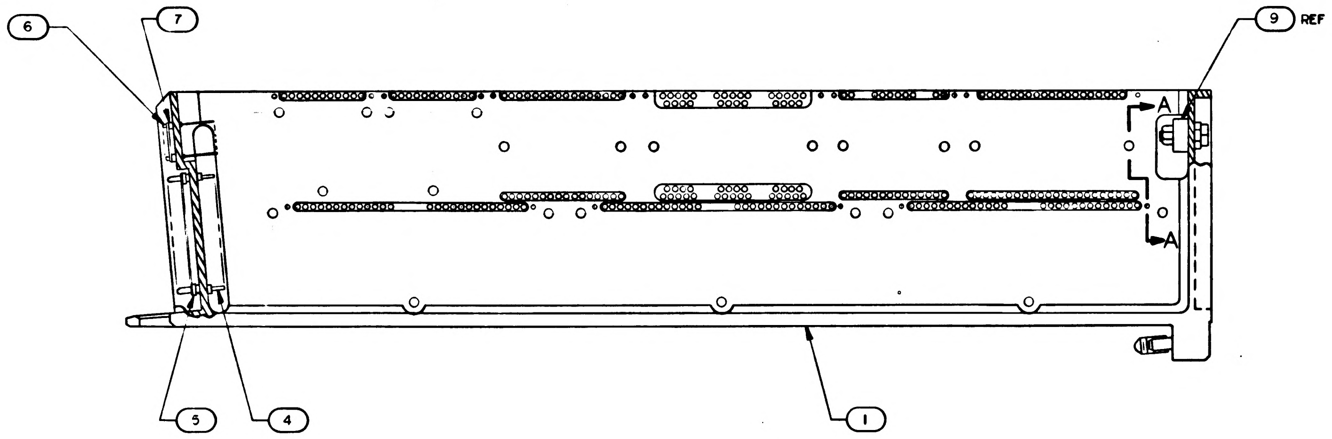


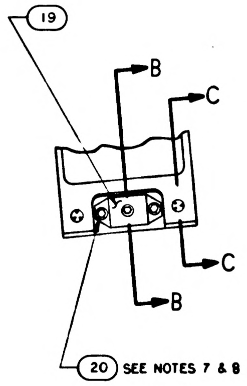
SECTION D-D

SCALE 2/1







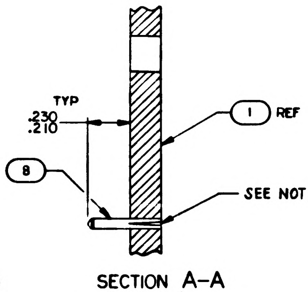


Ⓑ REPLACES WORD DWG REV A

NOTES:

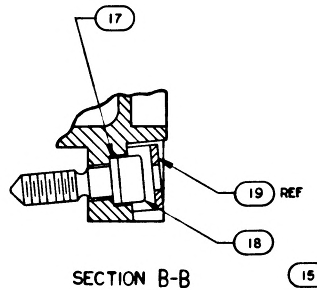
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4, 5, 6 AND 7 PER ND 1002136
3. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
4. BOND FIND NOS. 21, 22, 23 AND 26 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A OR B USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
7. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
10. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.

. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.



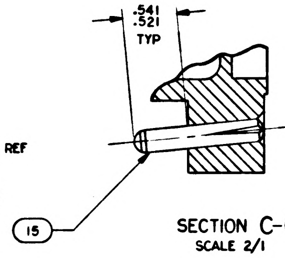
SECTION A-A

SCALE 3/1



SECTION B-B

SCALE 2/1



SECTION C-C

SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009568		WIRING DIAGRAM	REF
1	1008553		GASKET, CONNECTOR	28
1	1008552		GASKET, CONNECTOR	27
1	1008614		WIRE LIST A A	26
1				25
1				24
1	1008613		WIRING HARNESS C	23
1	1008612		WIRING HARNESS B	22
1	1008611		WIRING HARNESS A	21
3	MS16995-10		SCREW, CAP, SOCKET HEAD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HEAD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
~~23~~	~~1008172~~		~~SCREW, JACK~~	14
~~23~~	~~1004207~~		~~DRIVE CYLINDER~~	13
~~23~~	~~MS171433~~		~~PIN, SPRING~~	12
~~46~~	~~1004206~~		~~WASHER, THRUST~~	11
2	MS16995-11		SCREW, CAP, SOCKET HEAD	10
1	1010821-1		CONNECTOR, RECEPTACLE	9
18	MS16556-604		PIN, GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	.010382-1		CONTACT, BLADE EDGE CONN	4
251	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
251	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008528		FRAME	1
-011	LIST OF MATERIALS			

1007578	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN C. J. Papias 2 Sept 64
CHECKED 15 Sept 64
APPROVED
APPROVED 12/9/64
APPROVED MIT Dec 64
APPROVED MSC 12/8/64
DATE

FRAME ASSEMBLY
TRAY 8

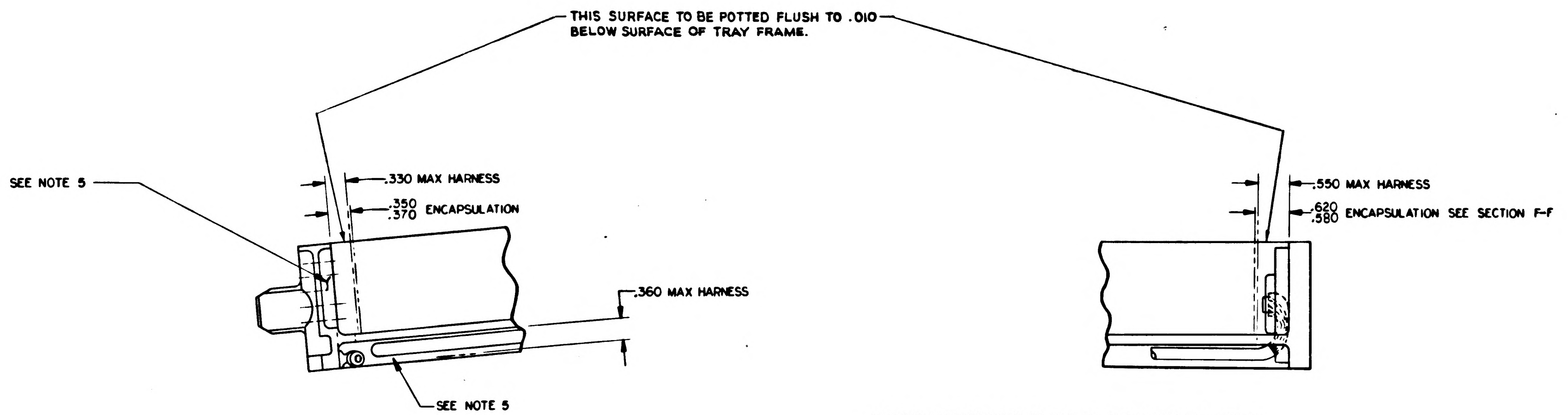
CODE IDENT NO. 80230
SIZE E
DRAWING NO. 1007538
SCALE 1/1
SHEET 1 OF 2

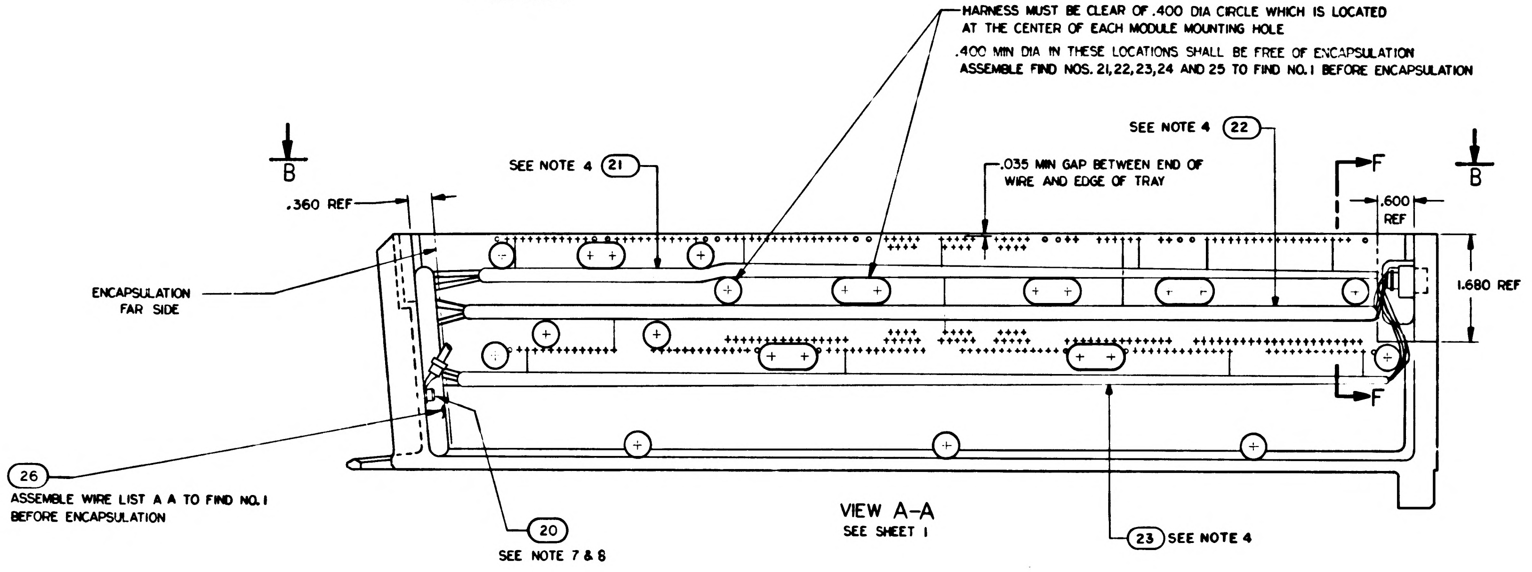
1007538 J

NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

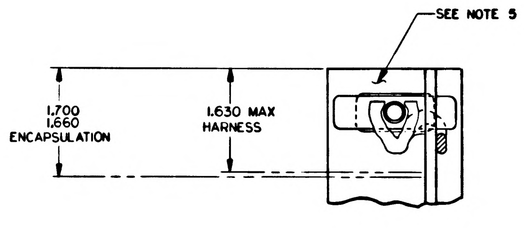
REVISIONS

	SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
Ⓜ	B		REPLACES WORD DWG REV A PER TDRR 14706	[illegible]		7/8/64		[illegible]
	C		REVISED PER TDRR 15159	[illegible]	[illegible]	29 Dec 64		[illegible]
	D		REVISED PER TDRR 15948	[illegible]	[illegible]	[illegible]		
Ⓜ	E		REVISED PER TDRR 16333	JN	[illegible]	2-Feb 65		
Ⓜ	F		REVISED PER TDRR 17613	JJJ	[illegible]	[illegible]		
	G		REVISED PER TDRR 18690.	[illegible]	[illegible]	[illegible]		
	H		REVISED PER TDRR 18691	JJJ	[illegible]	[illegible]		
	J		REVISED PER TDRR 18695	A.N.	[illegible]			

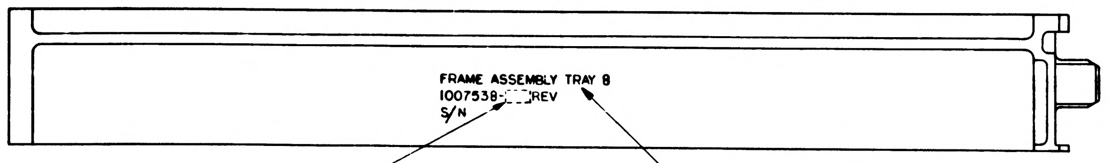

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME.
SEE NOTE 5
.330 MAX HARNESS
.350 .370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 5
.550 MAX HARNESS
.620 .580 ENCAPSULATION SEE SECTION F-F


HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION
ASSEMBLE FIND NOS. 21,22,23,24 AND 25 TO FIND NO. 1 BEFORE ENCAPSULATION
B
SEE NOTE 4 (21)
SEE NOTE 4 (22)
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
F
B
.360 REF
.600 REF
1.680 REF
ENCAPSULATION FAR SIDE
F
(26)
ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
(20)
SEE NOTE 7 & 8
(23) SEE NOTE 4

VIEW A–A
SEE SHEET 1


SEE NOTE 5
1.700 1.660 ENCAPSULATION
1.630 MAX HARNESS

PARTIAL SECTION F–F


FRAME ASSEMBLY TRAY 8
1007538-___REV
S/N
APPLICABLE DASH NO.
SEE NOTE 3

VIEW B–B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS .XXX ± .005 .XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN B. J. Napia 3 Sep 64
CHECKED [illegible]
APPROVED
APPROVED [illegible] 12/4/64
APPROVED MIT [illegible]
APPROVED MSC [illegible]
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 8

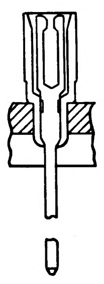
CODE IDENT NO. 80230
SIZE E
DRAWING NO. 1007538
SCALE 1/1
SHEET 2 OF 2

J
1007538

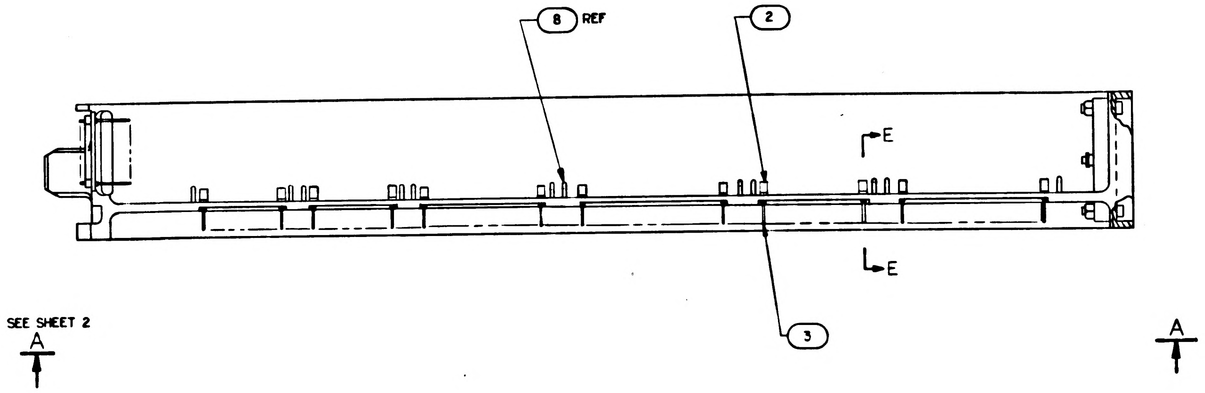
NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

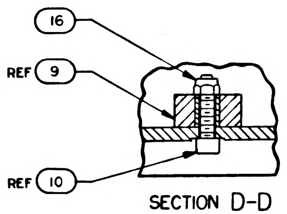
REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
B		REPLACES WORD DWG REV A PER TDRR 14726			9/6/64		W
C		REVISED PER TDRR 15159			29 Dec 64		GK
D		REVISED PER TDRR 15948			11-FEB-65		
E		REVISED PER TDRR 16333	JM		5 FEB 65		
F		REVISED PER TDRR 17613	J J		25 MAR 65		
G		REVISED PER TDRR 18690		EF	65		
H		REVISED PER TDRR 18691		EF	MAY 65		
J		REVISED PER TDRR 18695			11 MAY 65		
K		REVISED PER TDRR 20145		FC			

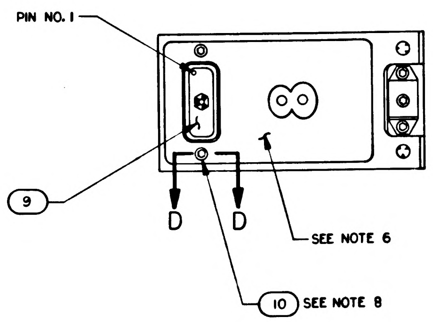


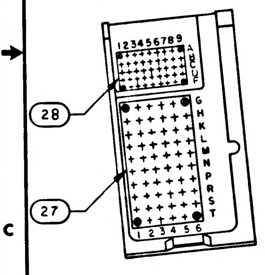
PARTIAL SECTION E-E
251 PLACES

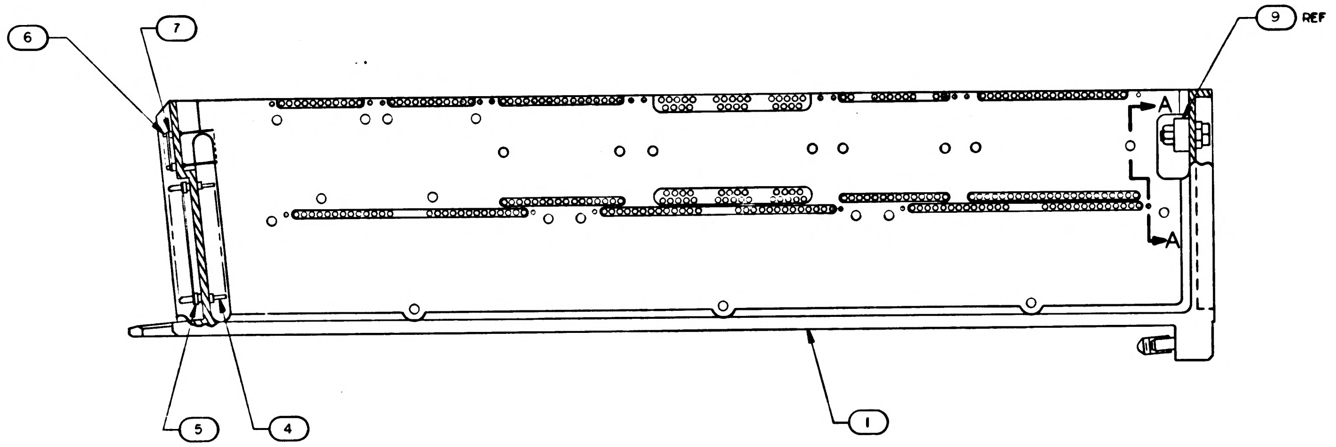


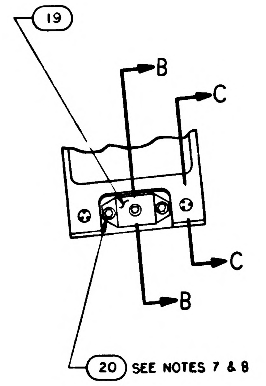


SECTION D-D
SCALE 2/1





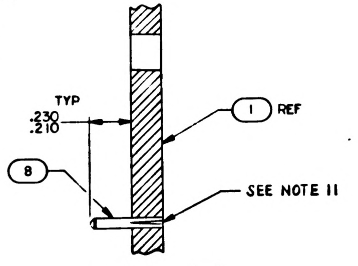




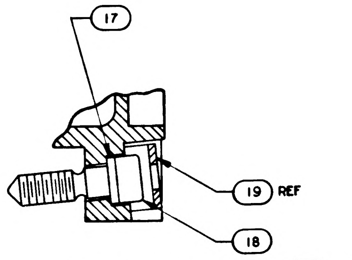
Ⓑ REPLACES WORD DWG REV A

NOTES:

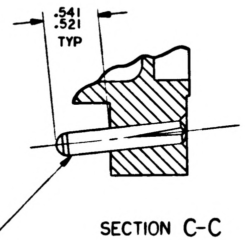
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4, 5, 6 AND 7 PER ND 1002136
3. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
4. BOND FIND NOS. 21, 22, 23 AND 26 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A OR B USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
7. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
10. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.
11. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.
12. PROCURE PER P. [illegible]007148.



SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009568		WIRING DIAGRAM	REF
1	1008553		GASKET, CONNECTOR	28
1	1008552		GASKET, CONNECTOR	27
1	1008614		WIRE LIST A A	26
1				25
1				24
1	1008613		WIRING HARNESS C	23
1	1008612		WIRING HARNESS B	22
1	1008611		WIRING HARNESS A	21
3	MS16995-10		SCREW, CAP, SOCKET HEAD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HEAD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
~~23~~	~~1008172~~		~~SCREW, JACK~~	14
~~23~~	~~1004207~~		~~DRIVE CYLINDER~~	13
~~23~~	~~MS171433~~		~~PIN, SPRING~~	12
~~46~~	~~1004206~~		~~WASHER, THRUST~~	11
2	MS16995-11		SCREW, CAP, SOCKET HEAD	10
1	1010821-1		CONNECTOR, RECEPTACLE	9
18	MS 16556-604		PIN, GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MALE	5
60	1010382-1		CONTACT, BLADE EDGE CONN	4
251	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
251	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008528		FRAME	1

-011 LIST OF MATERIALS

NEXT ASSY	USED ON
1007578	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

		DATE
DRAWN	B. Papias	2 Sept 64
CHECKED		5 Oct 64
APPROVED		
APPROVED		12/9/64
APPROVED MIT		Dec 64
APPROVED MSC		12-8-64

FRAME ASSEMBLY
TRAY 8

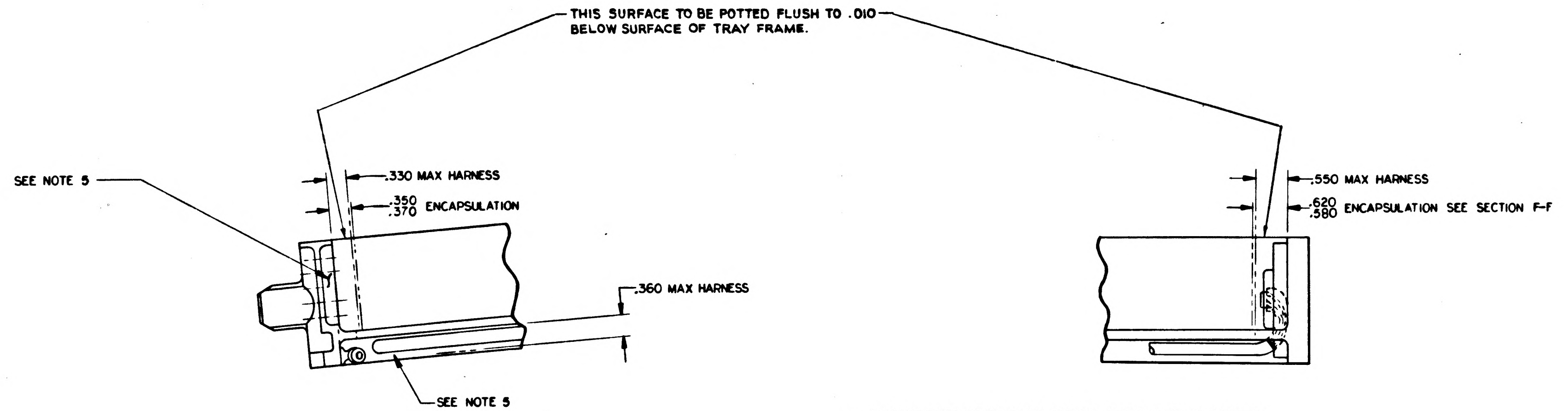
CODE IDENT NO. 80230
SIZE E
DRAWING NO. 1007538
SCALE 1/1
SHEET 1 OF 2

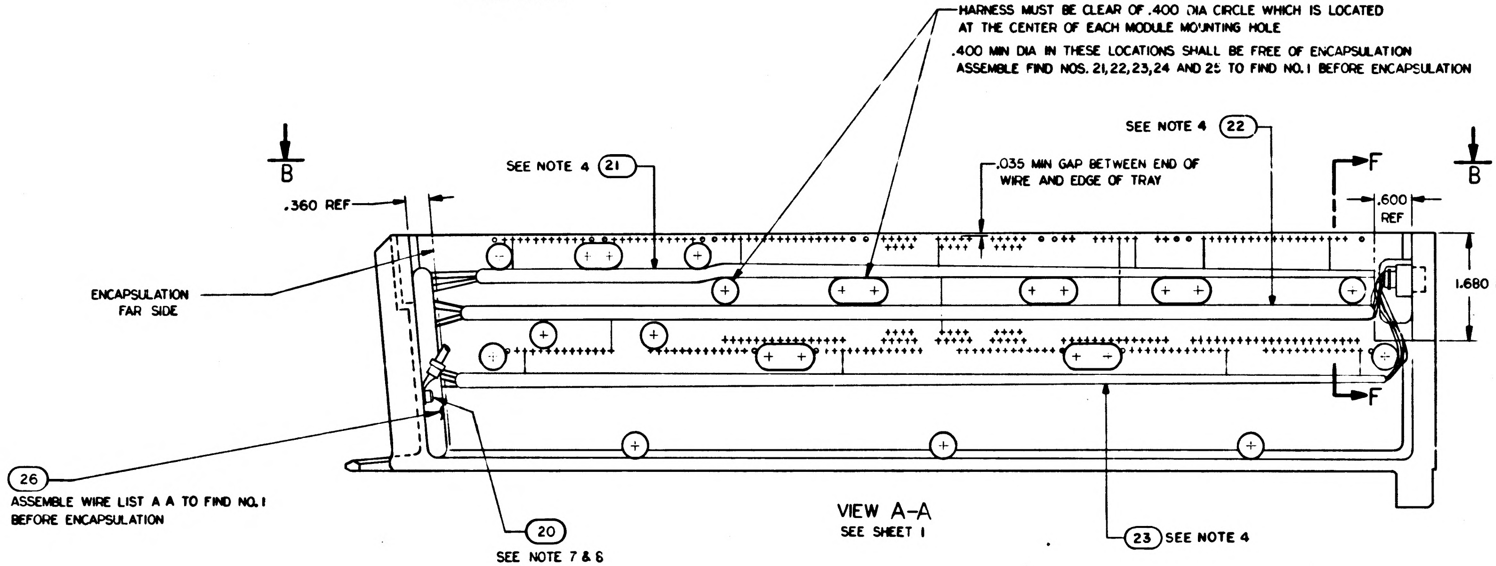
1007538 K

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

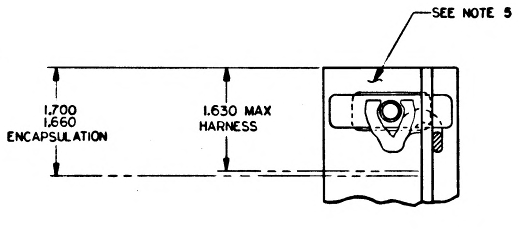
REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706	[illegible]		[illegible]	[illegible]
C		REVISED PER TDRR 15159	[illegible]	[illegible]	29 Dec 64	[illegible]
D		REVISED PER TDRR 15948	[illegible]	[illegible]	11-FEB 65	
E		REVISED PER TDRR 16333	JN	[illegible]	5-FEB 65	
F		REVISED PER TDRR 17613	JJJ	[illegible]	[illegible] MAR 65	
G		REVISED PER TDRR 18690	[illegible]	[illegible]	[illegible]	
H		REVISED PER TDRR 18691	JJJ	[illegible]	[illegible] MAY 65	
J		REVISED PER TDRR 18695	A.N.	[illegible]	[illegible] 65	
K		REVISION STATUS CHANGED	[illegible]	JRC	[illegible]	

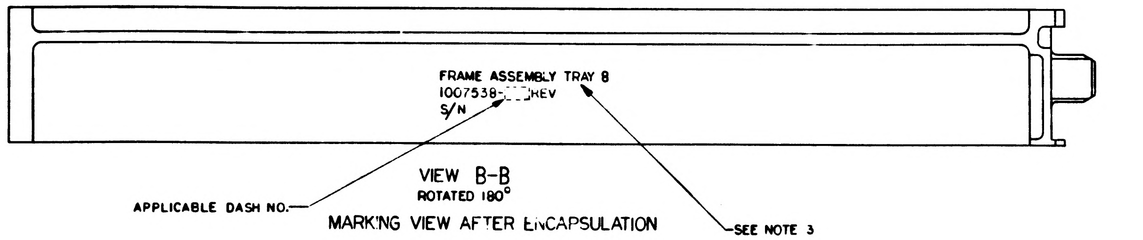

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME.
SEE NOTE 5
.330 MAX HARNESS
.350 .370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 5
.550 MAX HARNESS
.620 .580 ENCAPSULATION SEE SECTION F-F


HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION
ASSEMBLE FIND NOS. 21, 22, 23, 24 AND 25 TO FIND NO. 1 BEFORE ENCAPSULATION
SEE NOTE 4 ㉒
B
SEE NOTE 4 ㉑
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
F
B
.360 REF
.600 REF
ENCAPSULATION FAR SIDE
1.680 REF
F
㉖
ASSEMBLE WIRE LIST A A TO FIND NO. 1 BEFORE ENCAPSULATION
⑳
SEE NOTE 7 & 6
㉓ SEE NOTE 4

VIEW A-A
SEE SHEET 1


SEE NOTE 5
1.700 1.660 ENCAPSULATION
1.630 MAX HARNESS

PARTIAL SECTION F-F


FRAME ASSEMBLY TRAY 8
1007538-___ REV
S/N
APPLICABLE DASH NO.
SEE NOTE 3

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS XXX ± .005 XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN B J Papia 3 Sept 64
CHECKED R. K. Hong [illegible] 4 Sept 64
APPROVED
APPROVED D. R. Test 12/4/64
APPROVED MIT [illegible] 12/4/64
APPROVED MSC W. J. Klein 12/4/64
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

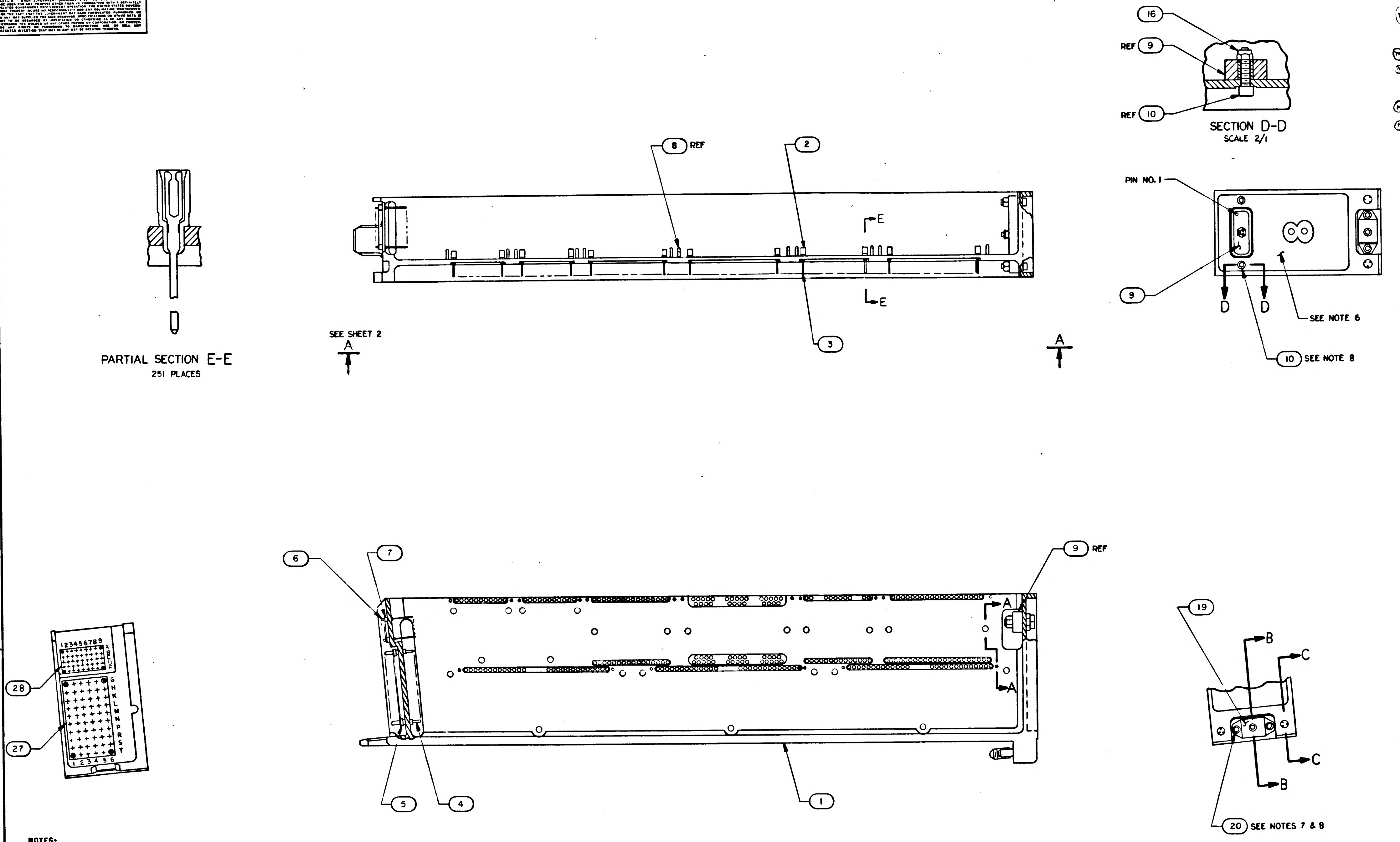
FRAME ASSEMBLY
TRAY 8

CODE IDENT NO. 80230
SIZE E
DRAWING NO. 1007538
SCALE 1/1
SHEET 2 OF 2

1007538

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

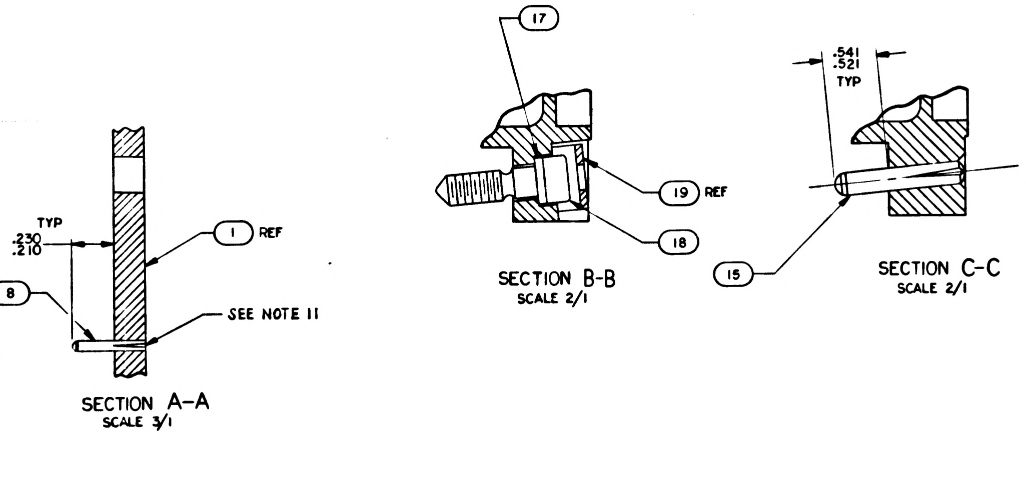
REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
Ⓜ B		REPLACED WORD DWG REV A PER TDRR 14706			1/15/64	W
C		REVISED PER TDRR 15159			29 Dec 64	
D		REVISED PER TDRR 159[illegible]		CW	11-FEB-65	
Ⓜ E		REVISED PER TDRR 16333	JM		15-FEB 65	
Ⓜ F		REVISED PER TDRR 17613	JJJ		25 MAR 65	
G		REVISED PER TDRR 18690		EF		
H		REVISED PER TDRR 18691	JJ	EF		
Ⓜ J		REVISED PER TDRR 18695				
Ⓜ K		REVISED PER TDRR 20145				
L		REVISED PER TDRR 20785		JH	22	



Ⓑ REPLACES WORD DWG REV A

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4, 5, 6 AND 7 PER ND 1002136
3. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
4. BOND FIND NOS. 21, 22, 23 AND 26 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
5. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A OR B USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
6. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR, EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE.
7. COAT THREADS OF FIND NO. 20 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
8. MOUNTING TORQUE FOR FIND NO. 10 AND 20 TO FIND NO. 1 TO BE 5.0 TO 5.5 IN. LB
9. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED PER ND 1002071. ALL CRIMPED CONTACT PIN. TERMINATIONS TO BE INSERTED AT TERMINATION POINT
10. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A FORMULATION CONSISTING OF 40 PARTS BY WT. 1010959-1, 100 PARTS BY WT. 1010959-2, AND 7 PARTS BY WT. 10062[illegible]7 AND CURE AT ROOM TEMPERATURE FOR THREE HOURS OR ONE HOUR AT 140°F. LIMITED AMOUNT ALLOWED TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004, TYPE I.
11. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND 1002004, POTTING SIDE ONLY.
12. PROCURE PER PS 1007148.



QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009568		WIRING DIAGRAM	REF
1	1008553		GASKET, CONNECTOR	28
1	1008552		GASKET, CONNECTOR	27
1	1008614		WIRE LIST A A	26
1				25
1				24
1	1008613		WIRING HARNESS C	23
1	1008612		WIRING HARNESS B	22
1	1008611		WIRING HARNESS A	21
3	MS16995-10		SCREW, CAP, SOCKET HEAD	20
1	1001317		RETAINER, JACK SCREW	19
1	1008098		SCREW, SOCKET HEAD	18
1	1008099-2		WASHER	17
2	MS21045C04		NUT, SELF-LOCKING HEX	16
2	1010620-5		PIN, GUIDE	15
~~23~~	~~1008172~~		~~SCREW, JACK~~	14
~~23~~	~~1004207~~		~~DRIVE CYLINDER~~	13
~~23~~	~~MS171433~~		~~PIN, SPRING~~	12
~~46~~	~~1004206~~		~~WASHER, THRUST~~	11
2	MS16995-11		SCREW, CAP, SOCKET HEAD	10
1	1010821-1		CONNECTOR, RECEPTACLE	9
18	MS16556-604		PIN, GUIDE	8
45	1006775		INSULATOR, WRAPOST, MALE MINAT	7
45	1006782-2		CONTACT, WRAPOST, MALE MINAT	6
60	1010383-1		INSULATOR, WRAPOST, MA[illegible]	5
60	1010382-1		CONTACT, BLADE EDGE CON	4
251	1006781-2		CONTACT, WRAPOST, FEMALE MINAT	3
251	1006774		INSULATOR, WRAPOST, FEMALE MINAT	2
1	1008528		FRAME	1
-011	LIST OF MATERIALS			

1007578	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN E.J. Pappas 2 Sept 64
CHECKED 5 Oct 64
APPROVED
APPROVED 12/8/64
APPROVED MIT Dec 64
APPROVED MSC 12-8-64
DATE

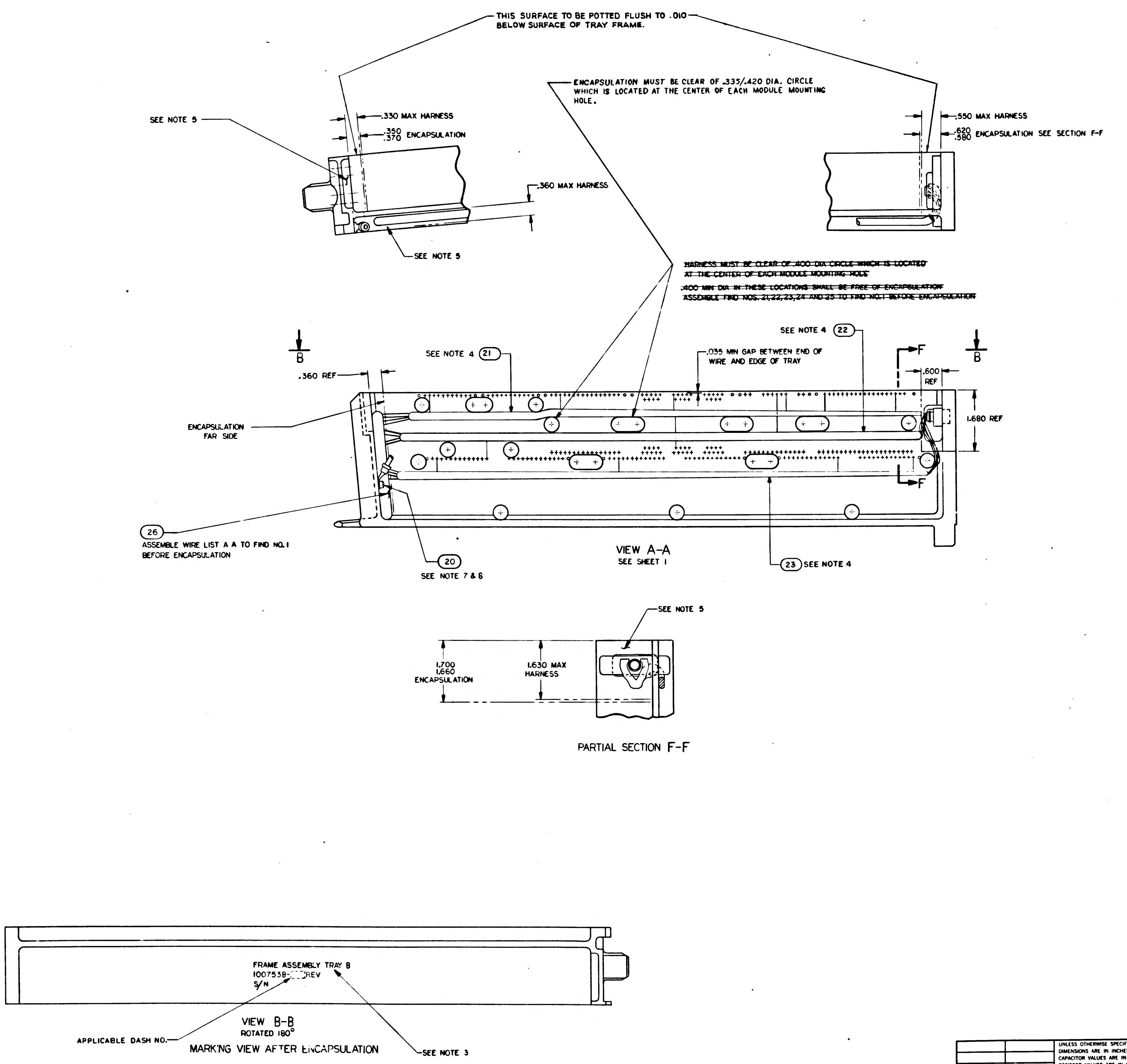
FRAME ASSEMBLY
TRAY 8

CODE IDENT NO. 80230
SIZE E
DRAWING NO. 1007538
SCALE 1/1
SHEET 1 OF 2

NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

	SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
Ⓜ	B		REPLACES WORD DWG REV A PER TDRR 14766	H		7/[illegible] 64	[illegible]
	C		REVISED PER TDRR 15159	[illegible]	[illegible]	29 Dec 64	[illegible]
	D		REVISED PER TDRR 15948	[illegible]		11-FEB	
Ⓜ	E		REVISED PER TDRR 16333	JN	[illegible]	5-FEB 65	
Ⓜ	F		REVISED PER TDRR 17613	JJJ	[illegible]	[illegible] MAR 65	
	G		REVISED PER TDRR 18690.	[illegible]	[illegible]	[illegible]	
	H		REVISED PER TDRR 18691	JJJ	[illegible]	[illegible]	
Ⓜ	J		REVISED PER TDRR 18695	A.N.	[illegible]	[illegible]	
Ⓜ	K		REVISION STATUS CHANGED	RJJ	JRC	[illegible]	
	L		REVISED PER TDRR 20785	WJR	[illegible]	[illegible]	


THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME.
ENCAPSULATION MUST BE CLEAR OF .335/.420 DIA. CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
SEE NOTE 5
.330 MAX HARNESS
.350 .370 ENCAPSULATION
.360 MAX HARNESS
SEE NOTE 5
.550 MAX HARNESS
.620 .580 ENCAPSULATION SEE SECTION F-F
~~HARNESS MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE~~
~~.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION~~
~~ASSEMBLE FIND NOS. 21,22,23,24 AND 25 TO FIND NO.1 BEFORE ENCAPSULATION~~
B
B
SEE NOTE 4 (21)
SEE NOTE 4 (22)
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
F
F
.360 REF
.600 REF
1.680 REF
ENCAPSULATION FAR SIDE
(26)
ASSEMBLE WIRE LIST A A TO FIND NO. I BEFORE ENCAPSULATION
(20)
SEE NOTE 7 & 8
VIEW A-A
SEE SHEET I
(23) SEE NOTE 4
SEE NOTE 5
1.700 1.660 ENCAPSULATION
1.630 MAX HARNESS
PARTIAL SECTION F-F
FRAME ASSEMBLY TRAY 8
1007538- REV
S/N
APPLICABLE DASH NO.
VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION
SEE NOTE 3

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — XXX ±.005 XX ±.02 ± —
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN B. J. Vaggia 3 Sept 64
CHECKED [illegible] [illegible] 64
APPROVED
APPROVED [illegible] [illegible] 64
APPROVED MIT [illegible] [illegible] 64
APPROVED MSC W. J. Kline 12 [illegible]
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 8

CODE IDENT NO. 80230
SIZE E
DRAWING NO. 1007538
SCALE 1/1
SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1007538

REVISIONS 12031

SYM	DESCRIPTION	DATE	APPROVAL

DASH NO. 011

PART NO.	DESCRIPTION	REQD.
1008528-001	Frame, Tray 8	1
1006774	Insulator, Wrapost, Female Miniature	247
1006781-2	Contact, Wrapost, Female Miniature	247
1010382-1	Contact, Blade Edge Connector	60
1010383-1	Insulator, Wrapost, Male	60
1010622-1	Connector Receptacle	1
1010620-4	Pin, Guide	18
1010620-5	Pin, Guide	2
1001317	Retainer, Jack Screw	1
1008172	Screw, Jack	23
1008098	Screw, Socket Head Externally Relieved Body	1
1004206	Washer, Thrust	46
1008099-2	Washer	1
1004207	Drive Cylinder	23
MS 16995-10	Screw, Cap, Socket Head	3
MS 16995-11	Screw, Cap, Socket Head	2
MS 21045 C 04	Nut, Self-Locking Hex	2
1006782-2	Contact, Wrapost-Male, Miniature	45
1006775	Insulator, Wrapost-Male, Miniature	45
MS 171433	Pin, Spring	23
1008552-001	Gasket, Connector	1
1008553-001	Gasket, Connector	1

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007578	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN Karen DATE 7/15/64
CHECKED
APPROVAL
APPROVAL D. B. Fest 8/24/64
NASA APPROVAL 9/4/64
MIT APPROVAL W Kupfer 2 Sep 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 8
(100 SERIES)

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007538
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

(r) A 1007539

REVISIONS 12031

SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED BY CONFIGURATION DWG REV "B" PER TDRR 14706	12/8/64	WK

DASH NO. 011

PART NO.	DESCRIPTION	REQD.
1008529 -001	Frame, Tray 9	1
1006774	Insulator, Wrapost, Female Miniature	219
1006781-2	Contact, Wrapost, Female Miniature	219
1010382-1	Contact, Blade Edge Connector	60
1010383-1	Insulator, Wrapost, Male	60
1010622-1	Connector Receptacle	1
1010620-4	Pin, Guide	16
1010620-5	Pin, Guide	2
1001317	Retainer, Jack Screw	1
1008172	Screw, Jack	19
1008098	Screw, Socket Head,	1
1004206	Washer, Thrust	38
1008099-2	Washer	1
1004207	Drive Cylinder	19
MS 16995-10	Screw, Cap, Socket Head	3
MS 16995-11	Screw, Cap, Socket Head	2
MS 21045 C 04	Nut, Self-Locking Hex	2
1006782-2	Contact, Wrapost-Male, Miniature	45
1006775	Insulator, Wrapost-Male, Miniature	45
MS 171433	Pin, Spring	19
1008552-001	Gasket, Connector	1
1008553-001	Gasket, Connector	1

Ⓐ REPLACED BY CONFIGURATION DWG REV "B"

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN Karen DATE 7/15/64
CHECKED
APPROVAL
APPROVAL A. B. Test 8/24/64
NASA APPROVAL K Mintach 8/4/64
MIT APPROVAL W Kupfer 25 Aug 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

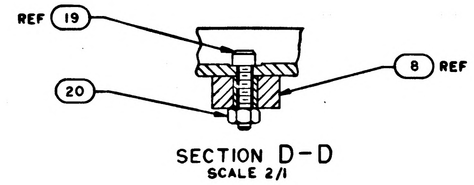
FRAME ASSEMBLY
TRAY 9
(100 SERIES)

CODE IDENT NO.	SIZE	NASA DRAWING NO.
	C	1007539
SCALE	WT	SHEET 1 OF 1

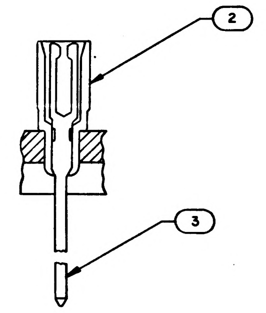
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

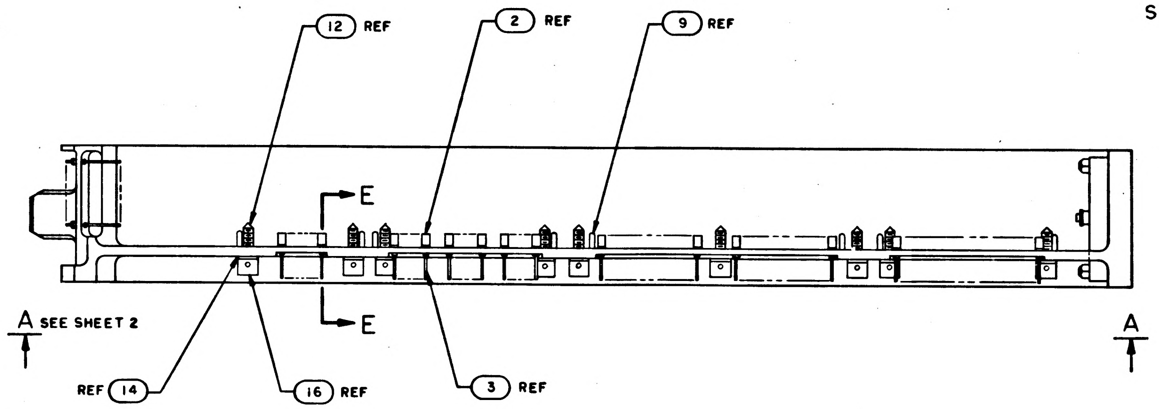
REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706			11/9/64	

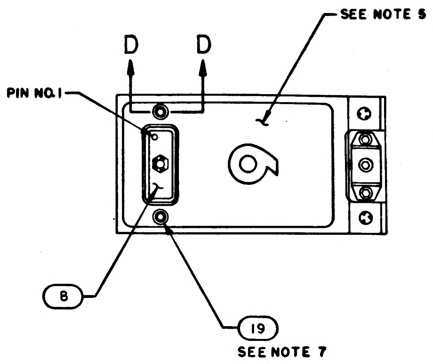


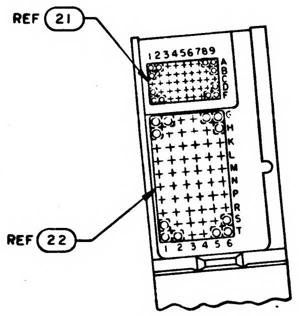
SECTION D-D
SCALE 2/1

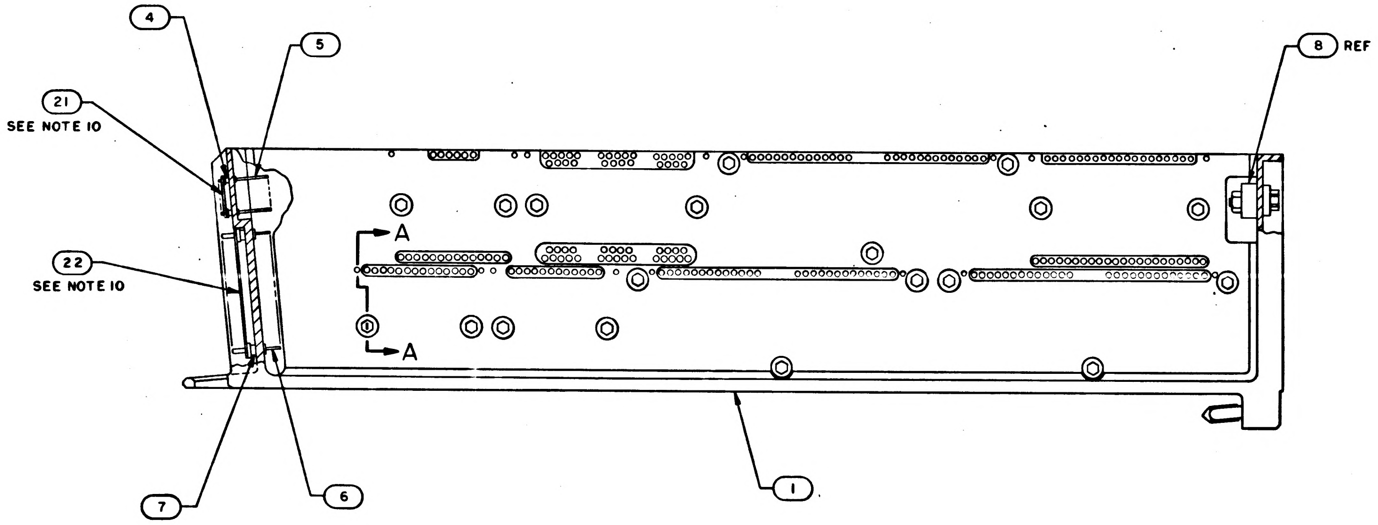


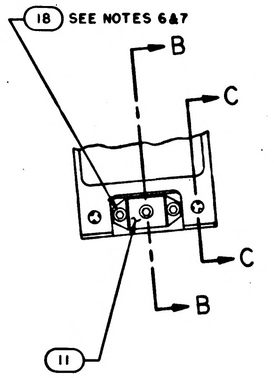
PARTIAL SECTION E-E
219 PLACES



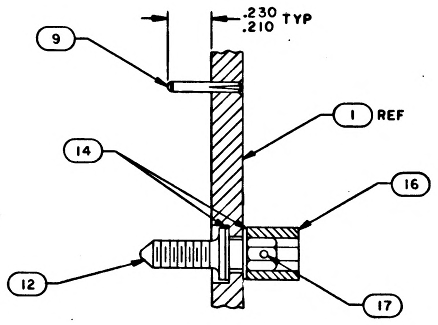




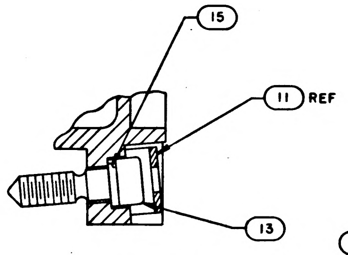




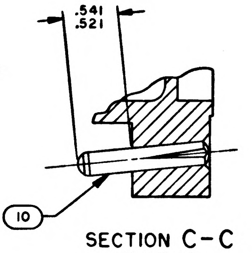
B REPLACES WORD DWG REV A



SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. BOND FIND NOS. 23,24,25,26 AND 27 TO FIND NO.1 PER ND 1002004 TYPE I AS NECESSARY
4. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
5. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
6. COAT THREADS OF FIND NO.18 DURING ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
7. MOUNTING TORQUE FOR FIND NOS. 18 & 19 TO FIND NO.1 TO BE 5.0/5.5 IN LB
8. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
9. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
10. BOND FIND NO. 21 TO FIND NO. 4 AND FIND NO. 22 TO FIND NO. 7 PER ND

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009569		WIRING DIAGRAM	REF
1			WIRE LIST AA	28
1			WIRING HARNESS E	27
1			WIRING HARNESS D	26
1			WIRING HARNESS C	25
1			WIRING HARNESS B	24
1			WIRING HARNESS A	23
1	1008552		GASKET, CONNECTOR	22
1	1008553		GASKET, CONNECTOR	21
2	MS21045C04		NUT, SELF-LOCKING HEX	20
2	MS16995-11		SCREW, CAP, SOCKET HEAD	19
2	MS16995-10		SCREW, CAP, SOCKET HEAD	18
19	MS171433		PIN SPRING	17
19	1004207		DRIVE CYLINDER	16
1	1008099-2		WASHER	15
38	1004206		WASHER THRUST	14
1	1008098		SCREW, SOCKET HEAD	13
19	1008172		SCREW, JACK	12
1	1001317		RETAINER, JACK SCREW	11
2	1010620-5		PIN, GUIDE	10
16	1010620-4		PIN, GUIDE	9
1	1010622-1		CONNECTOR, RECEPTACLE	8
60	1010383-1		INSULATOR, WRAPOST-MALE	7
60	1010382-1		CONTACT, BLADE EDGE CONN	6
45	1006782-2		CONTACT, WRAPOST-MALE, MIN	5
45	1006775		INSULATOR, WRAPOST-MALE, MIN	4
219	1006781-2		CONTACT, WRAPOST-FEMALE, MIN	3
219	1006774		INSULATOR, WRAPOST-FEMALE, MIN	2
1	1008529		FRAME	1

LIST OF MATERIALS

1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R.C. Taylor
CHECKED A. Lindstrom
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

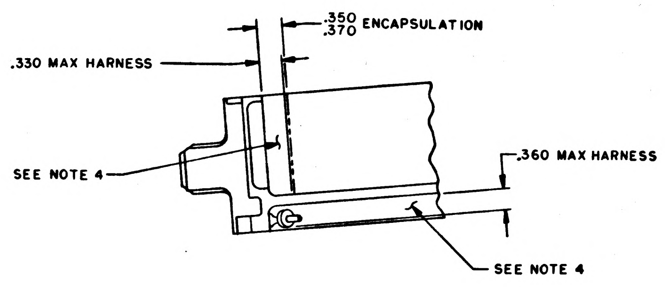
FRAME ASSEMBLY
TRAY 9

CODE IDENT NO. —
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 1 OF 2

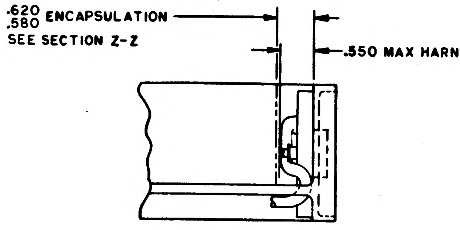
NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

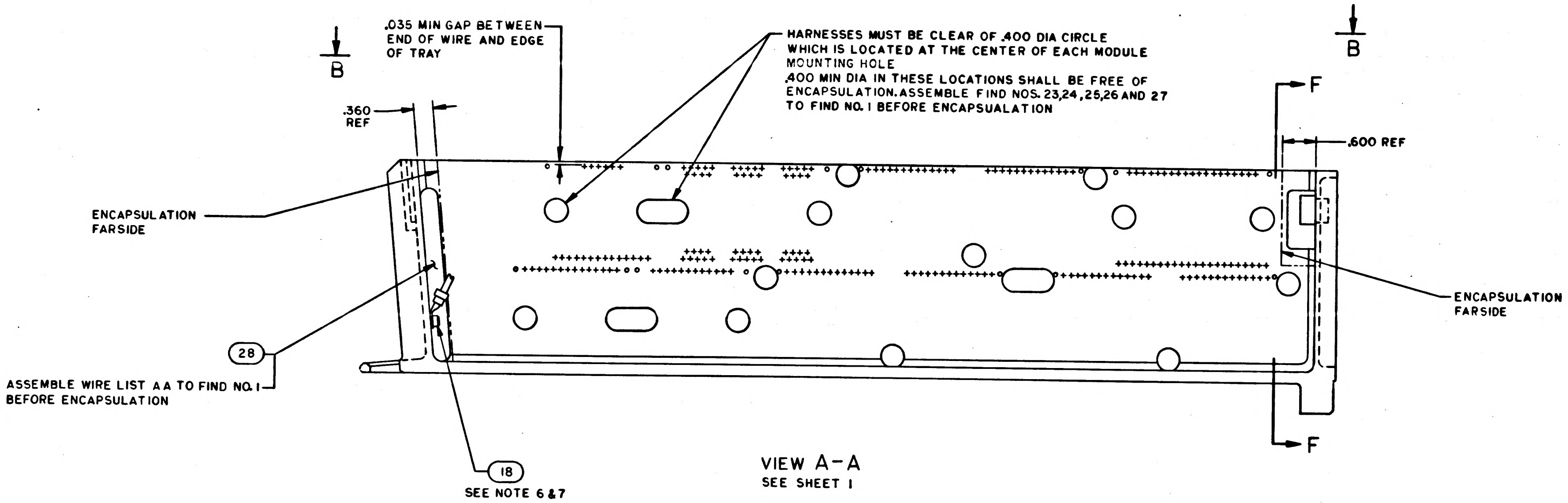
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706			3/ /64	



.350
.370 ENCAPSULATION
.330 MAX HARNESS
SEE NOTE 4
.360 MAX HARNESS
SEE NOTE 4

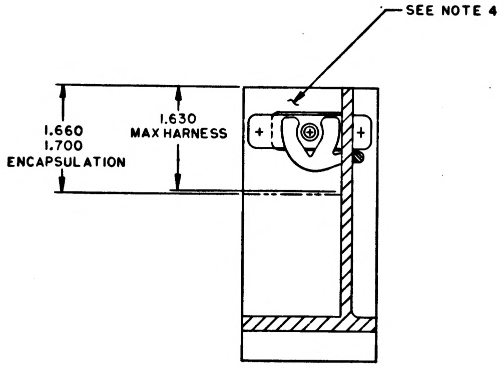


.620
.580 ENCAPSULATION
SEE SECTION Z-Z
.550 MAX HARNESS



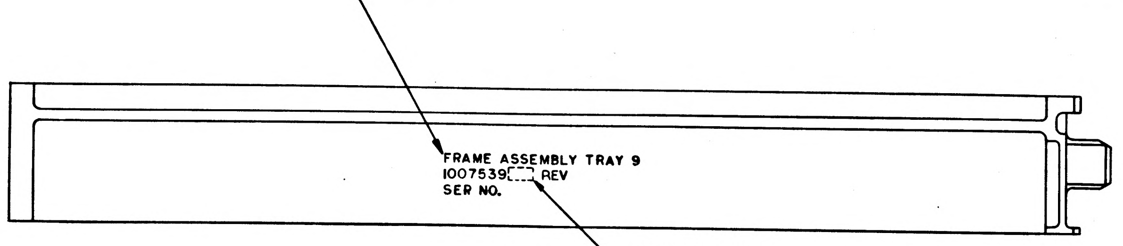
B
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS. 23,24,25,26 AND 27 TO FIND NO. 1 BEFORE ENCAPSUALATION
B
.360 REF
F
.600 REF
ENCAPSULATION FARSIDE
ENCAPSULATION FARSIDE
28
ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION
18
SEE NOTE 6 & 7
F

VIEW A–A
SEE SHEET 1



SEE NOTE 4
1.660
1.700
ENCAPSULATION
1.630
MAX HARNESS

SECTION F–F



SEE NOTE 9
FRAME ASSEMBLY TRAY 9
1007539-__ REV
SER NO.
APPLICABLE DASH NO.

VIEW B–B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS .XXX ± .005 .XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN R.C. Taylor 4 SEPT 64
CHECKED A. Lindblom 10 Sept 64
APPROVED
APPROVED 12/4/64
APPROVED MIT W Kupfer
APPROVED MSC 12-4-64
DATE

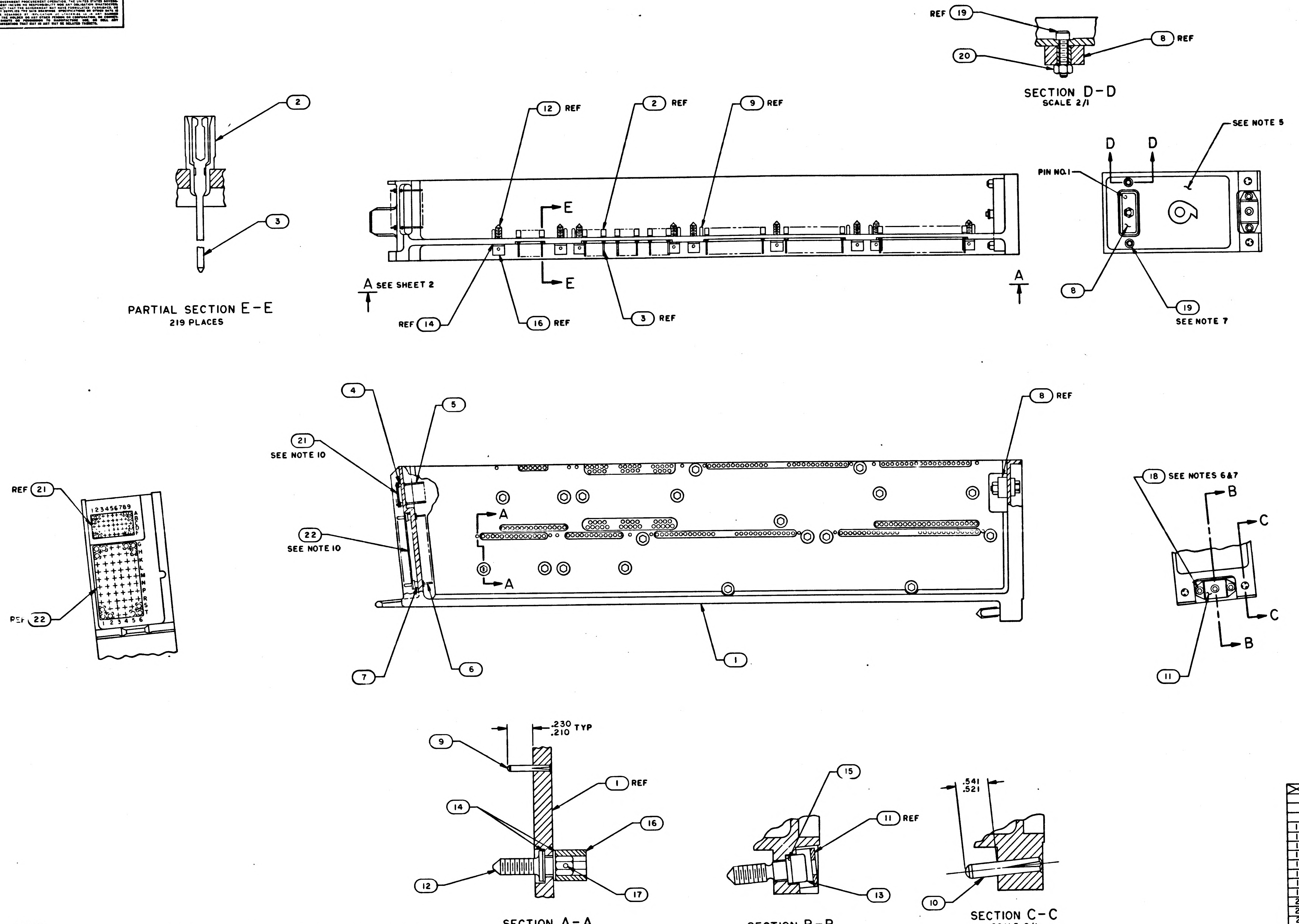
FRAME ASSEMBLY
TRAY 9

CODE IDENT NO. —
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 2 OF 2

1007539 B

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706				
C		REVISED PER TDRR 15157			23 … 64	



Ⓑ REPLACES WORD DWG REV A

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. BOND FIND NOS. 23, 24, 25 AND 26 TO FIND NO.1 PER ND 1002004 TYPE I AS NECESSARY
4. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
5. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
6. COAT THREADS OF FIND NO.18 DURING ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
7. MOUNTING TORQUE FOR FIND NOS. 18 & 19 TO FIND NO.1 TO BE 5.0/5.5 IN LB
8. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
9. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
10. BOND FIND NO. 21 TO FIND NO. 4 AND FIND NO. 22 TO FIND NO. 7 PER ND

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009569		WIRING DIAGRAM	REF
1	1008642		WIRE LIST AA	28
1				27
1	1008641		WIRING HARNESS D	26
1	1008640		WIRING HARNESS C	25
1	1008639		WIRING HARNESS B	24
1	1008638		WIRING HARNESS A	23
1	1008552		GASKET, CONNECTOR	22
1	1008553		GASKET, CONNECTOR	21
2	MS21045C04		NUT, SELF-LOCKING HEX	20
2	MS16995-11		SCREW, CAP, SOCKET HEAD	19
2	MS16995-10		SCREW, CAP, SOCKET HEAD	18
19	MS171433		PIN SPRING	17
19	1004207		DRIVE CYLINDER	16
1	1008099-2		WASHER	15
38	1004206		WASHER THRUST	14
1	1008098		SCREW, SOCKET HEAD	13
19	1008172		SCREW, JACK	12
1	1001317		RETAINER, JACK SCREW	11
2	1010620-5		PIN, GUIDE	10
16	1010620-4		PIN, GUIDE	9
1	1010821-1		CONNECTOR, RECEPTACLE	8
60	1010383-1		INSULATOR, WRAPOST-MALE	7
60	1010382-1		CONTACT, BLADE EDGE CONN	6
45	1006782-2		CONTACT, WRAPOST-MALE, MIN	5
45	1006775		INSULATOR, WRAPOST-MALE, MIN	4
219	1006781-2		CONTACT, WRAPOST-FEMALE, MIN	3
219	1006774		INSULATOR, WRAPOST-FEMALE, MIN	2
1	1008529		FRAME	1

LIST OF MATERIALS

1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL ———

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN R.C. Taylor
CHECKED A. Lindstrom
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

FRAME ASSEMBLY
TRAY 9

CODE IDENT NO. ——— SIZE E DRAWING NO. 1007539
SCALE 1/1 SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
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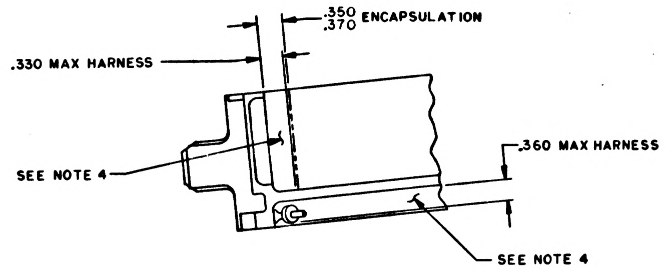
C		REVISED PER TDRR 15157			Dec '64	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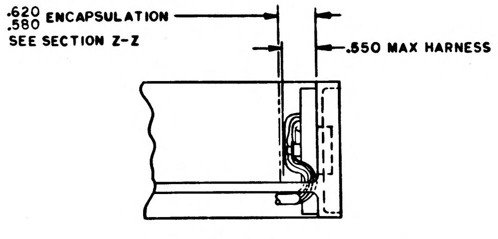
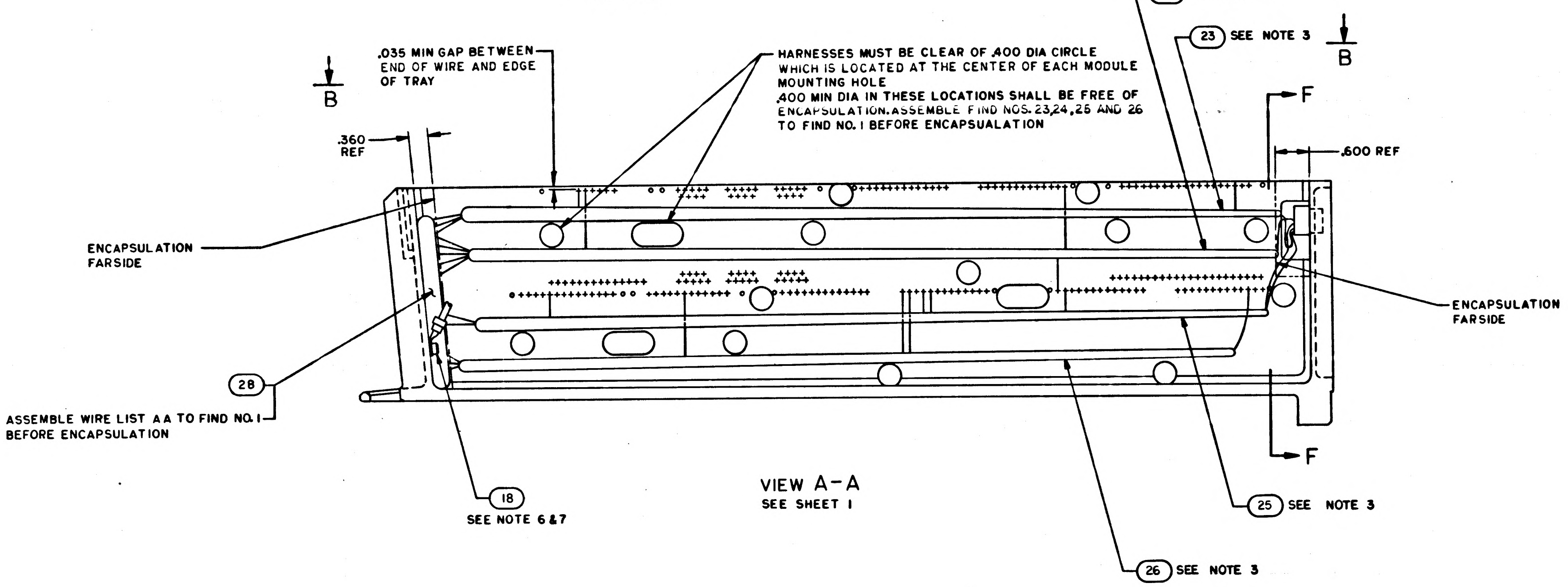
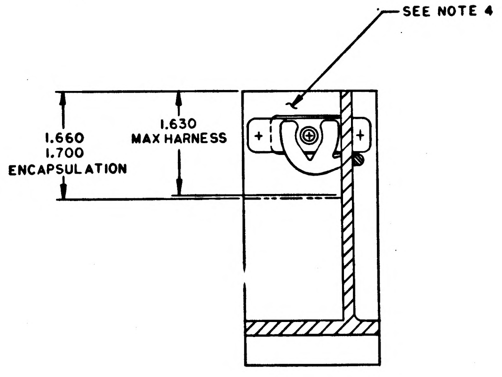
.370 ENCAPSULATION
.330 MAX HARNESS
SEE NOTE 4
.360 MAX HARNESS
SEE NOTE 4

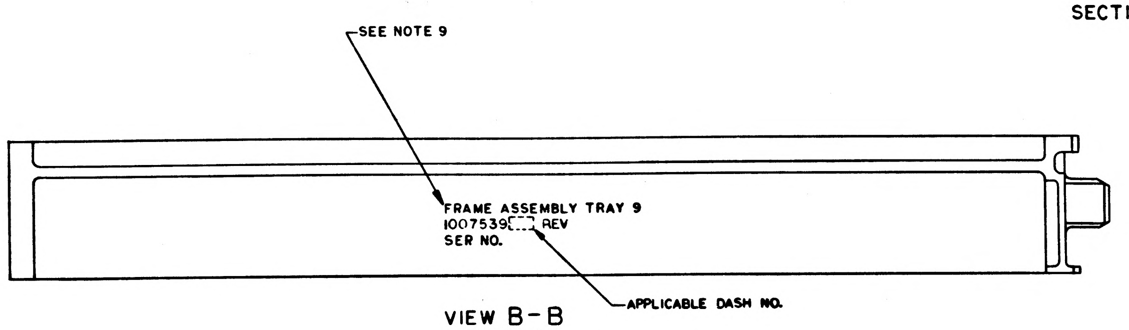

.620
.580 ENCAPSULATION
SEE SECTION Z-Z
.550 MAX HARNESS


24 SEE NOTE 3
23 SEE NOTE 3
B
B
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS. 23,24,25 AND 26 TO FIND NO. 1 BEFORE ENCAPSULATION
F
F
.360 REF
.600 REF
ENCAPSULATION FARSIDE
ENCAPSULATION FARSIDE
28
ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION
18
SEE NOTE 6 & 7
25 SEE NOTE 3
26 SEE NOTE 3

VIEW A-A
SEE SHEET 1


SEE NOTE 4
1.660
1.700
ENCAPSULATION
1.630
MAX HARNESS

SECTION F-F


SEE NOTE 9
FRAME ASSEMBLY TRAY 9
1007539 REV
SER NO.
APPLICABLE DASH NO.

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS XXX ± .005 XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R.C. Taylor
CHECKED A. Sin...
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC 12-8-64
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 9

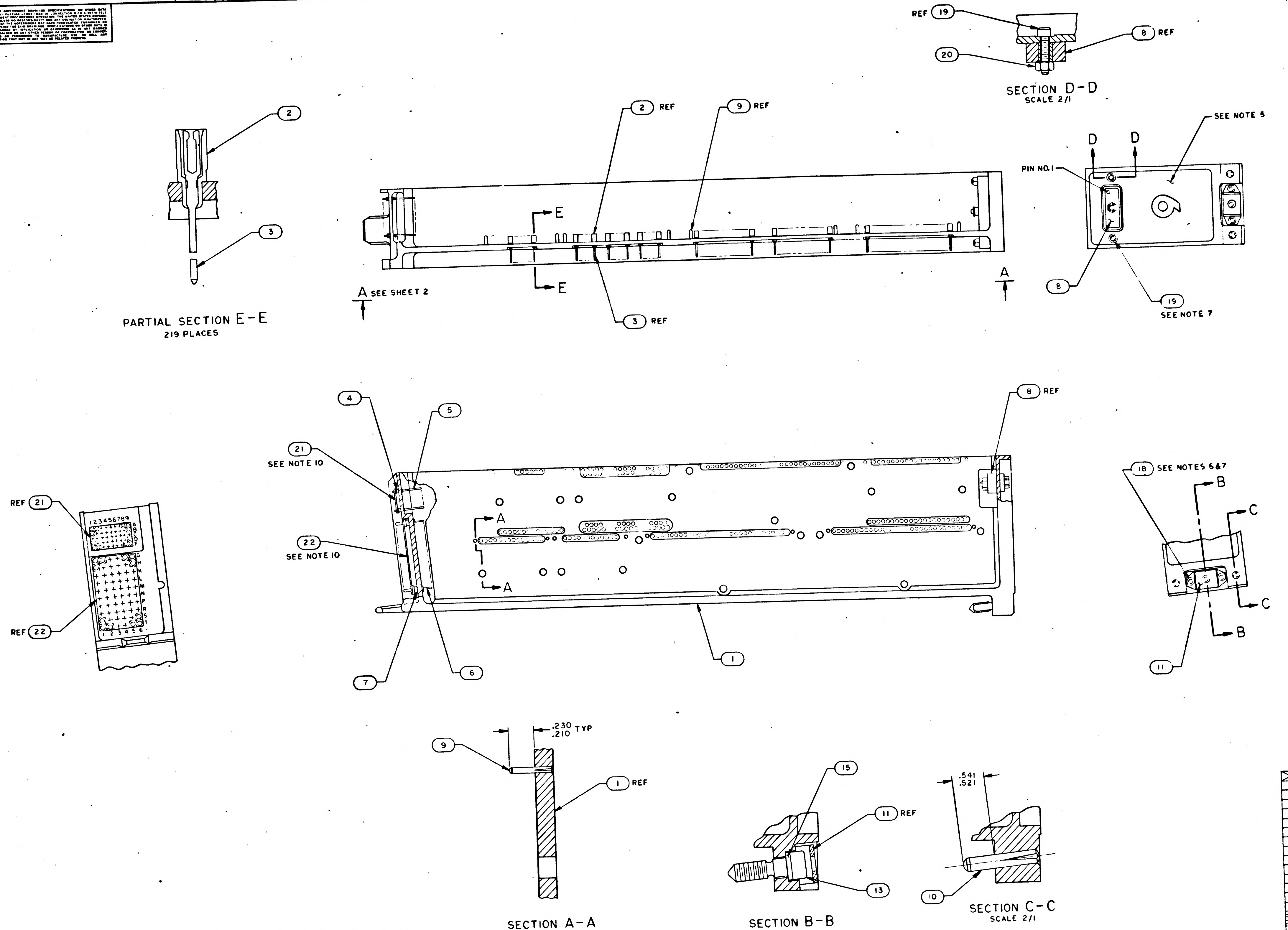
CODE IDENT NO. —
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 2 OF 2

1007539 C

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706				WK
C		REVISED PER TDRR 15157			29	WK
D		REVISED PER TDRR 15948	JJJ	CW	11 FEB 65	



SECTION D-D
SCALE 2/1

PARTIAL SECTION E-E
219 PLACES

SECTION A-A
SCALE 3/1

SECTION B-B
SCALE 2/1

SECTION C-C
SCALE 2/1

Ⓑ REPLACES WORD DWG REV A

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. BOND FIND NOS. 23, 24, 25 AND 26 TO FIND NO.1 PER ND 1002004 TYPE I AS NECESSARY
4. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
5. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
6. COAT THREADS OF FIND NO.18 DURING ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
7. MOUNTING TORQUE FOR FIND NOS. 18 & 19 TO FIND NO. 1 TO BE 5.0/5.5 IN LB
8. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
9. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
10. BOND FIND NO. 21 TO FIND NO. 4 AND FIND NO. 22 TO FIND NO. 7 PER ND

QTY REQD	PART OR IDENTIFYING NO	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO
☒	1009569		WIRING DIAGRAM	REF
1	1008642		WIRE LIST AA	28
1				27
1	1008641		WIRING HARNESS D	26
1	1008640		WIRING HARNESS C	25
1	1008639		WIRING HARNESS B	24
1	1008638		WIRING HARNESS A	23
1	1008552		GASKET, CONNECTOR	22
1	1008553		GASKET, CONNECTOR	21
2	MS21045C04		NUT, SELF-LOCKING HEX	20
2	MS16995-11		SCREW, CAP, SOCKET HEAD	19
2	MS16995-10		SCREW, CAP, SOCKET HEAD	18
~~19~~	~~MS171433~~		~~PIN SPRING~~	17
~~19~~	~~1004207~~		~~DRIVE CYLINDER~~	16
1	1006099-2		WASHER	15
~~38~~	~~1004206~~		~~WASHER THRUST~~	14
1	1008098		SCREW, SOCKET HEAD	13
~~19~~	~~1008173~~		~~SCREW, JACK~~	12
1	1001317		RETAINER, JACK SCREW	11
2	1010620-5		PIN, GUIDE	10
16	1010620-4		PIN, GUIDE	9
1	1010821-1		CONNECTOR, RECEPTACLE	8
60	1010383-1		INSULATOR, WRAPOST-MALE	7
60	1010382-1		CONTACT, BLADE EDGE CONN	6
45	1006782-2		CONTACT, WRAPOST-MALE, MIN	5
45	1006775		INSULATOR, WRAPOST-MALE, MIN	4
219	1006781-2		CONTACT, WRAPOST-FEMALE, MIN	3
219	1006774		INSULATOR, WRAPOST-FEMALE, MIN	2
1	1008529		FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± .02 ANGLES ± 1°
DO NOT SCALE THIS DRAWING

MATERIAL
—

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN R.C. Tyler 31 Aug 64
CHECKED A. Lindstrom 18 Sept 64
APPROVED
APPROVED 12/1/64
APPROVED MIT
APPROVED MSC 12-4-64
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

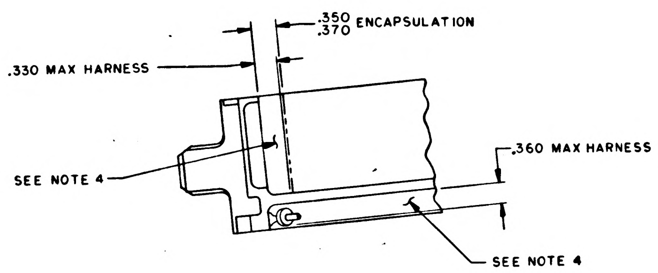
FRAME ASSEMBLY
TRAY 9

CODE IDENT NO —
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 1 OF 2

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14766				
C		REVISED PER TDRR 15157			Dec '64	
D		REVISED PER TDRR 15948	JJJ		FEB 65	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SEE NOTE 4
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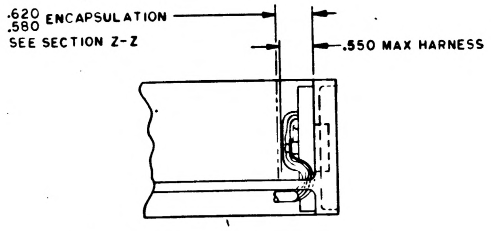
SEE NOTE 4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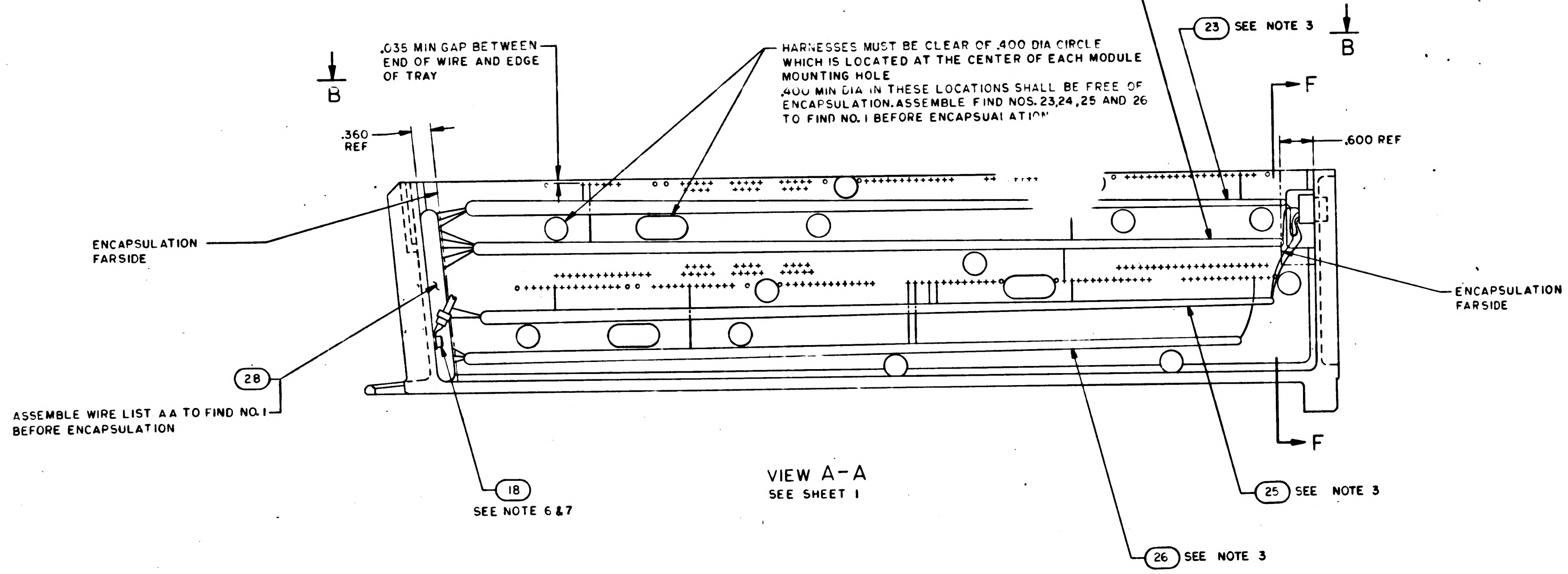
SEE SECTION Z-Z
.550 MAX HARNESS


24 SEE NOTE 3
23 SEE NOTE 3
B
B
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
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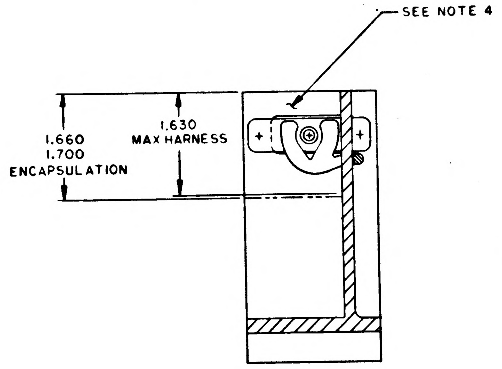
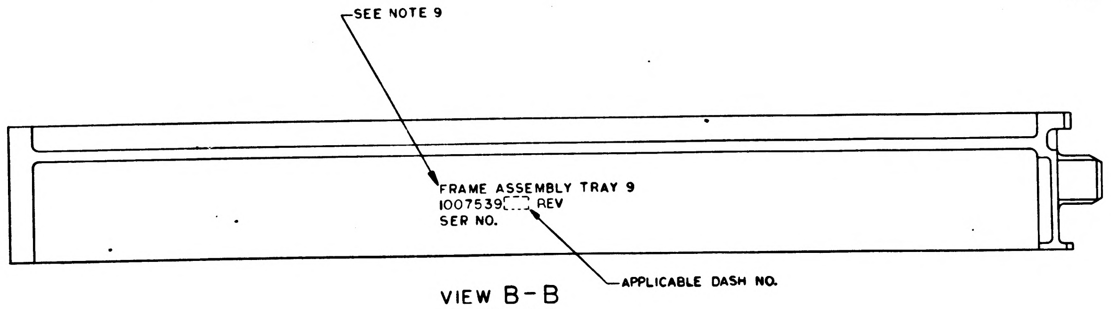
F
F
.600 REF
.360 REF
ENCAPSULATION FARSIDE
ENCAPSULATION FARSIDE
28
ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION
18
SEE NOTE 6 & 7
25 SEE NOTE 3
26 SEE NOTE 3

VIEW A-A
SEE SHEET 1


SEE NOTE 4
1.660
1.700
ENCAPSULATION
1.630
MAX HARNESS

SECTION F-F


SEE NOTE 9
FRAME ASSEMBLY TRAY 9
1007539[ ] REV
SER NO.
APPLICABLE DASH NO.

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS XXX ± .005 XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN R.C. Taylor 4 Sept 64
CHECKED 18 Sept 64
APPROVED
APPROVED 12/4/64
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 9

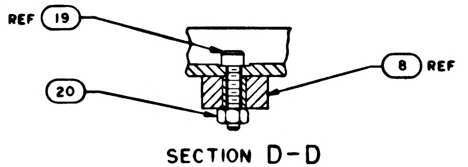
CODE IDENT NO —
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 2 OF 2

1007539 D

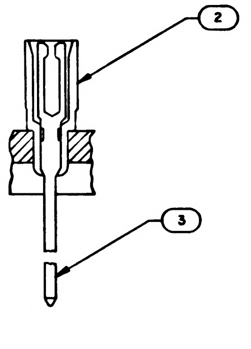
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

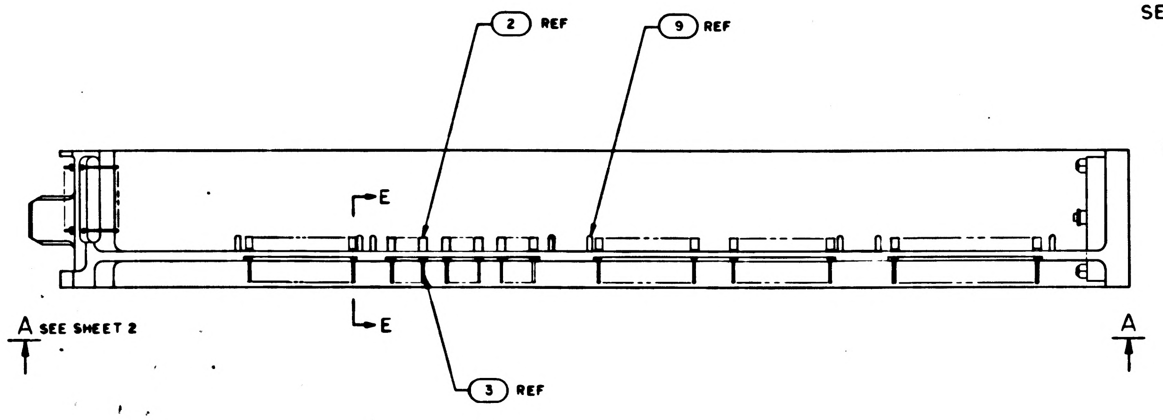
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
B		REPLACES WORD DWG REV A PER TDRR 14706					
C		REVISED PER TDRR 15157			29		
D		REVISED PER TDRR 15948	JJJ		FEB 65		
E		REVISED PER TDRR 16333	JM		15 Feb 65		

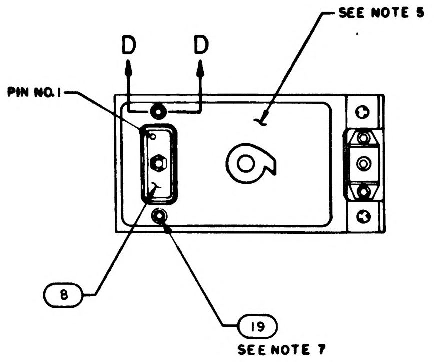


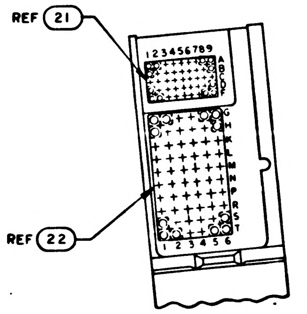
SECTION D-D
SCALE 2/1

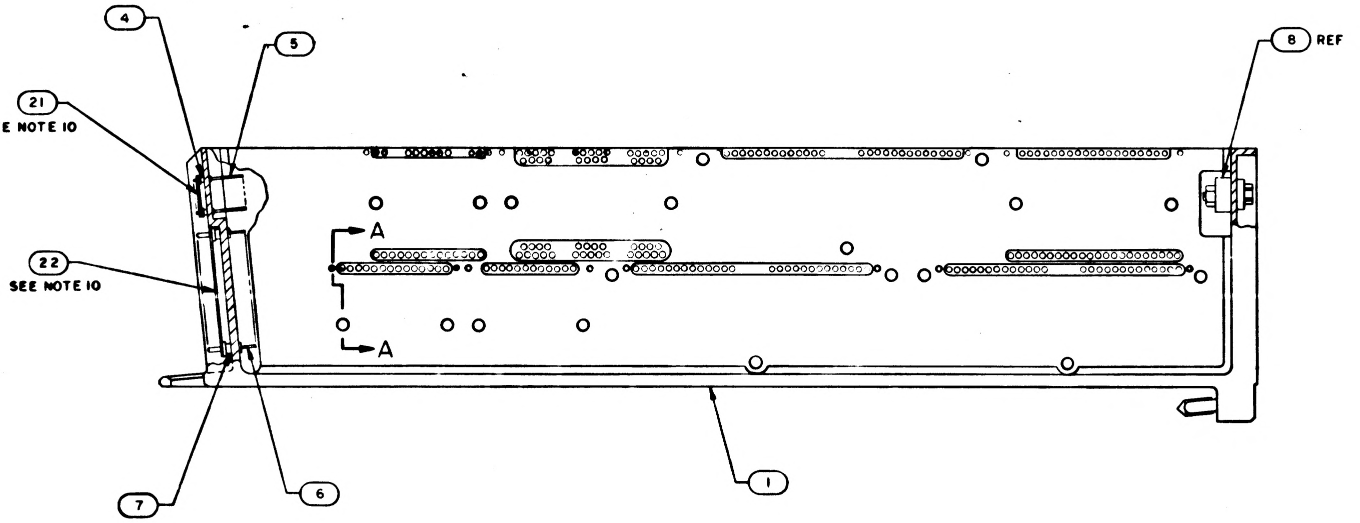


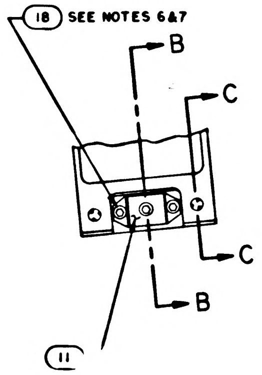
PARTIAL SECTION E-E
223 PLACES



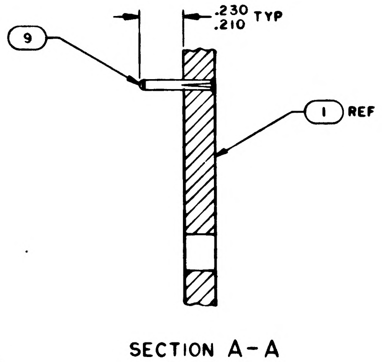




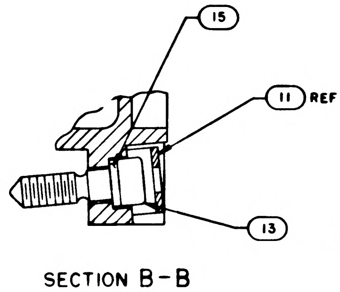




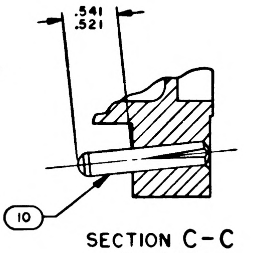
Ⓑ REPLACES WORD DWG REV A



SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. BOND FIND NOS. 23, 24, 25 AND 26 TO FIND NO.1 PER ND 1002004 TYPE I AS NECESSARY
4. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
5. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
6. COAT THREADS OF FIND NO.18 DURING ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
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10. BOND FIND NO. 21 TO FIND NO. 4 AND FIND NO. 22 TO FIND NO. 7 PER ND

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO
☒	1009569		WIRING DIAGRAM	REF
1	1008642		WIRE LIST AA	28
1				27
1	1008641		WIRING HARNESS D	26
1	1008640		WIRING HARNESS C	25
1	1008639		WIRING HARNESS B	24
1	1008638		WIRING HARNESS A	23
1	1008552		GASKET, CONNECTOR	22
1	1008553		GASKET, CONNECTOR	21
2	MS21045C04		NUT, SELF-LOCKING HEX	20
2	MS16995-11		SCREW, CAP, SOCKET HEAD	19
2	MS16995-10		SCREW, CAP, SOCKET HEAD	18
~~19~~	~~MS171433~~		~~PIN SPRING~~	17
~~19~~	~~1004207~~		~~DRIVE CYLINDER~~	16
1	1008099-2		WASHER	15
~~38~~	~~1004206~~		~~WASHER THRUST~~	14
1	1008098		SCREW, SOCKET HEAD	13
~~19~~	~~1008172~~		~~SCREW, JACK~~	12
1	1001317		RETAINER, JACK SCREW	11
2	1010620-5		PIN, GUIDE	10
16	1010620-4		PIN, GUIDE	9
1	1010821-1		CONNECTOR, RECEPTACLE	8
60	1010383-1		INSULATOR, WRAPOST-MALE	7
60	1010382-1		CONTACT, BLADE EDGE CONN	6
45	1006782-2		CONTACT, WRAPOST-MALE, MIN	5
45	1006775		INSULATOR, WRAPOST-MALE, MIN	4
223	1006781-2		CONTACT, WRAPOST-FEMALE, MIN	3
223	1006774		INSULATOR, WRAPOST-FEMALE, MIN	2
1	1008529		FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007579	

APPLICATION

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DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± .02 ANGLES ± 1°
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R C Taylor
CHECKED A. Lindstrom
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 9

CODE IDENT NO. —
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 1 OF 2

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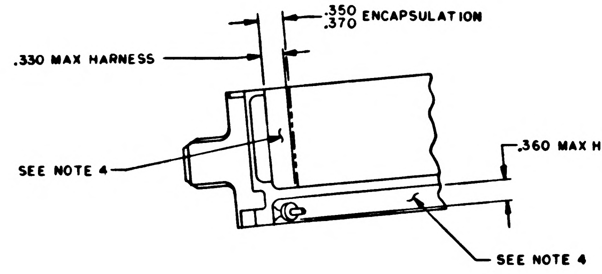
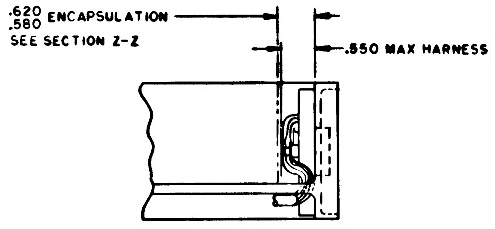
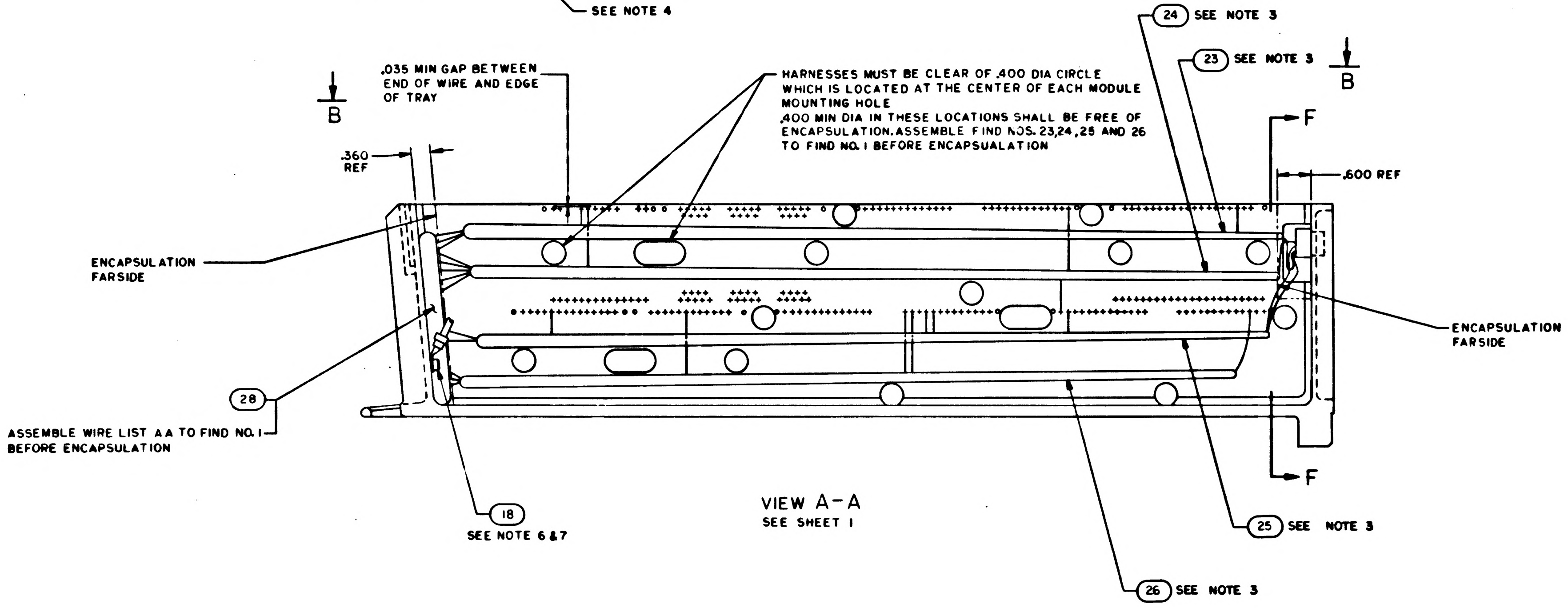
REVISIONS

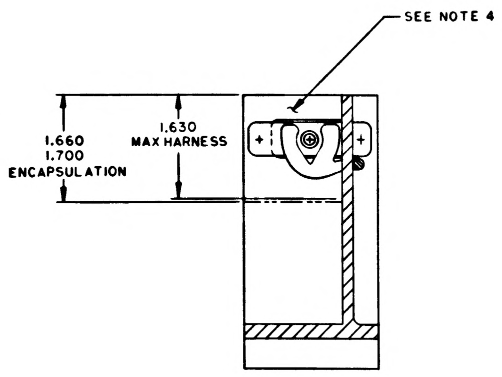
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706			[illegible]	
C		REVISED PER TDRR 15157			64	
D		REVISED PER TDRR 15948			FEB 65	
E		REVISED PER TDRR 16333	JN		FEB 65	


.350
.370 ENCAPSULATION
.330 MAX HARNESS
.360 MAX HARNESS
SEE NOTE 4
SEE NOTE 4

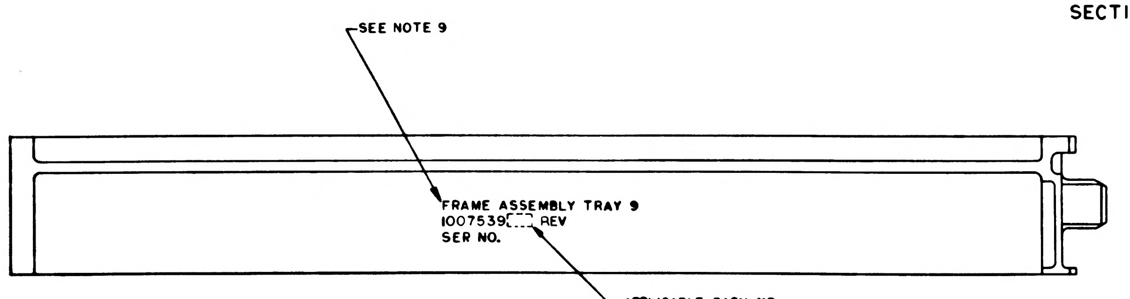

.620
.580 ENCAPSULATION
SEE SECTION Z-Z
.550 MAX HARNESS


B
B
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS. 23, 24, 25 AND 26 TO FIND NO. 1 BEFORE ENCAPSUALATION
24 SEE NOTE 3
23 SEE NOTE 3
F
F
.360 REF
.600 REF
ENCAPSULATION FARSIDE
ENCAPSULATION FARSIDE
28
ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION
18
SEE NOTE 6 & 7
25 SEE NOTE 3
26 SEE NOTE 3

VIEW A-A
SEE SHEET 1


SEE NOTE 4
1.660
1.700
ENCAPSULATION
1.630
MAX HARNESS

SECTION F-F


SEE NOTE 9
FRAME ASSEMBLY TRAY 9
1007539 REV
SER NO.
APPLICABLE DASH NO.

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS .XXX ± .005 .XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R.C. Taylor
CHECKED
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 9

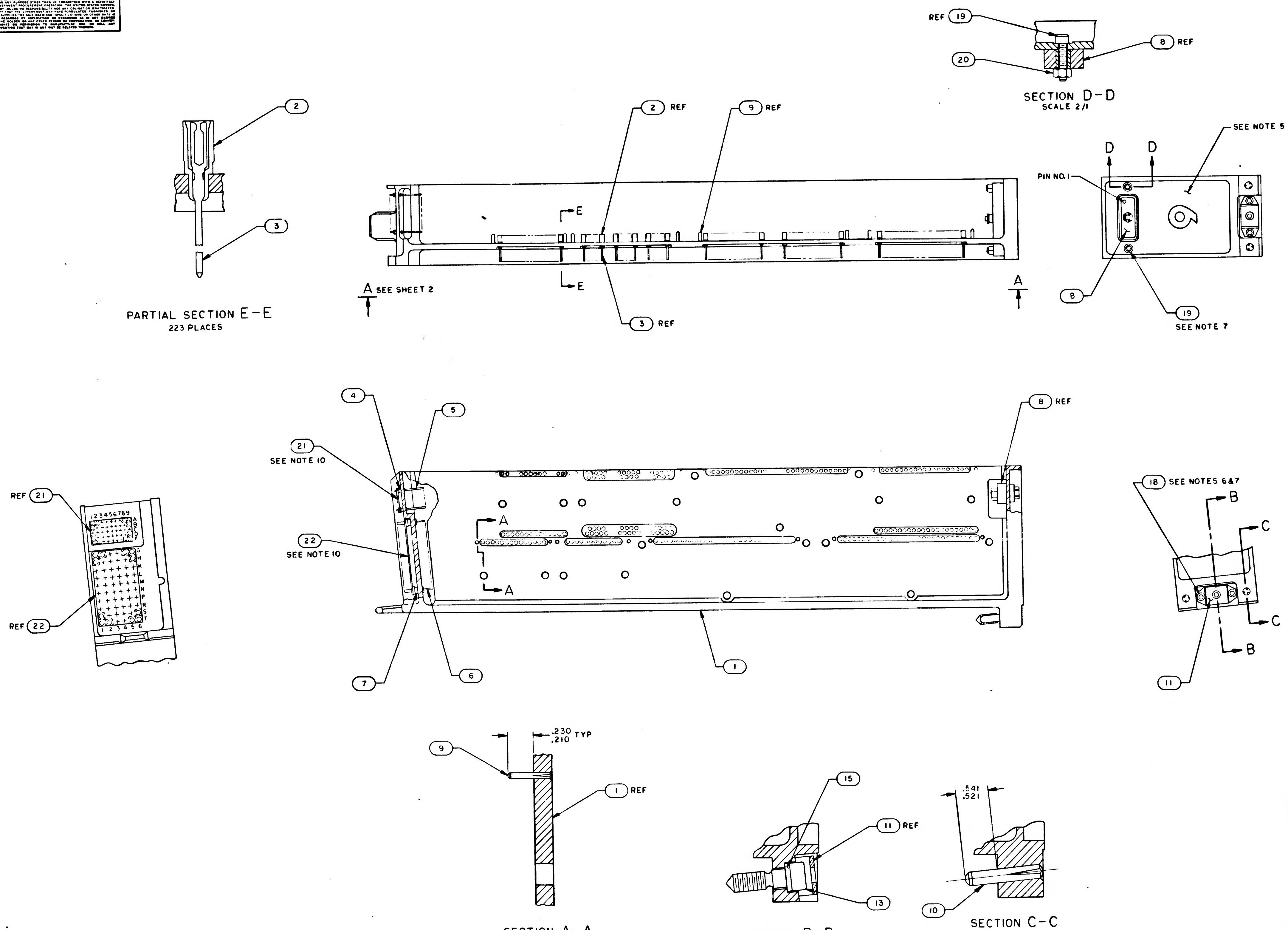
CODE IDENT NO. —
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 2 OF 2

1007539 E

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
B		REPLACES WORD DWG REV A PER TDRR 14706					
C		REVISED PER TDRR 15157			29 Jan 64		
D		REVISED PER TDRR 15948	JJJ		FEB 65		
E		REVISED PER TDRR 16333	JM		5 Feb 65		
F		REVISED PER TDRR 16830			3 MAR 65		



(B) REPLACES WORD DWG REV A

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. BOND FIND NOS. 23, 24, 25 AND 26 TO FIND NO.1 PER ND 1002004 TYPE I AS NECESSARY
4. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) FLUSH TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME
5. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
6. COAT THREADS OF FIND NO.18 DURING ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
7. MOUNTING TORQUE FOR FIND NOS.18 & 19 TO FIND NO.1 TO BE 5.0/5.5 IN LB
8. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
9. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
10. BOND FIND NO. 21 TO FIND NO. 4 AND FIND NO. 22 TO FIND NO. 7 PER ND

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009569		WIRING DIAGRAM	REF
1	1008642		WIRE LIST AA	28
1				27
1	1008641		WIRING HARNESS D	26
1	1008640		WIRING HARNESS C	25
1	1008639		WIRING HARNESS B	24
1	1008638		WIRING HARNESS A	23
1	1008552		GASKET, CONNECTOR	22
1	1008553		GASKET, CONNECTOR	21
2	MS21045C04		NUT, SELF-LOCKING HEX	20
2	MS16995-11		SCREW, CAP, SOCKET HEAD	19
2	MS16995-10		SCREW, CAP, SOCKET HEAD	18
~~19~~	~~MS171433~~		~~PIN SPRING~~	17
~~19~~	~~1004207~~		~~DRIVE CYLINDER~~	16
1	1008099-2		WASHER	15
~~38~~	~~1004206~~		~~WASHER THRUST~~	14
1	1008098		SCREW, SOCKET HEAD	13
~~19~~	~~1006172~~		~~SCREW, JACK~~	12
1	1001317		RETAINER, JACK SCREW	11
2	1010620-5		PIN, GUIDE	10
16	1010620-4		PIN, GUIDE	9
1	1010821-1		CONNECTOR, RECEPTACLE	8
60	1010383-1		INSULATOR, WRAPOST-MALE	7
60	1010382-1		CONTACT, BLADE EDGE CONN	6
45	1006782-2		CONTACT, WRAPOST-MALE, M	5
45	1006775		INSULATOR, WRAPOST-MALE MIN	4
223	1006781-2		CONTACT, WRAPOST-FEMALE N	3
223	1006774		INSULATOR, WRAPOST-FEMALE MIN	2
1	1008529		FRAME	1

011 LIST OF MATERIALS

1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± .02 ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R.C. Taylor 31 Aug 64
CHECKED A. Lindstrom 18 Sept 64
APPROVED
APPROVED 12/4/64
APPROVED MIT
APPROVED MSC 12-4-64
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

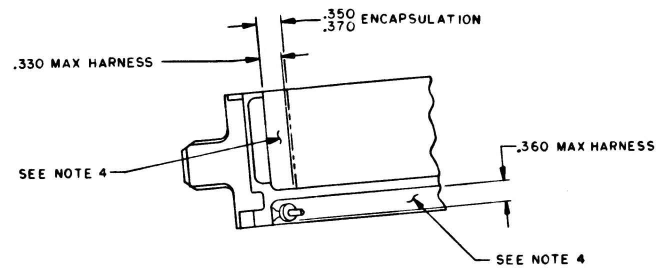
FRAME ASSEMBLY TRAY 9

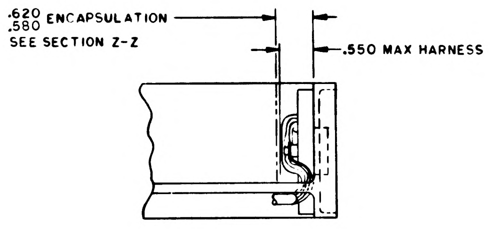
CODE IDENT NO —
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 1 OF 2

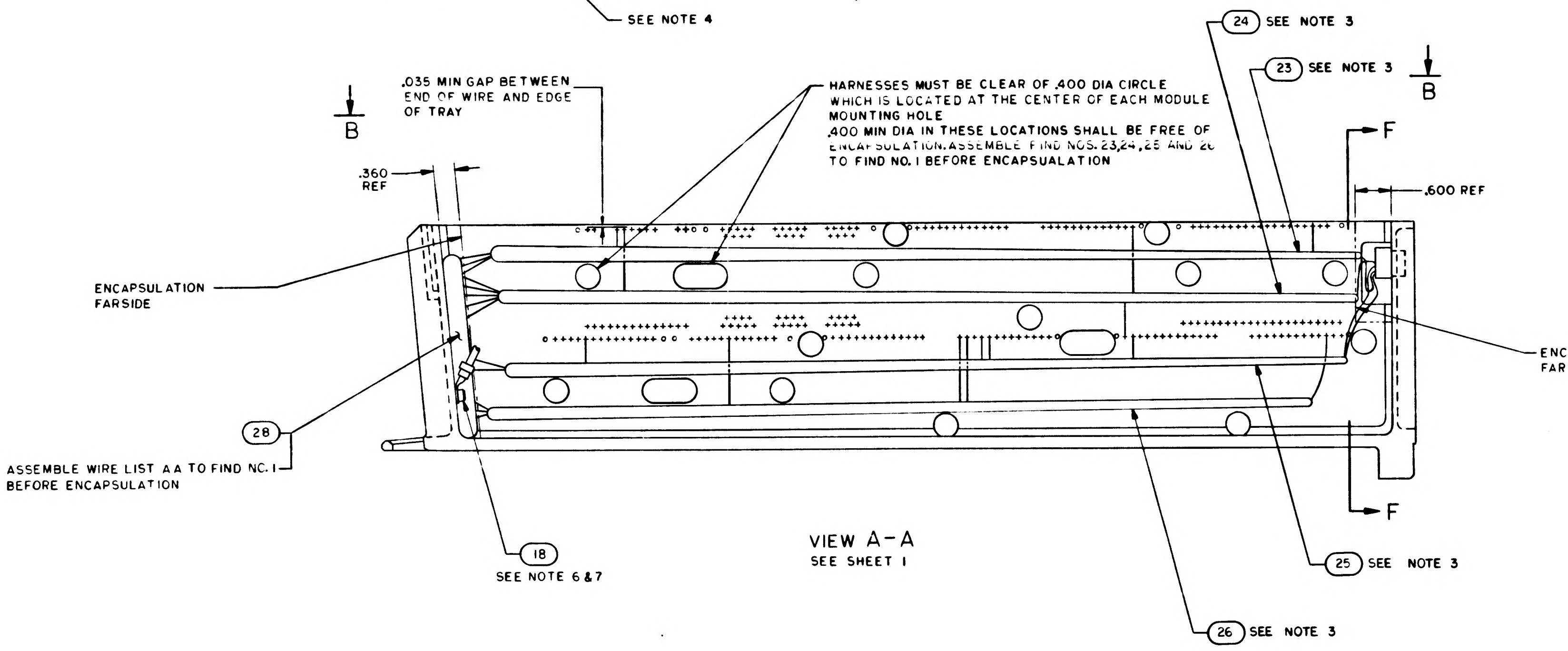
NOTICE WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR				
C		REVISED PER TDRR 15157				
D		REVISED PER TDRR 15948		JW	FEB 65	
E		REVISED PER TDRR 16333	JM		5 FEB 65	
F		REVISED PER TDRR 16830	WP	YM	3 MAR 65	


.350
.370 ENCAPSULATION
.330 MAX HARNESS
SEE NOTE 4
.360 MAX HARNESS
SEE NOTE 4


.620
.580 ENCAPSULATION
SEE SECTION Z-Z
.550 MAX HARNESS


B
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
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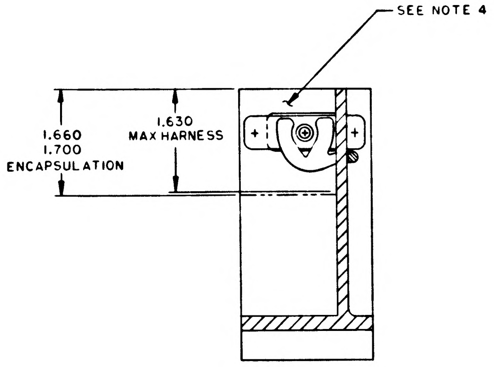
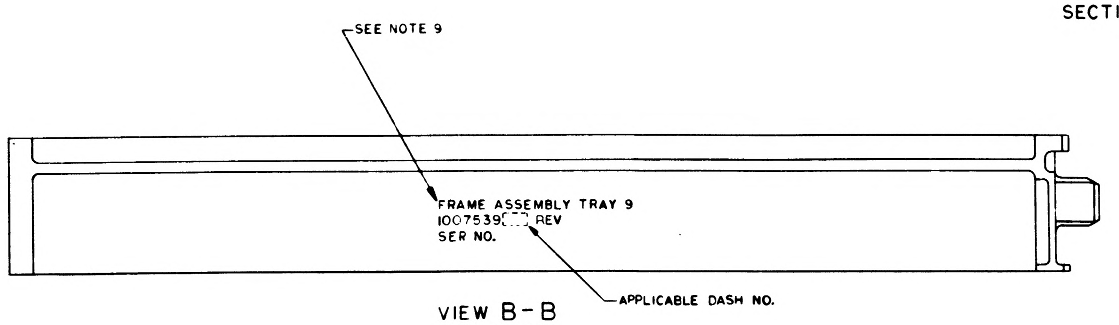
24 SEE NOTE 3
23 SEE NOTE 3
B
F
.600 REF
.360 REF
ENCAPSULATION FARSIDE
ENCAPSULATION FARSIDE
28
ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION
18
SEE NOTE 6 & 7
F
25 SEE NOTE 3
26 SEE NOTE 3

VIEW A-A
SEE SHEET 1


SEE NOTE 4
1.660
1.700
ENCAPSULATION
1.630
MAX HARNESS

SECTION F-F


SEE NOTE 9
FRAME ASSEMBLY TRAY 9
1007539[ ] REV
SER NO.
APPLICABLE DASH NO.

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS XXX ± .005 XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

MANNED SPACECRAFT CENTE
HOUSTON, TEXAS

DRAWN R.C. Taylor 9 SEPT 64
CHECKED 18 Sept 64
APPROVED
APPROVED 12/4/64
APPROVED MIT
APPROVED MSC
DATE

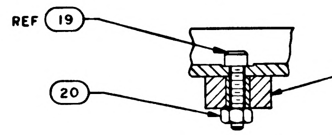
FRAME ASSEMBLY
TRAY 9

CODE IDENT NO —
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 2 OF 2

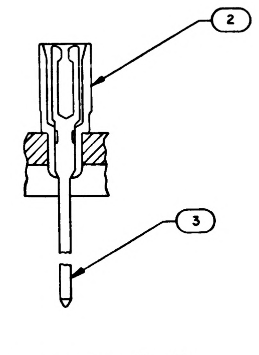
1007539 F

NOTICE WHEN GOVERNMENT DRAWINGS SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

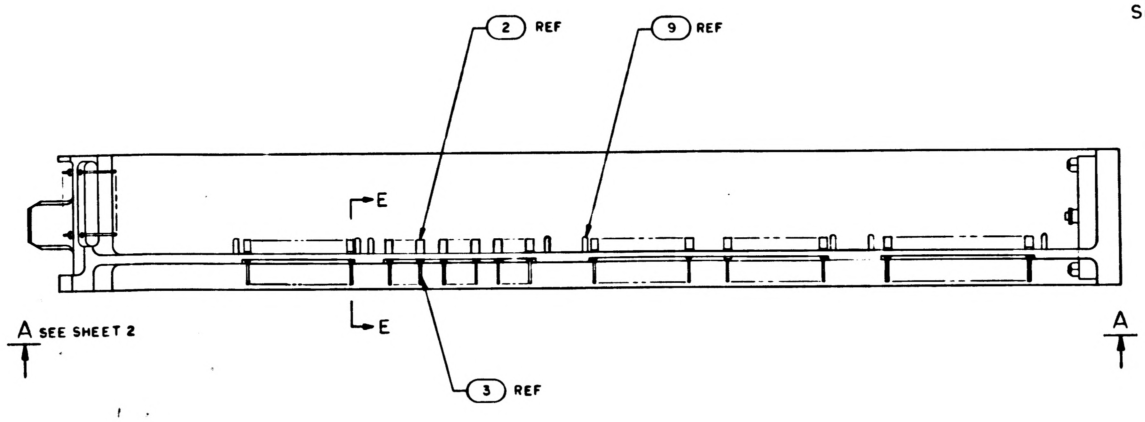
REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706				WK
C		REVISED PER TDRR 15157			29 Dec 64	WK
D		REVISED PER TDRR 15948	JJJ		FEB 65	
E		REVISED PER TDRR 16333	JM		15 FEB 65	
F		REVISED PER TDRR 16830	WP		3 MAR 65	
G		REVISED PER TDRR 17613			25 MAR 65	

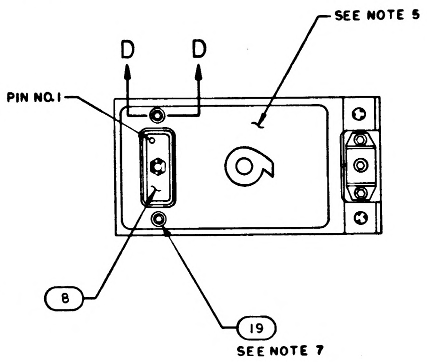


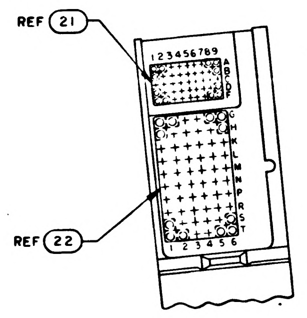
SECTION D-D
SCALE 2/1

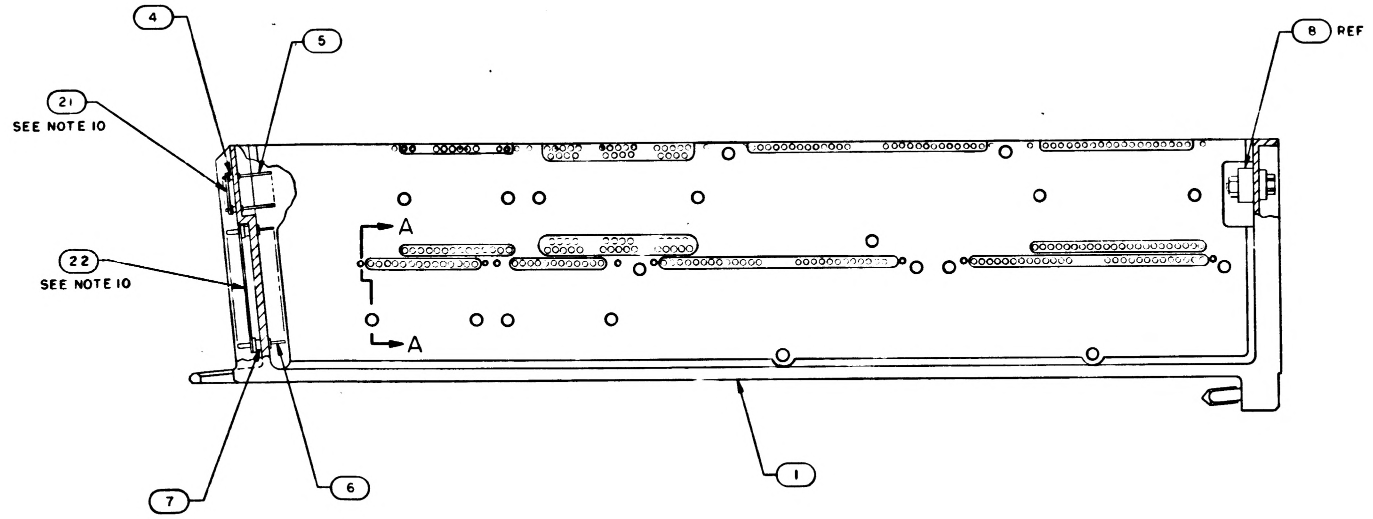


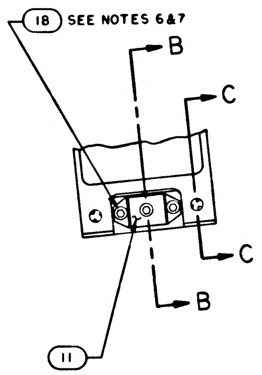
PARTIAL SECTION E-E
223 PLACES



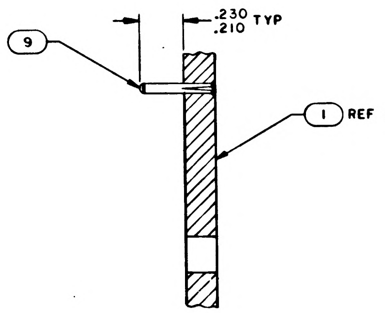




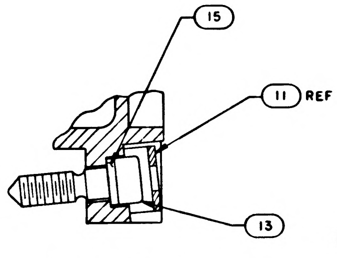




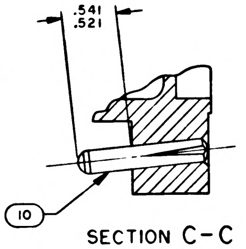
Ⓑ REPLACES WORD DWG REV A



SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. BOND FIND NOS. 23, 24, 25 AND 26 TO FIND NO.1 PER ND 1002004 TYPE I AS NECESSARY
4. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) .010 ABOVE TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME UNLESS OTHERWISE SPECIFIED
5. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
6. COAT THREADS OF FIND NO.18 DURING ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
7. MOUNTING TORQUE FOR FIND NOS. 18 & 19 TO FIND NO.1 TO BE 5.0/5.5 IN LB
8. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
9. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
10. BOND FIND NO.21 TO FIND NO.4 AND FIND NO.22 TO FIND NO.7 PER ND

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009569		WIRING DIAGRAM	REF
1	1008642		WIRE LIST AA	28
1				27
1	1008641		WIRING HARNESS D	26
1	1008640		WIRING HARNESS C	25
1	1008639		WIRING HARNESS B	24
1	1008638		WIRING HARNESS A	23
1	1008552		GASKET, CONNECTOR	22
1	1008553		GASKET, CONNECTOR	21
2	MS21045C04		NUT, SELF-LOCKING HEX	20
2	MS16995-11		SCREW, CAP, SOCKET HEAD	19
2	MS16995-10		SCREW, CAP, SOCKET HEAD	18
~~19~~	~~MS171433~~		~~PIN SPRING~~	17
~~19~~	~~1004207~~		~~DRIVE CYLINDER~~	16
1	1008099-2		WASHER	15
~~38~~	~~1004206~~		~~WASHER THRUST~~	14
1	1008098		SCREW, SOCKET HEAD	13
~~19~~	~~1008172~~		~~SCREW, JACK~~	12
1	1001317		RETAINER, JACK SCREW	11
2	1010620-5		PIN, GUIDE	10
16	1010620-4		PIN, GUIDE	9
1	1010821-1		CONNECTOR, RECEPTACLE	8
60	1010383-1		INSULATOR, WRAPOST-MALE	7
60	1010382-1		CONTACT, BLADE EDGE CONN	6
45	1006782-2		CONTACT, WRAPOST-MALE, MIN	5
45	1006775		INSULATOR, WRAPOST-MALE, MIN	4
223	1006781-2		CONTACT, WRAPOST-FEMALE, MIN	3
223	1006774		INSULATOR, WRAPOST-FEMALE, MIN	2
1	1008529		FRAME	1

011 LIST OF MATERIALS

1007539 G

1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± .02 ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN R C Tinkham 31 Aug 64
CHECKED A. Lindstrom 18 Sept 64
APPROVED
APPROVED 12/4/64
APPROVED MIT
APPROVED MSC
DATE

FRAME ASSEMBLY
TRAY 9

CODE IDENT NO. —
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 1 OF 2

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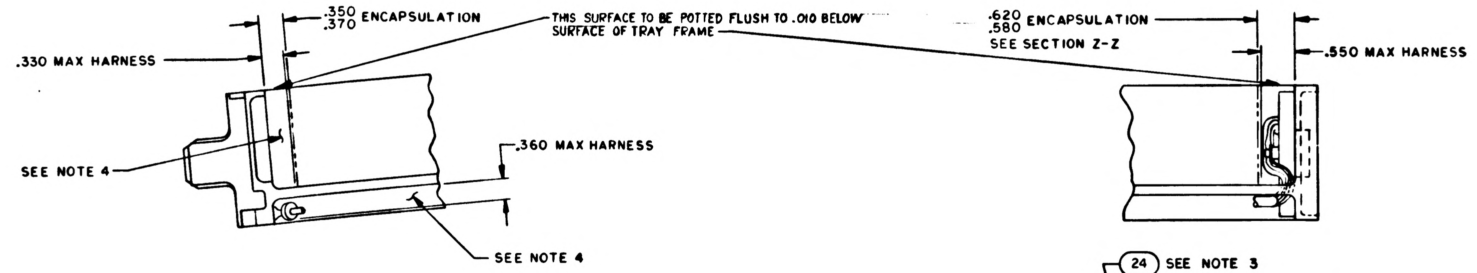
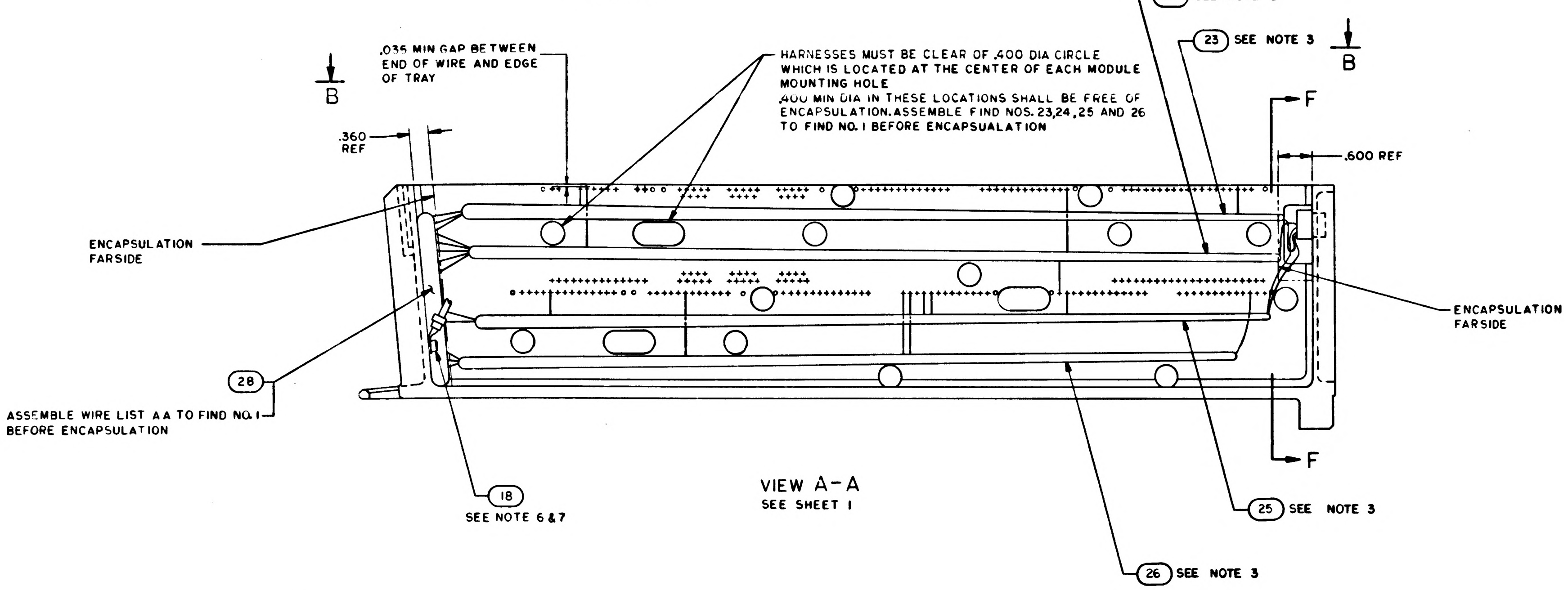
REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706				
C		REVISED PER TDRR 15157			'64	
D		REVISED PER TDRR 15948			FEB 65	
E		REVISED PER TDRR 16333				
F		REVISED PER TDRR 16830				
G		REVISED PER TDRR 17613				


.350
.370 ENCAPSULATION
.330 MAX HARNESS
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 4
.360 MAX HARNESS
SEE NOTE 4
.620
.580 ENCAPSULATION
SEE SECTION Z-Z
.550 MAX HARNESS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.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.360 REF
HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS. 23,24,25 AND 26 TO FIND NO. 1 BEFORE ENCAPSUALATION
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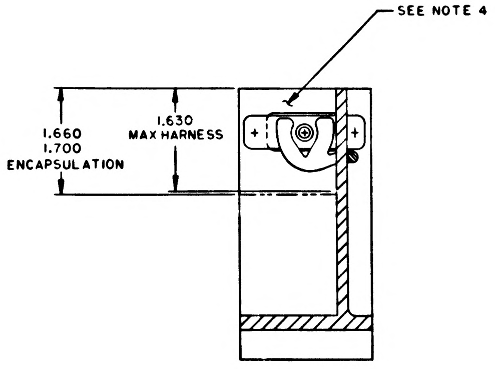
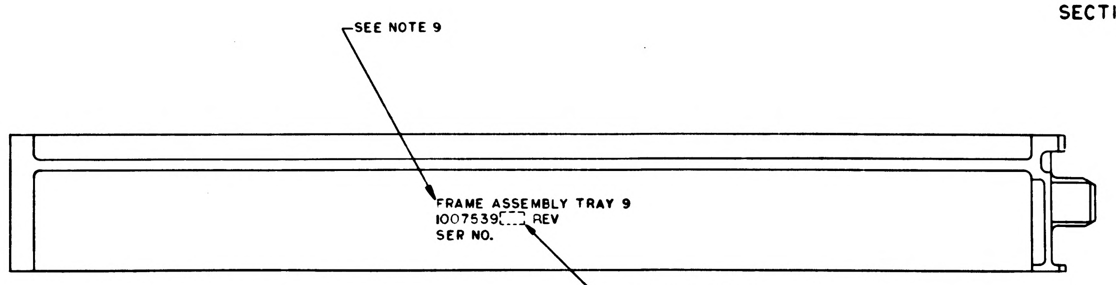
ENCAPSULATION FARSIDE
28
ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION
18
SEE NOTE 6 & 7
F
25 SEE NOTE 3
26 SEE NOTE 3

VIEW A-A
SEE SHEET 1


SEE NOTE 4
1.660
1.700
ENCAPSULATION
1.630
MAX HARNESS

SECTION F-F


SEE NOTE 9
FRAME ASSEMBLY TRAY 9
1007539-[ ] REV
SER NO.
APPLICABLE DASH NO.

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS .XXX ± .005 .XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

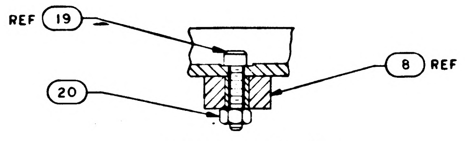
DRAWN	R.C. Taylor	4 SEPT 64
CHECKED		18 Sept 64
APPROVED		
APPROVED		
APPROVED MIT		
APPROVED MSC		
		DATE

FRAME ASSEMBLY
TRAY 9

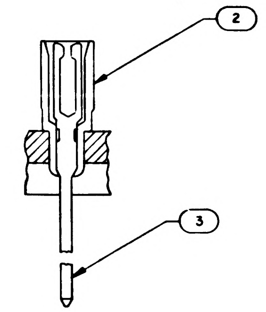
CODE IDENT NO.	SIZE	DRAWING NO.
—	E	1007539
SCALE 1/1		SHEET 2 OF 2

1007539 G

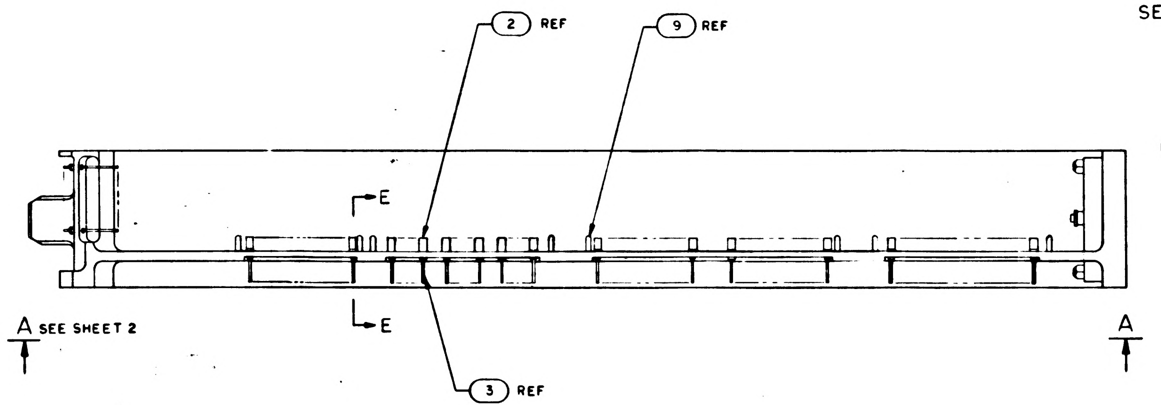
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

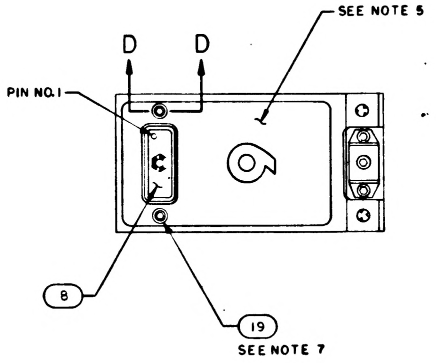


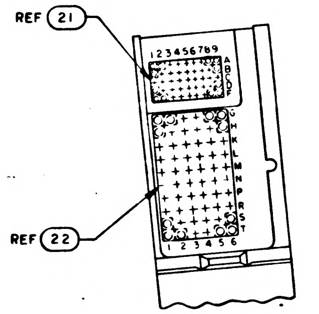
SECTION D-D
SCALE 2/1

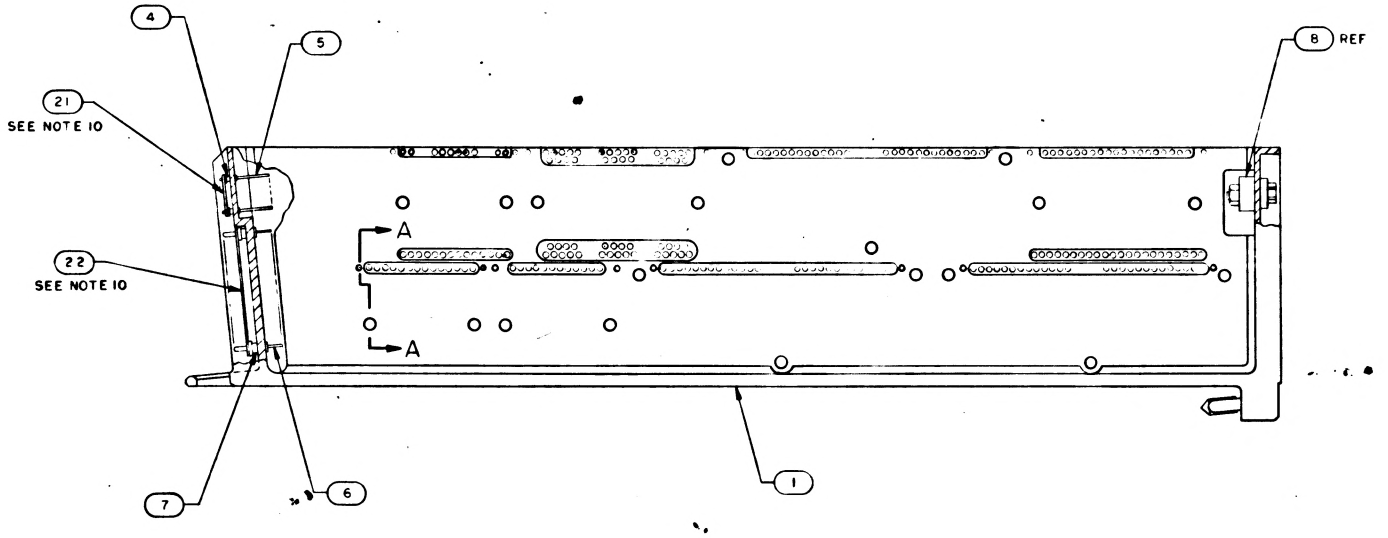


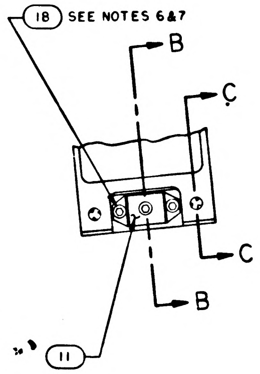
PARTIAL SECTION E-E
223 PLACES



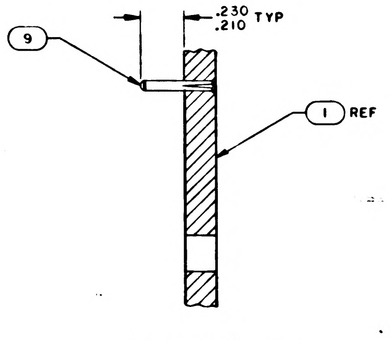




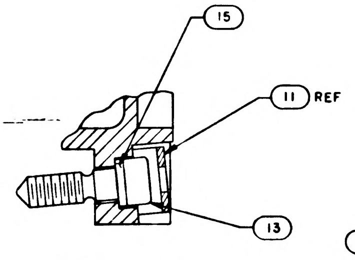




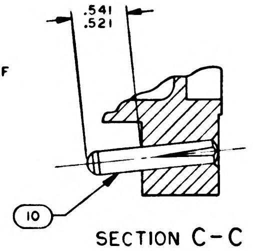
Ⓑ REPLACES WORD DWG REV A



SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2,3,4,5,6 AND 7 PER ND 1002136
3. BOND FIND NOS. 23, 24, 25 AND 26 TO FIND NO.1 PER ND 1002004 TYPE I AS NECESSARY
4. ENCAPSULATE PER ND 1002002 (BLACK POLYURETHANE FOAM) .010 ABOVE TO .010 BELOW PERIPHERAL SURFACES OF TRAY FRAME UNLESS OTHERWISE SPECIFIED
5. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
6. COAT THREADS OF FIND NO.18 DURING ASSEMBLY TO FIND NO.1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
7. MOUNTING TORQUE FOR FIND NOS. 18 & 19 TO FIND NO.1 TO BE 5.0/5.5 IN LB
8. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT
9. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
10. BOND FIND NO. 21 TO FIND NO. 4 AND FIND NO. 22 TO FIND NO. 7 PER ND

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
B		REPLACES WORD DWG REV A PER TDRR 14106					WK
C		REVISED PER TDRR 15157					WK
D		REVISED PER TDRR 15948	JJJ		11 FEB 65		
E		REVISED PER TDRR 16333	JM		15 FEB 65		
F		REVISED PER TDRR 16830	JWP		3 MAR 65		
G		REVISED PER TDRR 17613			25 MAR 65		
H		REVISED PER TDRR 18690		EF	4 NOV 65		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO
☒	1009569		WIRING DIAGRAM	REF
1	1008642		WIRE LIST AA	28
1				27
1	1008641		WIRING HARNESS D	26
1	1008640		WIRING HARNESS C	25
1	1008639		WIRING HARNESS B	24
1	1008638		WIRING HARNESS A	23
1	1008552		GASKET, CONNECTOR	22
1	1008553		GASKET, CONNECTOR	21
2	MS21045C04		NUT, SELF-LOCKING HEX	20
2	MS16995-11		SCREW, CAP, SOCKET HEAD	19
2	MS16995-10		SCREW, CAP, SOCKET HEAD	18
~~19~~	~~MS171433~~		~~PIN SPRING~~	17
~~19~~	~~1004207~~		~~DRIVE CYLINDER~~	16
1	1008099-2		WASHER	15
~~38~~	~~1004206~~		~~WASHER THRUST~~	14
1	1008098		SCREW, SOCKET HEAD	13
~~19~~	~~1008172~~		~~SCREW, JACK~~	12
1	1001317		RETAINER, JACK SCREW	11
2	1010620-5		PIN, GUIDE	10
16	MS16556-604		PIN, GUIDE	9
1	1010821-1		CONNECTOR, RECEPTACLE	8
60	1010383-1		INSULATOR, WRAPOST-MALE	7
60	1010382-1		CONTACT, BLADE EDGE CONN	6
45	1006782-2		CONTACT, WRAPOST-MALE, MIN	5
45	1006775		INSULATOR, WRAPOST-MALE, MIN	4
223	1006781-2		CONTACT, WRAPOST-FEMALE, MIN	3
223	1006774		INSULATOR, WRAPOST-FEMALE, MIN	2
1	1008529		FRAME	1
011	LIST OF MATERIALS			

1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± .02 ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN R. C. Taylor 31 Aug 64
CHECKED A. Lindstrom 18 Sept 64
APPROVED
APPROVED 12/4/64
APPROVED MIT
APPROVED MSC
DATE

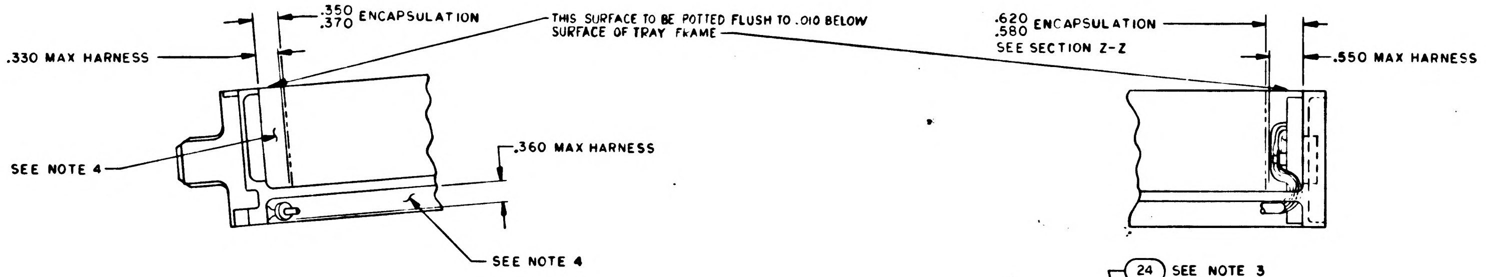
FRAME ASSEMBLY
TRAY 9

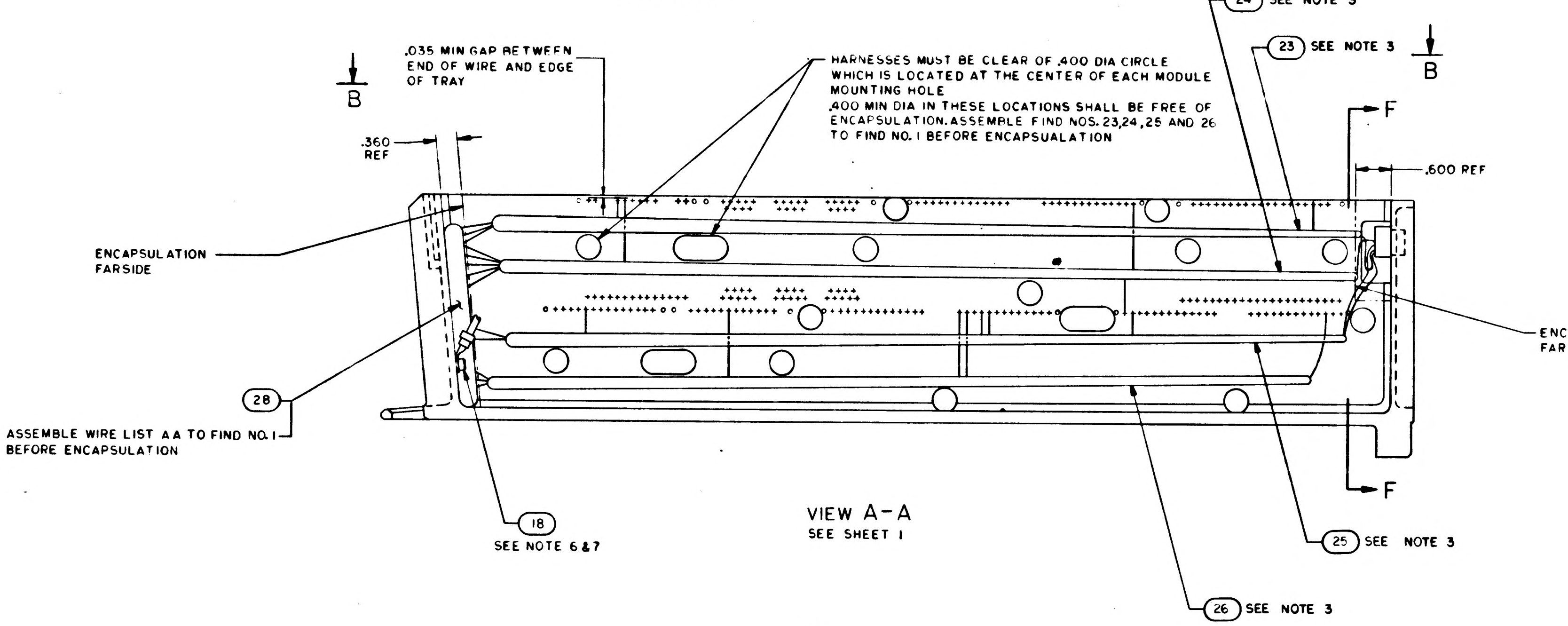
CODE IDENT NO. —
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 1 OF 2

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

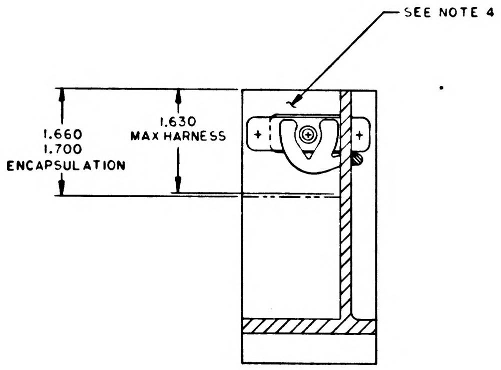
REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR				
C		REVISED PER TDRR 15157				
D		REVISED PER TDRR 15948	JJJ		11 FEB 66	
E		REVISED PER TDRR 16333	JN		15 FEB 65	
F		REVISED PER TDRR 16830	WP	Y.M.	3 MAR 65	
G		REVISED PER TDRR 17613				
H		REVISED PER TDRR 18690	WS	EF	4 MAY 65	

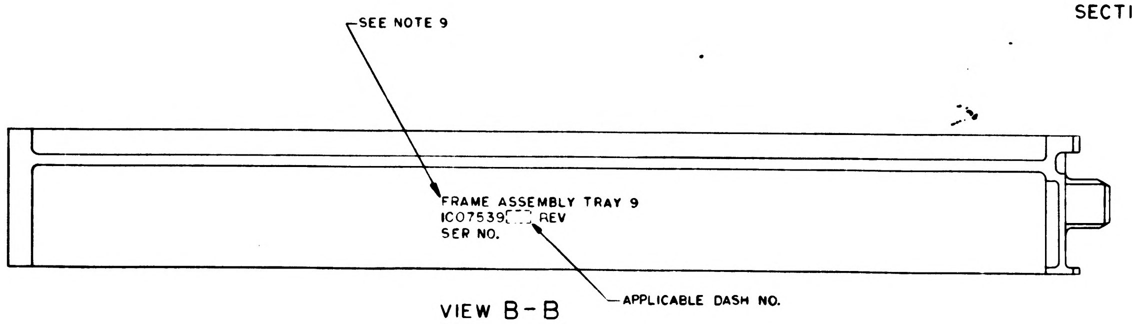

.350
.370 ENCAPSULATION
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.330 MAX HARNESS
SEE NOTE 4
.360 MAX HARNESS
SEE NOTE 4
.620
.580 ENCAPSULATION
SEE SECTION Z-Z
.550 MAX HARNESS


24 SEE NOTE 3
23 SEE NOTE 3
B
B
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS. 23,24,25 AND 26 TO FIND NO. 1 BEFORE ENCAPSUALATION
F
F
.360 REF
.600 REF
ENCAPSULATION FARSIDE
ENCAPSULATION FARSIDE
28
ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION
18
SEE NOTE 6 & 7
25 SEE NOTE 3
26 SEE NOTE 3

VIEW A-A
SEE SHEET 1


SEE NOTE 4
1.660
1.700
ENCAPSULATION
1.630
MAX HARNESS

SECTION F-F


SEE NOTE 9
FRAME ASSEMBLY TRAY 9
1007539 REV
SER NO.
APPLICABLE DASH NO.

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS XXX ± .005 XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

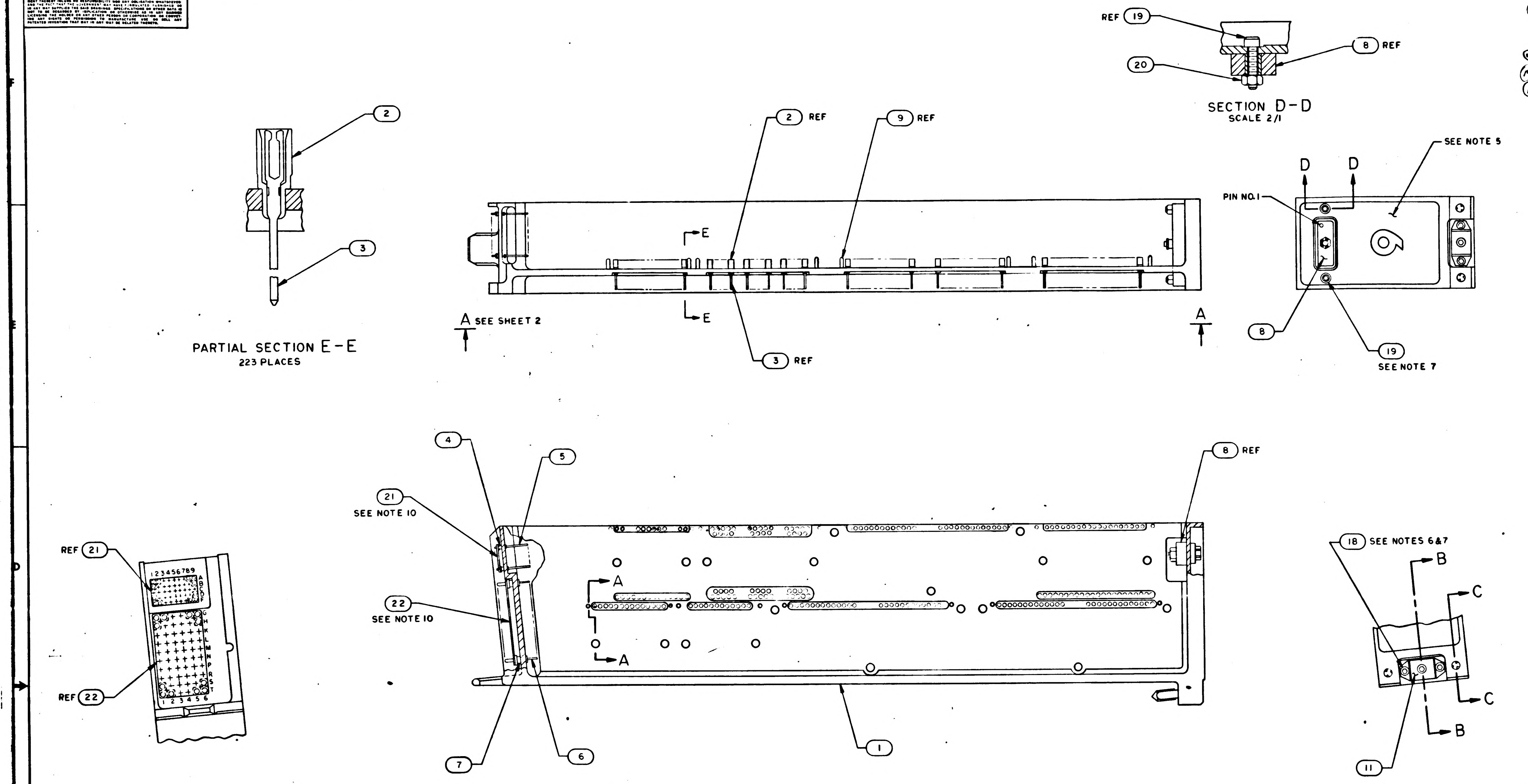
DRAWN R.C. Taylor 4 SEPT 64
CHECKED A. Engelshome 18 Sept 64
APPROVED
APPROVED D. A. Test 1/4/64
APPROVED MIT
APPROVED MSC
DATE

FRAME ASSEMBLY
TRAY 9

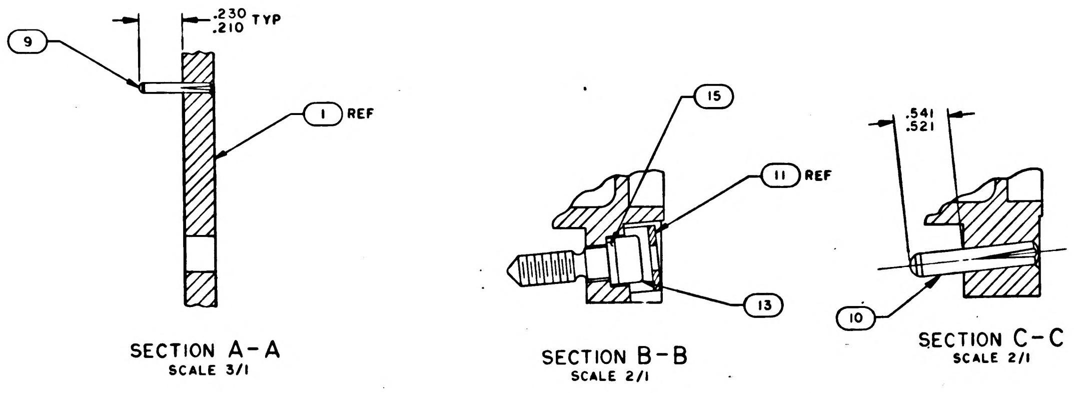
CODE IDENT NO —
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 2 OF 2

NOTICE WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706				WK
C		REVISED PER TDRR 15157			29	WK
D		REVISED PER TDRR 15948	JJJ		11 FEB 65	
E		REVISED PER TDRR 16333	JM		15 FEB 65	
F		REVISED PER TDRR 16830	JWP	Y.M.	3 MAR 65	
G		REVISED PER TDRR 17613			25 MAR 65	
H		REVISED PER TDRR 18690		EF	4 MAY 65	
J		REVISED PER TDRR 18691	JJJ	EF	7 MAY 65	



B REPLACES WORD DWG REV A



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4, 5, 6 AND 7 PER ND 1002136
3. BOND FIND NOS. 23, 24, 25 AND 26 TO FIND NO. 1 PER ND 1002004 TYPE I, AS NECESSARY
4. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A OR B USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
5. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
6. COAT THREADS OF FIND NO. 18 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
7. MOUNTING TORQUE FOR FIND NOS. 18 AND 19 TO FIND NO. 1 TO BE 5.0/5.5 IN. LB
8. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT.
9. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
10. BOND FIND NO. 21 TO FIND NO. 4 AND FIND NO. 22 TO FIND NO. 7 PER ND
11. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009569		WIRING DIAGRAM	REF
1	1008642		WIRE LIST AA	28
1				27
1	1008641		WIRING HARNESS D	26
1	1008640		WIRING HARNESS C	25
1	1008639		WIRING HARNESS B	24
1	1008638		WIRING HARNESS A	23
1	1008552		GASKET, CONNECTOR	22
1	1008553		GASKET, CONNECTOR	21
2	MS21045C04		NUT, SELF-LOCKING HEX	20
2	MS16995-11		SCREW, CAP, SOCKET HEAD	19
2	MS16995-10		SCREW, CAP, SOCKET HEAD	18
~~19~~	~~MS171433~~		~~PIN SPRING~~	17
~~19~~	~~1004207~~		~~DRIVE CYLINDER~~	16
1	1008099-2		WASHER	15
~~38~~	~~1004206~~		~~WASHER THRUST~~	14
1	1008098		SCREW, SOCKET HEAD	13
~~19~~	~~1008172~~		~~SCREW, JACK~~	12
1	1001317		RETAINER, JACK SCREW	11
2	1010620-5		PIN, GUIDE	10
16	MS16556-604		PIN, GUIDE	9
1	1010821-1		CONNECTOR, RECEPTACLE	8
60	1010383-1		INSULATOR, WRAPOST-MALE	7
60	1010382-1		CONTACT, BLADE EDGE CONN	6
45	1006782-2		CONTACT, WRAPOST-MALE, MIN	5
45	1006775		INSULATOR, WRAPOST-MALE, MIN	4
223	1006781-2		CONTACT, WRAPOST-FEMALE, MIN	3
223	1006774		INSULATOR, WRAPOST-FEMALE, MIN	2
1	1008529		FRAME	1

011 LIST OF MATERIALS

1007539 J

1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ±.02 ±1°
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE. MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN A.C. Taylor 31 Aug 64
CHECKED A. Lindstrom 18 Sep 64
APPROVED
APPROVED 12/4/64
APPROVED MIT
APPROVED MSC 12-4-64
DATE

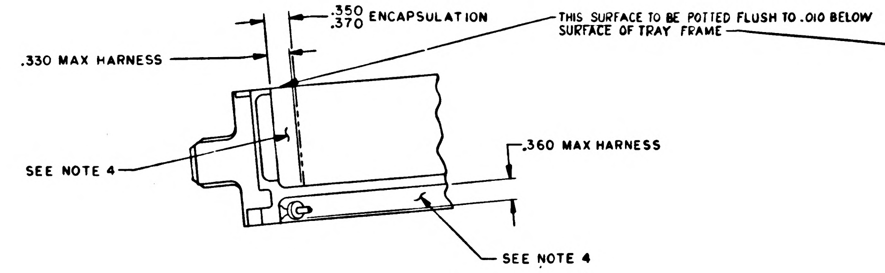
FRAME ASSEMBLY
TRAY 9

CODE IDENT NO 80230
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 1 OF 2

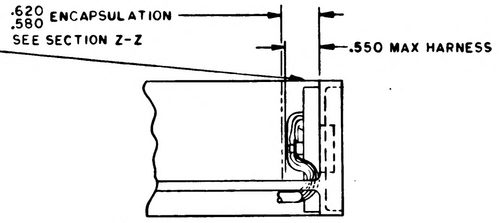
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

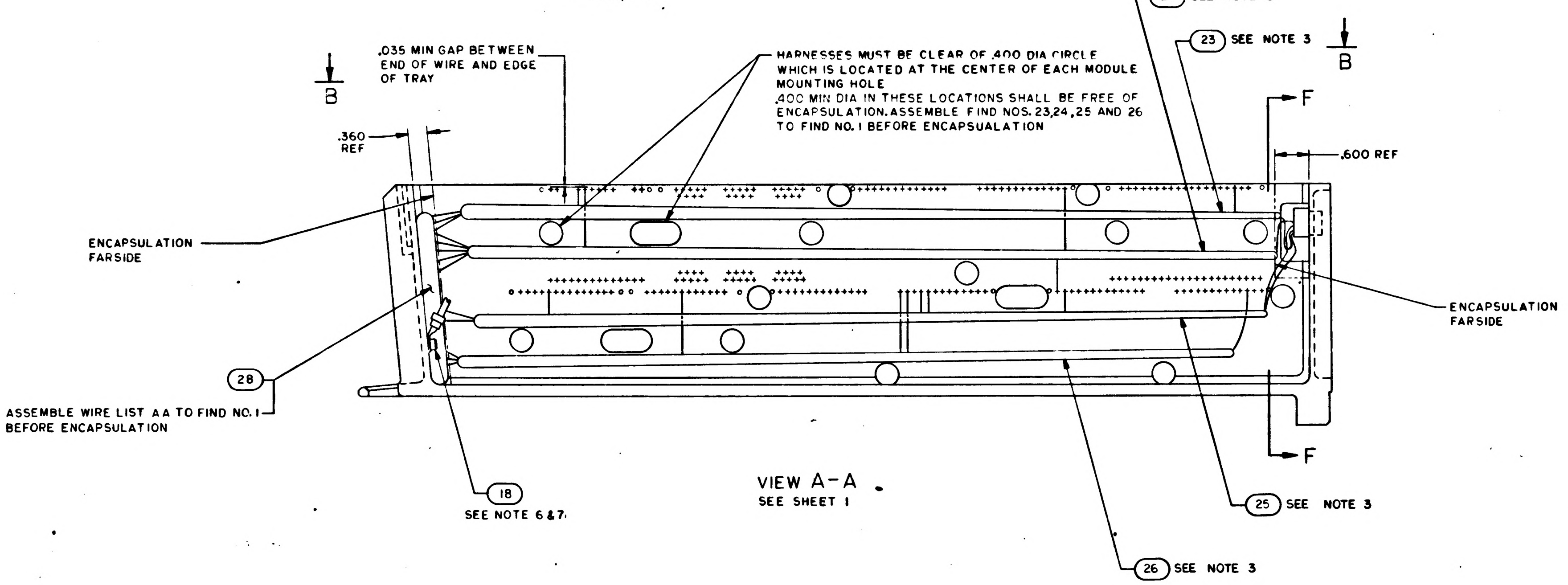
REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
B		REPLACES WORD DWG REV A PER TDRR 14766			3/6/1		WK
C		REVISED PER TDRR 15157			2 Jan '64		WK
D		REVISED PER TDRR 15948	JJ		11 FEB 65		
E		REVISED PER TDRR 16333	JN		15 FEB 65		
F		REVISED PER TDRR 16830	JWP	Y.M.	3 MAR 65		
G		REVISED PER TDRR 17613	JK		25 MAR 65		
H		REVISED PER TDRR 18690	W.S.	EF	4 MAY 65		
J		REVISED PER TDRR 18691	JJJ	EF	7 MAY 65		


.350
.370 ENCAPSULATION
.330 MAX HARNESS
SEE NOTE 4
.360 MAX HARNESS
SEE NOTE 4

THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME


.620
.580 ENCAPSULATION
SEE SECTION Z-Z
.550 MAX HARNESS

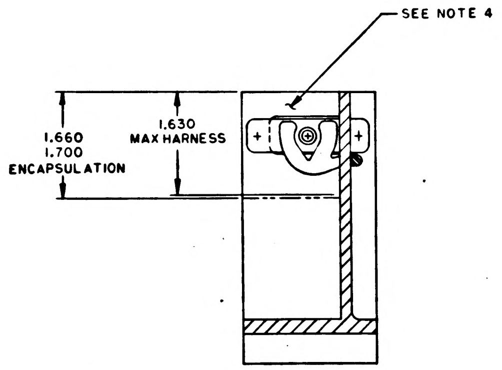

24 SEE NOTE 3
23 SEE NOTE 3
B
B
F
F
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.360 REF
.600 REF
ENCAPSULATION FARSIDE
ENCAPSULATION FARSIDE
28
18
SEE NOTE 6 & 7
25 SEE NOTE 3
26 SEE NOTE 3

HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE

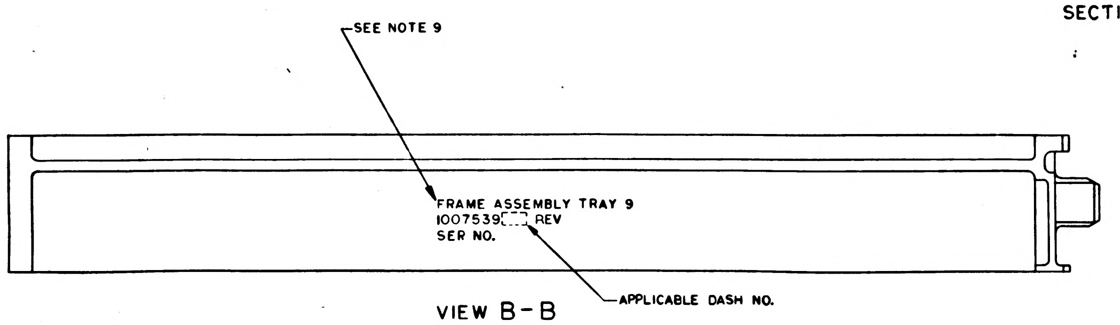
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS. 23,24,25 AND 26 TO FIND NO. 1 BEFORE ENCAPSUALATION

ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION

VIEW A-A
SEE SHEET 1


SEE NOTE 4
1.660
1.700
ENCAPSULATION
1.630
MAX HARNESS

SECTION F-F


SEE NOTE 9
FRAME ASSEMBLY TRAY 9
1007539-[ ] REV
SER NO.
APPLICABLE DASH NO.

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS .XXX ± .005 .XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R.C. Taylor 4 SEPT 64
CHECKED A. Tumbleham 18 Sept 64
APPROVED
APPROVED 9/4/64
APPROVED MIT W. Kupfer
APPROVED MSC 12-7-64
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

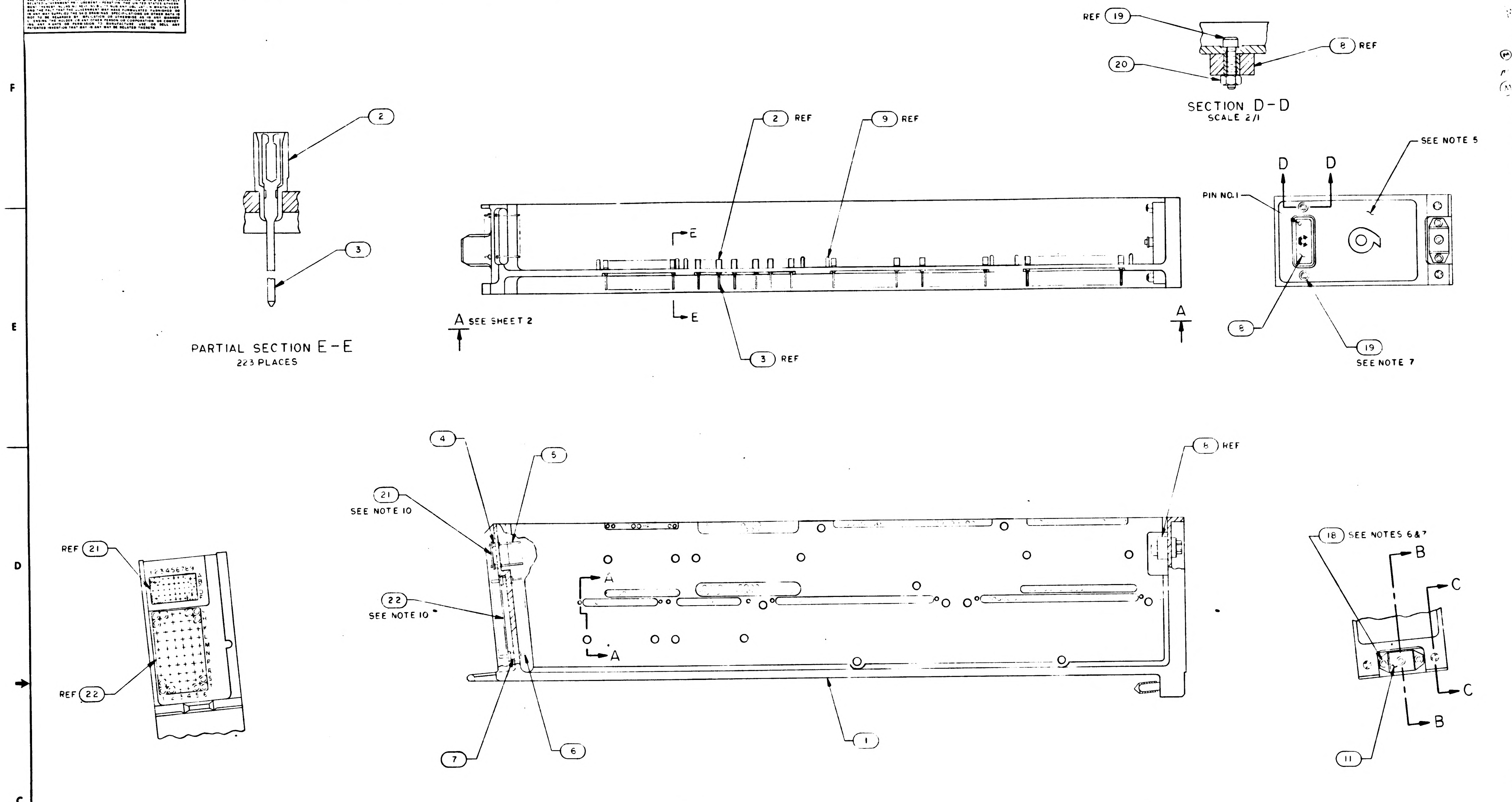
FRAME ASSEMBLY
TRAY 9

CODE IDENT NO. 80230
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 2 OF 2

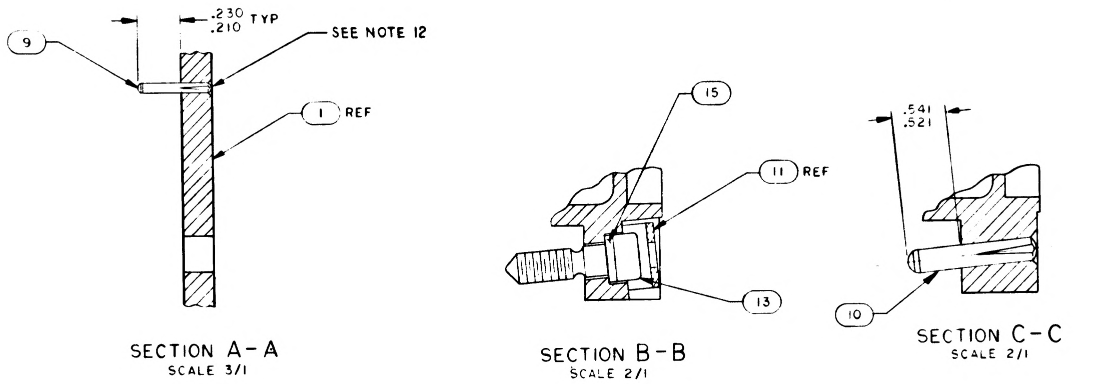
1007539 J

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES [illegible] DWG REV A PER TDRR [illegible]			[illegible]	[illegible]
C		REVISED PER TDRR 15157		[illegible]	[illegible]	WK
D		REVISED PER TDRR 15948	[illegible]	CW	1 FEB 65	
E		REVISED PER TDRR 16333	JM	[illegible]	15 FEB 65	
F		REVISED PER TDRR 16830	[illegible]	YM	3 MAR 65	
G		REVISED PER TDRR 1761?	[illegible]	[illegible]	25 MAR 65	
H		REVISED PER TDRR 18690	[illegible]	EF	4 MAY [illegible]	
J		REVISED PER TDRR 18691	[illegible]	EF	7 [illegible] 65	
K		REVISED PER TDRR 8695	AN.	JM	11 MAY 65	



Ⓔ REPLACES WOND DWG REV A



SECTION A-A
SCALE 3/1

SECTION B-B
SCALE 2/1

SECTION C-C
SCALE 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4, 5, 6 AND 7 PER ND 1002136
3. BOND FIND NOS. 23, 24, 25 AND 26 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
4. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A OR B USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
5. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
6. COAT THREADS OF FIND NO. 18 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
7. MOUNTING TORQUE FOR FIND NOS. 18 AND 19 TO FIND NO. 1 TO BE 5.0/5.5 IN. LB
8. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT.
9. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
10. BOND FIND NO. 21 TO FIND NO. 4 AND FIND NO. 22 TO FIND NO. 7 PER ND
11. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.
12. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004, POTTING SIDE ONLY.

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009569		WIRING DIAGRAM	REF
1	1008642		WIRE LIST A-H	28
1				27
1	1008641		WIRING HARNESS D	26
1	1008640		WIRING HARNESS C	25
1	1008639		WIRING HARNESS B	24
1	1008638		WIRING HARNESS A	23
1	1008552		GASKET, CONNECTOR	22
1	1008553		GASKET, CONNECTOR	21
2	MS21045C04		NUT, SELF-LOCKING HEX	20
2	MS16995-11		SCREW, CAP, SOCKET HEAD	19
2	MS16995-10		SCREW, CAP, SOCKET HEAD	18
~~19~~	~~MS171433~~		~~PIN SPRING~~	17
~~19~~	~~1004207~~		~~DRIVE CYLINDER~~	16
1	[illegible]-2		WASHER	15
~~38~~	~~1004206~~		~~WASHER THRUST~~	14
1	[illegible]		SCREW, SOCKET HEAD	13
~~19~~	~~1008172~~		~~SCREW, JACK~~	12
1	1001317		RETAINER, JACK SCREW	11
2	1010620-5		PIN, GUIDE	10
16	MS16556-604		PIN, GUIDE	9
1	1010821-1		CONNECTOR, RECEPTACLE	8
60	1010383-1		INSULATOR, WRAPPOST-MALE	7
60	1010382-1		CONTACT, PLACE END OF CONN	6
45	1006782-2		CONTACT, WRAPPOST-MALE, MIN	5
45	1006775		INSULATOR, WRAPPOST-MALE, MIN	4
223	1006781-2		CONTACT, WRAPPOST-FEMALE, MIN	3
223	1006774		INSULATOR, WRAPPOST-FEMALE, MIN	2
1	1008529		FRAME	1

C11 LIST OF MATERIALS

1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± .02 ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN
CHECKED
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

FRAME ASSEMBLY
TRAY 9

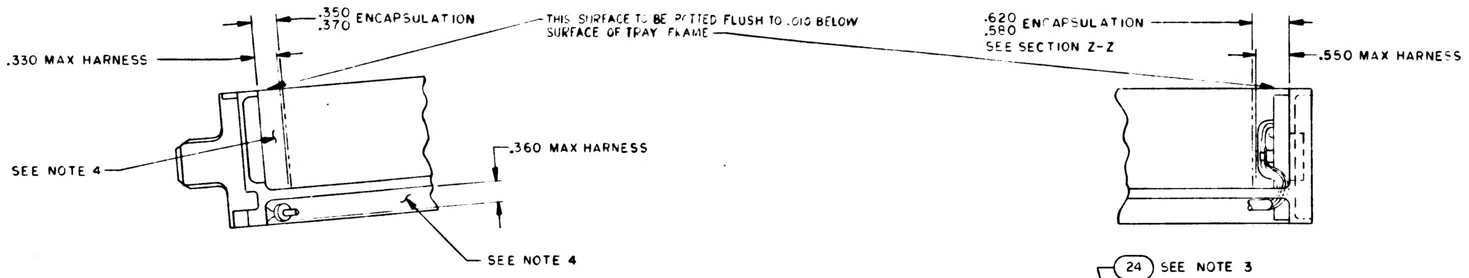
CODE IDENT NO 80230
SIZE E
DRAWING NO 1007539
SCALE 1/1
SHEET 1 OF

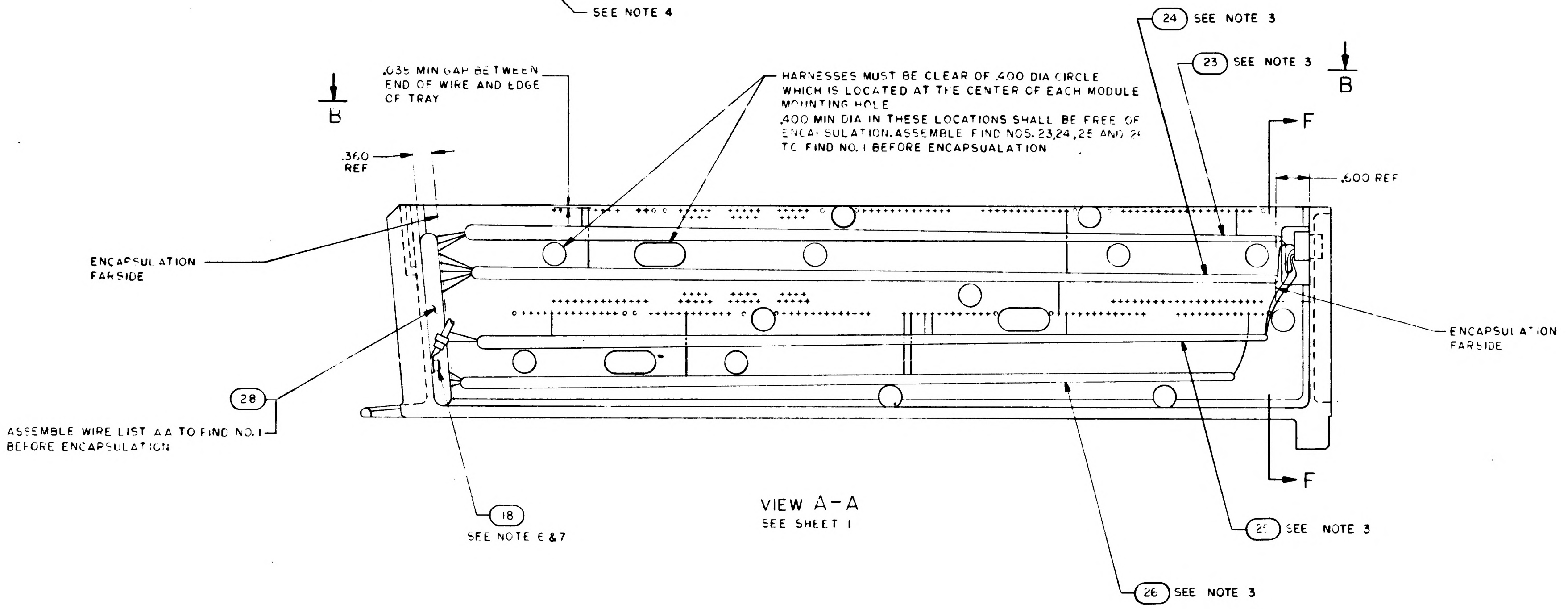
1007539 K

NOTICE WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

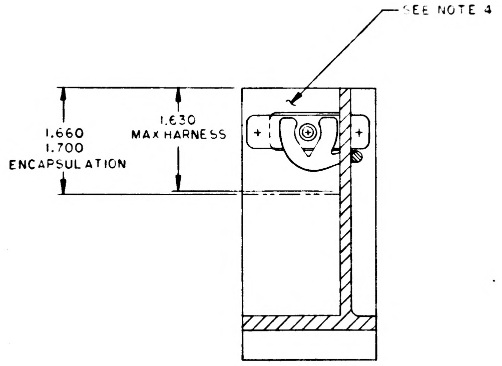
REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
F		[illegible] DWG REV [illegible] PER TDRR [illegible]				
C		REVISED PER TDRR 15157				
D		REVISED PER TDRR 15948			FEB 65	
E		REVISED PER TDRR 16333	JM		FEB 65	
F		REVISED PER TDRR 16830	WP		3 MAR 65	
G		REVISED PER TDRR [illegible]				
H		REVISED PER TDRR 18690		EF	MAY 65	
J		REVISED PER TDRR 18291	---	EF		
K		REVISED PER TDRR 18695	A.N.		MAY 65	

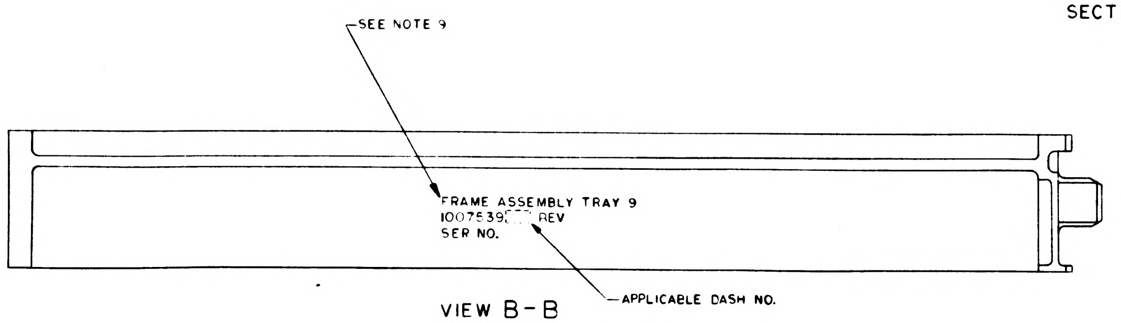

.350
.370 ENCAPSULATION
.330 MAX HARNESS
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
SEE NOTE 4
.360 MAX HARNESS
SEE NOTE 4
.620
.580 ENCAPSULATION
SEE SECTION Z-Z
.550 MAX HARNESS


24 SEE NOTE 3
23 SEE NOTE 3
B
B
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS. 23,24,25 AND 26 TO FIND NO. 1 BEFORE ENCAPSUALATION
.360 REF
F
.600 REF
ENCAPSULATION FARSIDE
ENCAPSULATION FARSIDE
28
ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION
F
18
SEE NOTE 6 & 7
25 SEE NOTE 3
26 SEE NOTE 3

VIEW A-A
SEE SHEET 1


SEE NOTE 4
1.660
1.700
ENCAPSULATION
1.630
MAX HARNESS

SECTION F-F


SEE NOTE 9
FRAME ASSEMBLY TRAY 9
1007539-___ REV
SER NO.
APPLICABLE DASH NO.

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

1007539 K

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007579	
NEXT ASSY	USED ON
APPLICATION	

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CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS .XXX ± .005 .XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN R.C. Taylor 4 SEPT 64
CHECKED
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

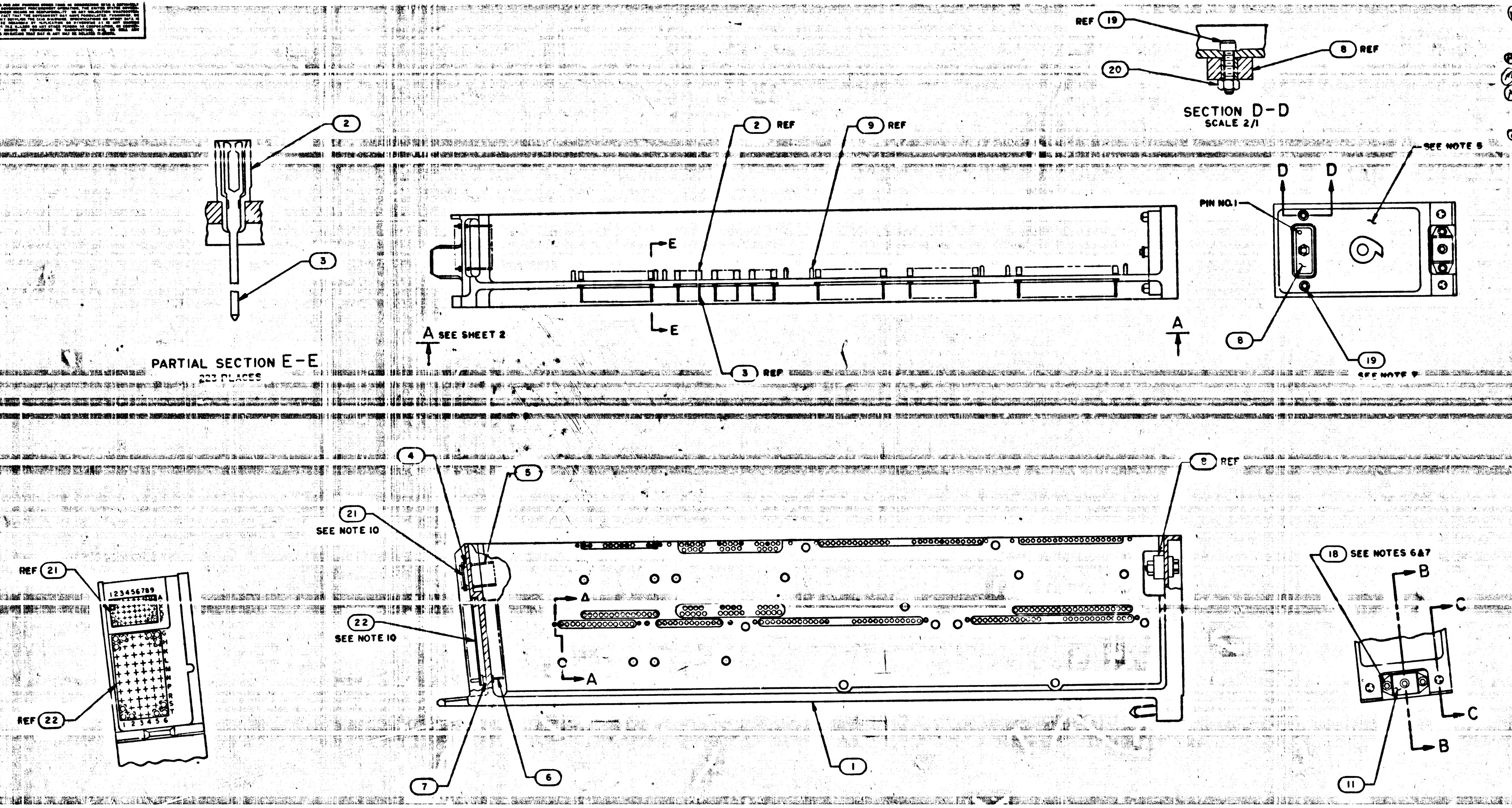
MANNED SPACECRAFT CENTER
HOUSTON TEXAS

FRAME ASSEMBLY
TRAY 9

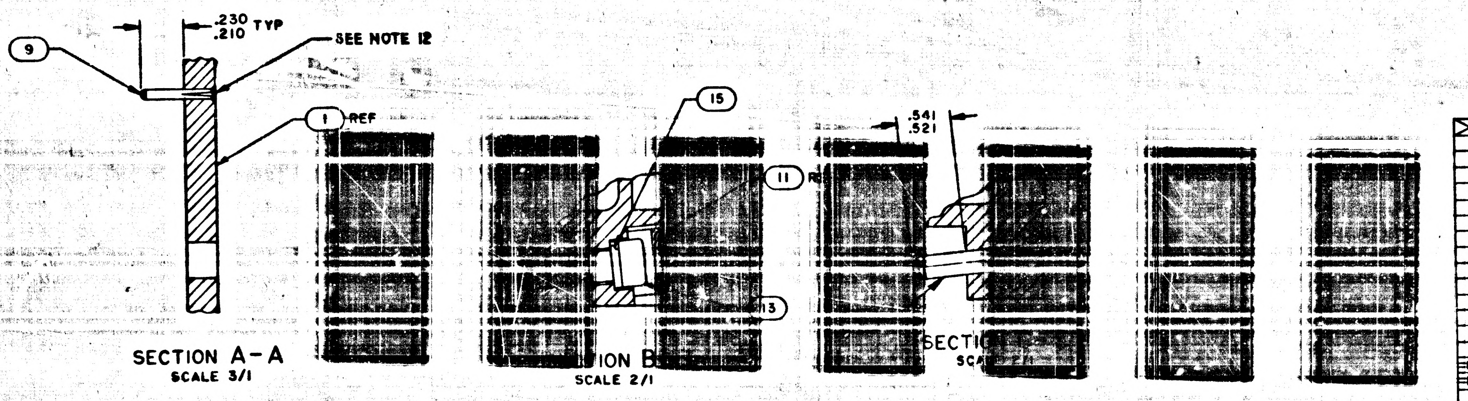
CODE IDENT NO	SIZE	DRAWING NO.
80230	E	1007539

SCALE 1/1 SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14706				
C		REVISED PER TDRR 15157				
D		REVISED PER TDRR 15948			11 FEB 65	
E		REVISED PER TDRR 16333				
F		REVISED PER TDRR 16830				
G		REVISED PER TDRR 17613				
H		REVISED PER TDRR 18690				
J		REVISED PER TDRR 18691				
K		REVISED PER TDRR 18695				
L		REVISED PER TDRR 20145				



(B) REPLACES WORD DWG REV A



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4, 5, 6 AND 7 PER ND 1002136
3. BOND FIND NOS. 23, 24, 25 AND 26 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
4. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A OR B USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
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9. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
10. BOND FIND NO. 21 TO FIND NO. 4 AND FIND NO. 22 TO FIND NO. 7 PER ND 1002237.
11. COAT 1010322 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.
12. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND 1002004, POTTING SIDE ONLY.
13. PROCURE PER PS [illegible]49.

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
☒	1009569		WIRING DIAGRAM	REF
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1	[illegible]		[illegible] HARNESS	26
1	[illegible]		[illegible] HARNESS	25
1	[illegible]		[illegible] HARNESS	24
[illegible]	[illegible]		[illegible] HARNESS	23
1	[illegible]		[illegible], CONNE[illegible]	22
1	[illegible]		[illegible], CONNE[illegible]	21
[illegible]	[illegible]		[illegible]F-LOCK	20
2	[illegible]		[illegible], CAP, SO[illegible]	19
2	[illegible]		[illegible], CAP, SO[illegible]	18
[illegible]	[illegible]		[illegible]	17
[illegible]	[illegible]		[illegible] CYLINDER	16
1	1008099-2		WASHER	15
~~30~~	~~1004206~~		~~WASHER THRUST~~	14
1	1008098		SCREW, SOCKET HEAD	13
~~19~~	~~1008178~~		~~SCREW, JACK~~	12
1	1001317		RETAINER, JACK SCREW	11
2	1010620-5		PIN, GUIDE	10
16	MS16556-604		PIN, GUIDE	9
1	1010821-1		CONNECTOR, RECEPTACLE	8
60	1010383-1		INSULATOR, WRAPOST-MALE	7
60	1010382-1		CONTACT, BLADE EDGE CONN	6
45	1006782-2		CONTACT, WRAPOST-MALE, MIN	5
45	1006775		INSULATOR, WRAPOST-MALE, MIN	4
223	1006781-2		CONTACT, WRAPOST-FEMALE, MIN	3
223	1006774		INSULATOR, WRAPOST-FEMALE, MIN	2
1	1008529		FRAME	1

011 LIST OF MATERIALS

NEXT ASSY	USED ON
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R.C. Taylor
CHECKED A. Anderson
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 9

CODE IDENT NO. 80230
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 1 OF 2

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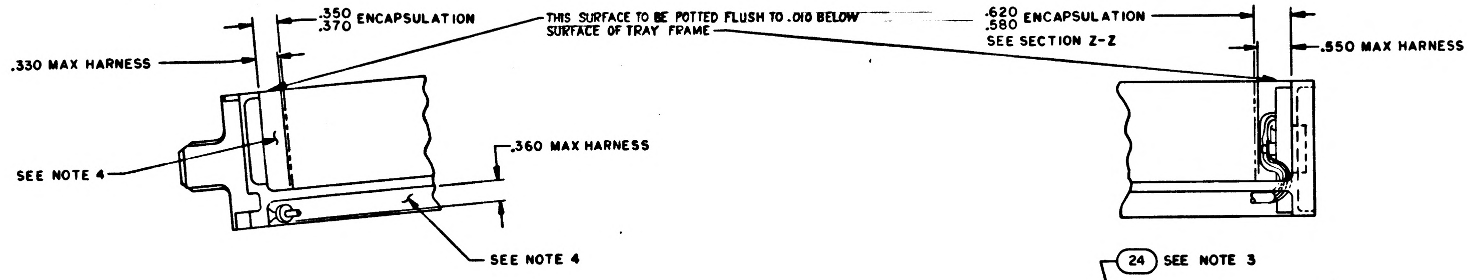
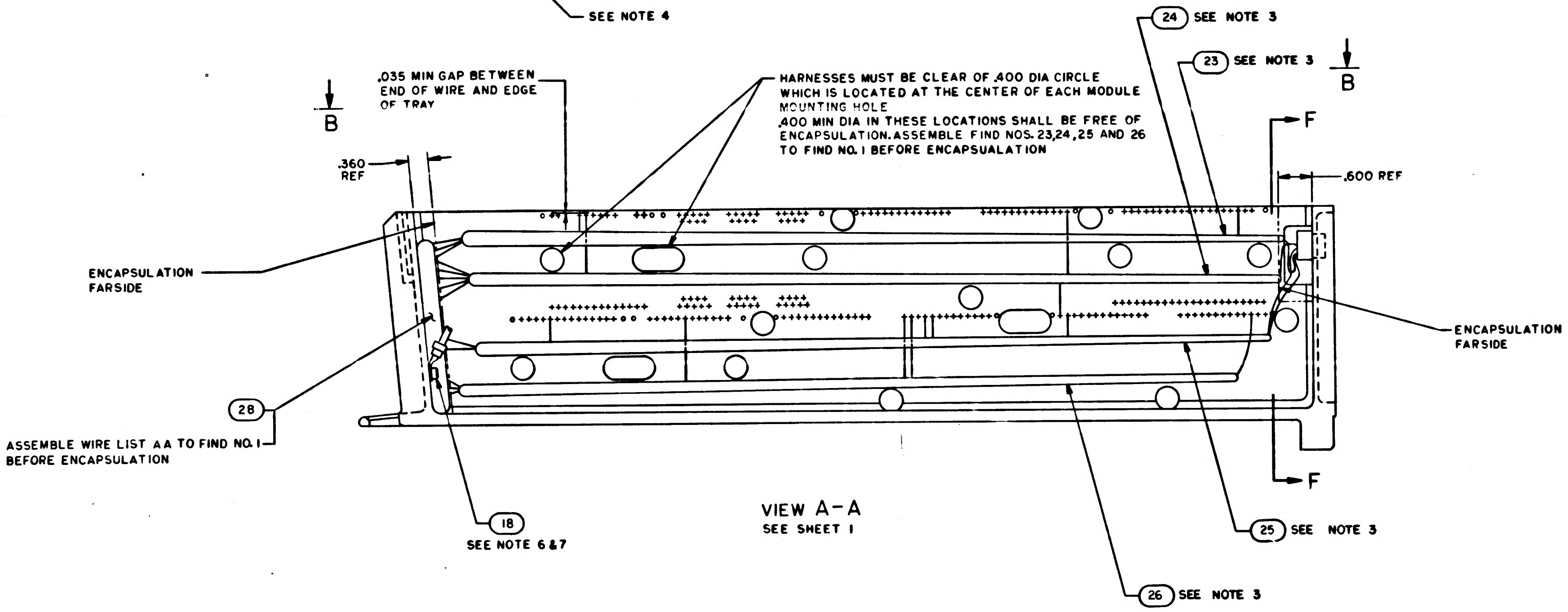
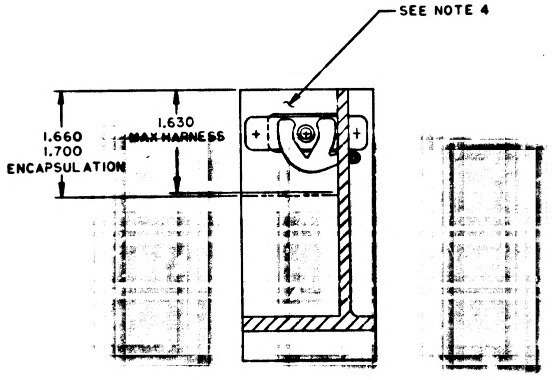
REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACESWORD DWG REV A PER TDRR 14706	YD		3/6/64	WK
C		REVISED PER TDRR 15157			21 Dec '64	WK
D		REVISED PER TDRR 15948	JJ	LW	11 FEB 66	
E		REVISED PER TDRR 16333	M		15 FEB 65	
F		REVISED PER TDRR 16850	WP	YM	3 MAR 65	
G		REVISED PER TDRR 17613	JK	WL	25 MAR 65	
H		REVISED PER TDRR 18690	US	EF	4 MAY 65	
J		REVISED PER TDRR 1869	JJ	EF	4 MAY 65	
K		REVISED PER TDRR 18695	A.N		11 MAY 65	
L		REVISION STATUS CHANGE		FC		

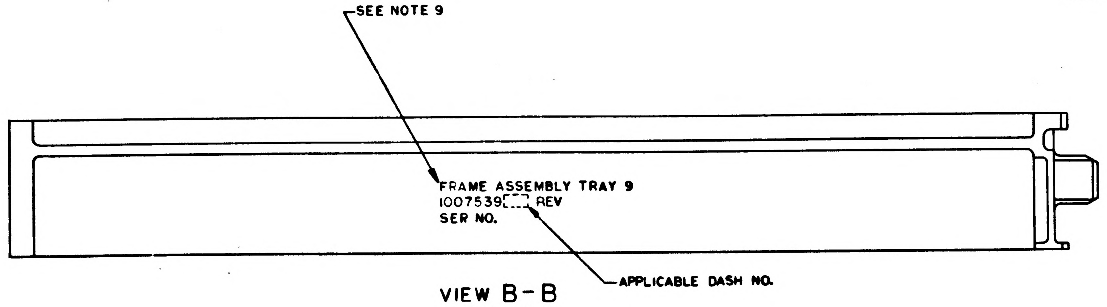

.350
.370 ENCAPSULATION
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.620
.580 ENCAPSULATION
SEE SECTION Z-Z
.550 MAX HARNESS
.330 MAX HARNESS
SEE NOTE 4
.360 MAX HARNESS
SEE NOTE 4


24 SEE NOTE 3
23 SEE NOTE 3
B
B
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE
.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS. 23,24,25 AND 26 TO FIND NO. 1 BEFORE ENCAPSUALATION
F
F
.360 REF
.600 REF
ENCAPSULATION FARSIDE
ENCAPSULATION FARSIDE
28
ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION
18
SEE NOTE 6&7
25 SEE NOTE 3
26 SEE NOTE 3

VIEW A-A
SEE SHEET 1


SEE NOTE 4
1.630 MAX HARNESS
1.660
1.700 ENCAPSULATION

SECTION F-F


SEE NOTE 9
FRAME ASSEMBLY TRAY 9
1007539 REV
SER NO.
APPLICABLE DASH NO.

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007579	

APPLICATION

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CAPACITOR VALUES ARE IN µf
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TOLERANCES ON
FRACTIONS ± — DECIMALS XXX ± .005 XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R.C. Taylor 4 SEPT 64
CHECKED 18 Sept 64
APPROVED
APPROVED 9/4/64
APPROVED MIT 8 Dec 64
APPROVED MSC 12-7-64
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 9

CODE IDENT NO. 80230
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 2 OF 2

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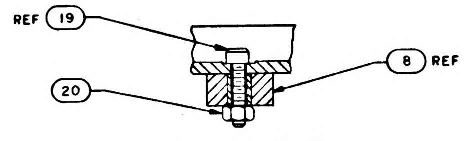
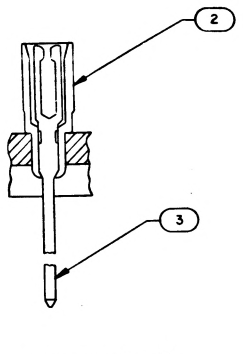
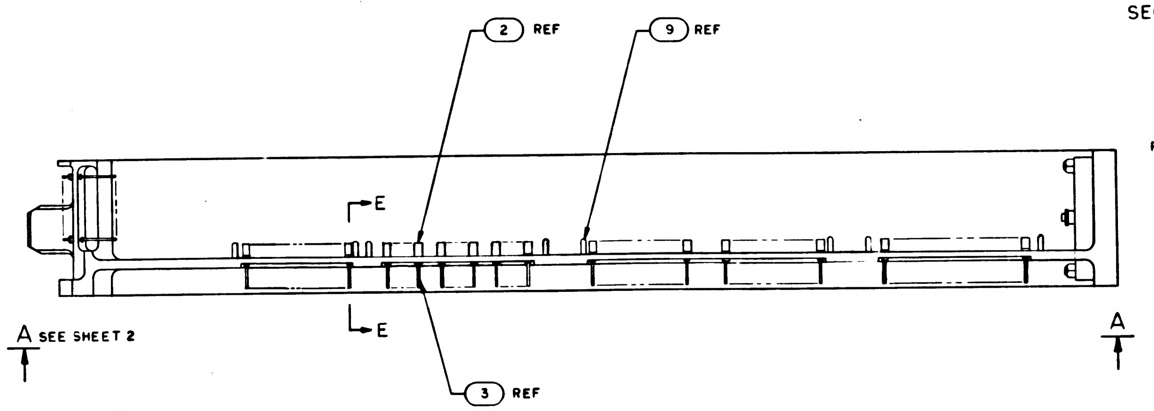
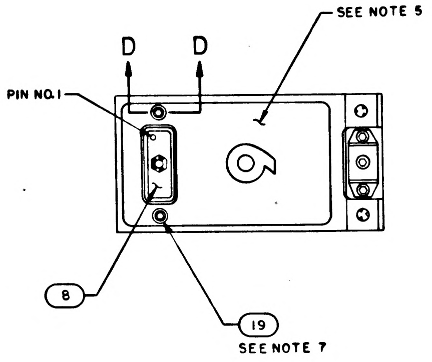


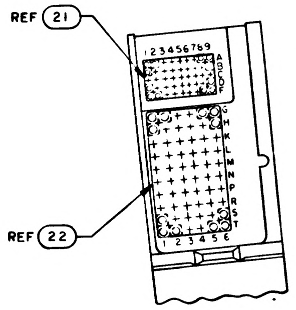
SECTION D-D
SCALE 2/1

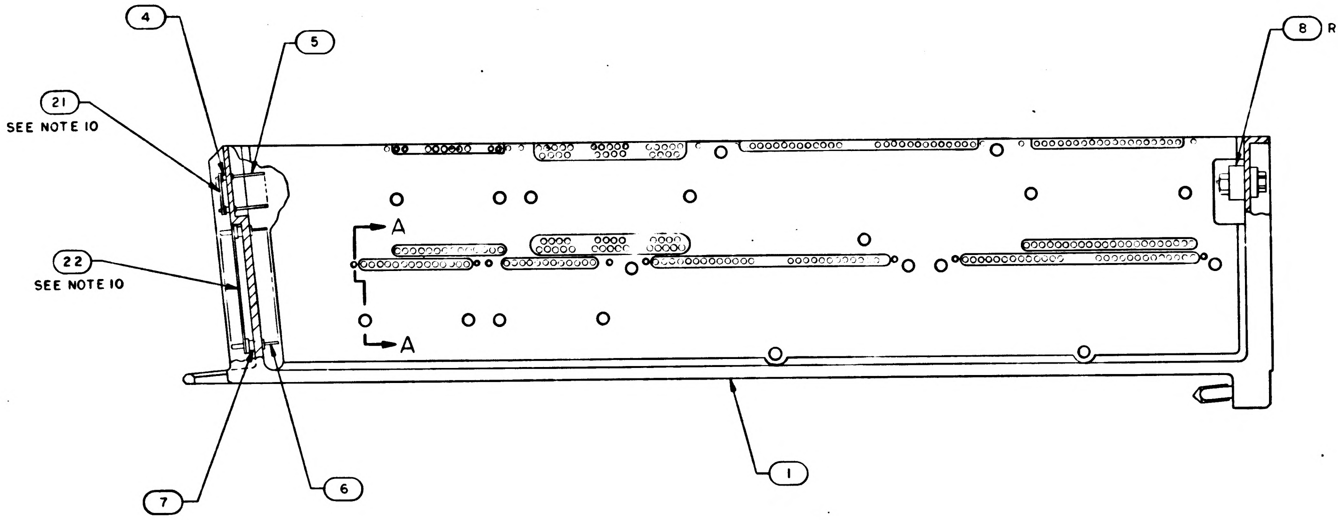


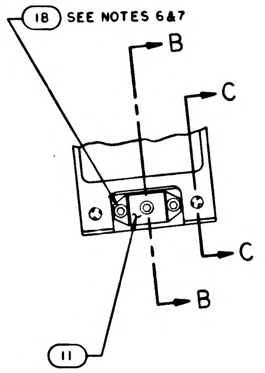
PARTIAL SECTION E-E
223 PLACES



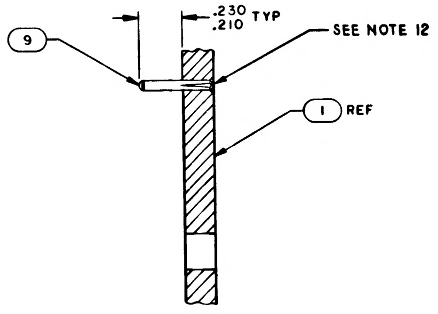




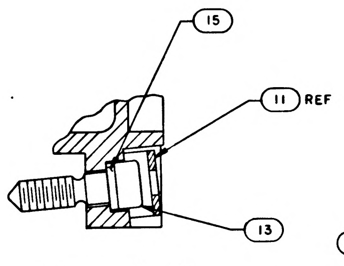




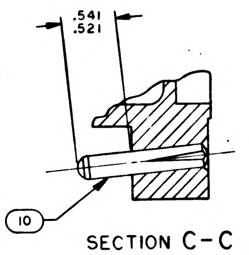
Ⓑ REPLACES WORD DWG REV A



SECTION A-A
SCALE 3/1



SECTION B-B
SCALE 2/1



SECTION C-C
SCALE 2/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4, 5, 6 AND 7 PER ND 1002136
3. BOND FIND NOS. 23, 24, 25 AND 26 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
4. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A OR B USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
5. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
6. COAT THREADS OF FIND NO. 18 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
7. MOUNTING TORQUE FOR FIND NOS. 18 AND 19 TO FIND NO. 1 TO BE 5.0/5.5 IN. LB
8. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT.
9. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
10. BOND FIND NO. 21 TO FIND NO. 4 AND FIND NO. 22 TO FIND NO. 7 PER ND 1002237.

~~11. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD B. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.~~

11. COAT 10[illegible]22 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A FORMULATION CONSISTING OF 40 PARTS BY WT. 1010959-1, 100 PARTS BY WT. 1010959-2 AND 7 PARTS BY WT. 1006277 AND CURE AT ROOM TEMPERATURE FOR THREE HOURS OR ONE HOUR AT 140°F. LIMITED AMOUNT ALLOWED TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004, TYPE I.
12. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004 POTTING SIDE ONLY.
13. PROCURE PER PS1007149.

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR [illegible]			[illegible]	WK
C		REVISED PER TDRR 15157			29 Dec 64	WK
D		REVISED PER TDRR 15948		CW	11 FEB 65	
E		REVISED PER TDRR [illegible]			15 FEB 65	
F		REVISED PER TDRR [illegible]		Y.M.	[illegible] 65	
G		REVISED PER TDRR [illegible]			25 [illegible] 65	
H		REVISED PER TDRR [illegible]		F	[illegible] 65	
J		REVISED PER TDRR 16[illegible]		F	7 MAY 65	
K		REVISED PER TDRR 969[illegible]	AN		11 MAY 65	
L		REVISED PER TDRR 20[illegible]			19 JUN 65	
M		REVISED PER TDRR 22[illegible]	RGB		22 JUL 65	

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO
☒	1009569		WIRING DIAGRAM	REF
1	1008642		WIRE LIST AA	28
1				27
1	1008641		WIRING HARNESS D	26
1	1008640		WIRING HARNESS C	25
1	1008639		WIRING HARNESS B	24
1	1008638		WIRING HARNESS A	23
1	1008552		GASKET, CONNECTOR	22
1	1008553		GASKET, CONNECTOR	21
2	MS21045C04		NUT, SELF-LOCKING HEX	20
2	MS16995-11		SCREW, CAP, SOCKET HEAD	19
2	MS16995-10		SCREW, CAP, SOCKET HEAD	18
~~19~~	~~MS171433~~		~~PIN SPRING~~	17
~~19~~	~~1004207~~		~~DRIVE CYLINDER~~	16
1	1008099-2		WASHER	15
~~38~~	~~1004206~~		~~WASHER THRUST~~	14
1	1008098		SCREW, SOCKET HEAD	13
~~19~~	~~1008172~~		~~SCREW, JACK~~	12
1	1001317		RETAINER, JACK SCREW	11
2	1010620-5		PIN, GUIDE	10
16	MS16556-604		PIN, GUIDE	9
1	1010821-1		CONNECTOR, RECEPTACLE	8
60	1010383-1		INSULATOR, WRAPOST-MALE	7
60	1010382-1		CONTACT, BLADE EDGE CONN	6
45	1006782-2		CONTACT, WRAPOST-MALE, MIN	5
45	1006775		INSULATOR, WRAPOST-MALE, MIN	4
223	1006781-2		CONTACT, WRAPOST-FEMALE, MIN	3
223	1006774		INSULATOR, WRAPOST-FEMALE, MIN	2
1	1008529		FRAME	1

011 LIST OF MATERIALS

NEXT ASSY	USED ON
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN R.C. Taylor 31 Aug 64
CHECKED A. Lindstrom 18 Sept 64
APPROVED
APPROVED [illegible] 12/4/64
APPROVED MIT [illegible]
APPROVED MSC [illegible] 12-4-64
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY TRAY 9

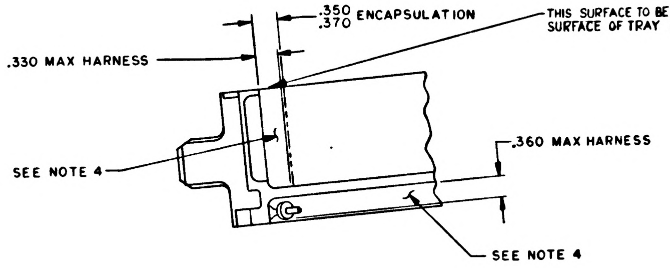
CODE IDENT NO. 80230
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 1 OF 2

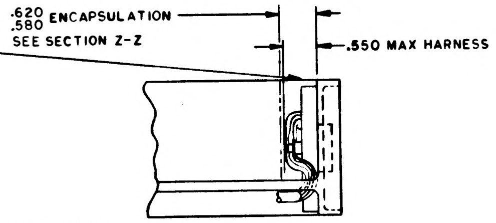
1007539 M

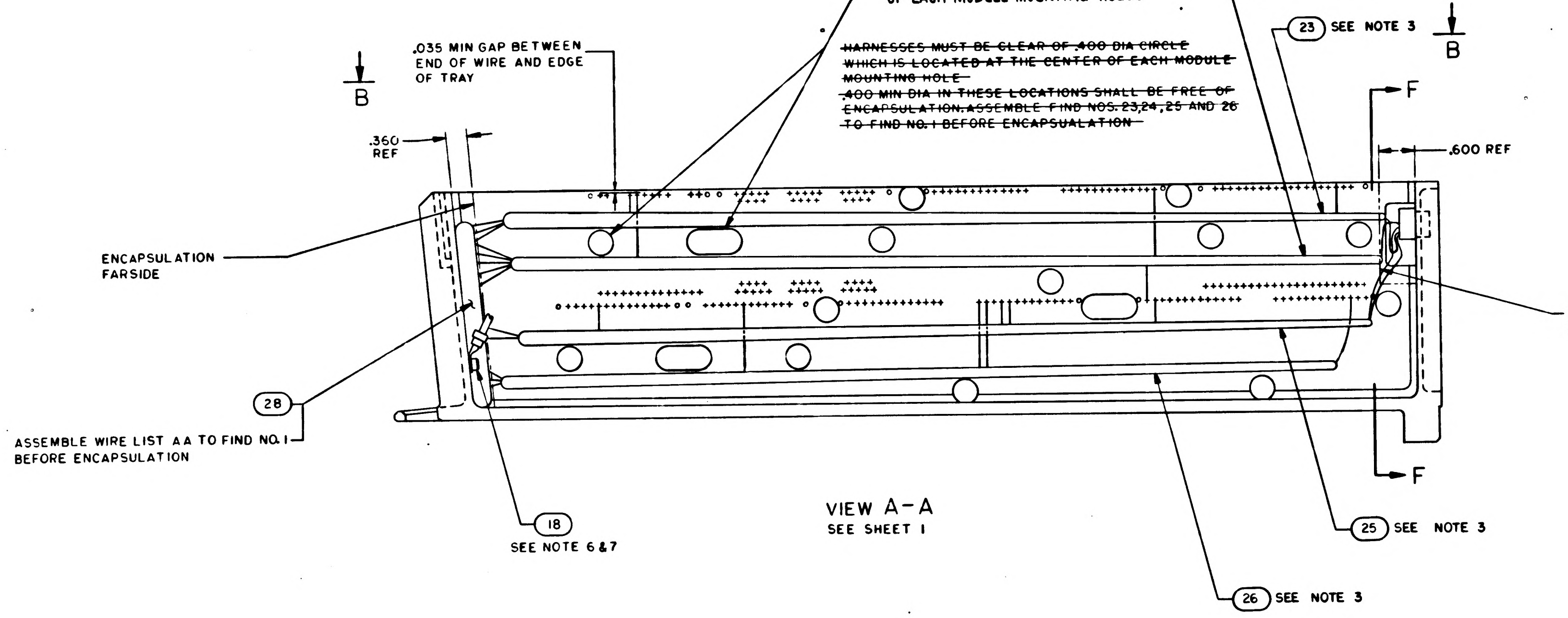
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

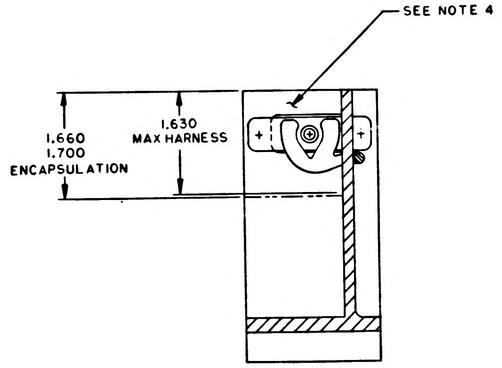
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14766				
C		REVISED PER TDRR 15157			2 Dec 64	
D		REVISED PER TDRR 15948	JJJ		11 FEB 65	
E		REVISED PER TDRR 16333	JN		15 FEB 65	
F		REVISED PER TDRR 16830	WP	Y.M.	3 MAR 65	
G		REVISED PER TDRR 17613				
H		REVISED PER TDRR 18690		EF	4 MAY 65	
J		REVISED PER TDRR 18691	JJJ	EF	7 MAY 65	
K		REVISED PER TDRR 18695	A.N		11 MAY 65	
L		REVISION STATUS CHANGE		TAC	9 JUN 65	
M		REVISED PER TDRR 20785	RB		22 JUL 65	


.350
.370 ENCAPSULATION
.330 MAX HARNESS
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.360 MAX HARNESS
SEE NOTE 4
SEE NOTE 4

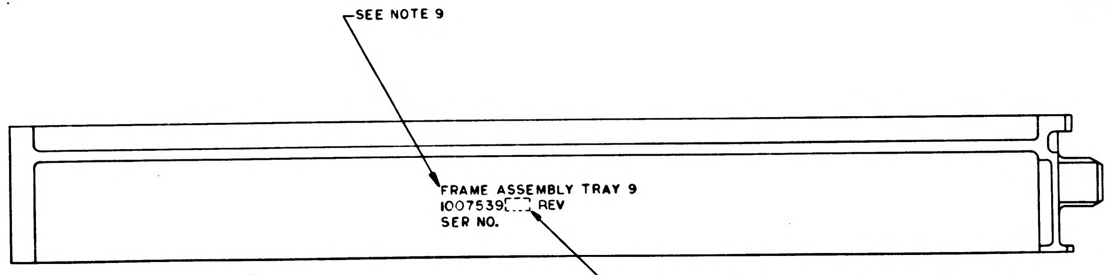

.620
.580 ENCAPSULATION
SEE SECTION Z-Z
.550 MAX HARNESS


ENCAPSULATION MUST BE CLEAR OF .335/.420 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
~~HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE~~
~~.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS. 23,24,25 AND 26 TO FIND NO. 1 BEFORE ENCAPSULATION~~
24 SEE NOTE 3
23 SEE NOTE 3
B
B
F
F
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.360 REF
.600 REF
ENCAPSULATION FARSIDE
ENCAPSULATION FARSIDE
28
ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION
18
SEE NOTE 6 & 7
25 SEE NOTE 3
26 SEE NOTE 3

VIEW A-A
SEE SHEET 1


SEE NOTE 4
1.660
1.700
ENCAPSULATION
1.630
MAX HARNESS

SECTION F-F


SEE NOTE 9
FRAME ASSEMBLY TRAY 9
1007539- REV
SER NO.
APPLICABLE DASH NO.

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS XXX ± .005 XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

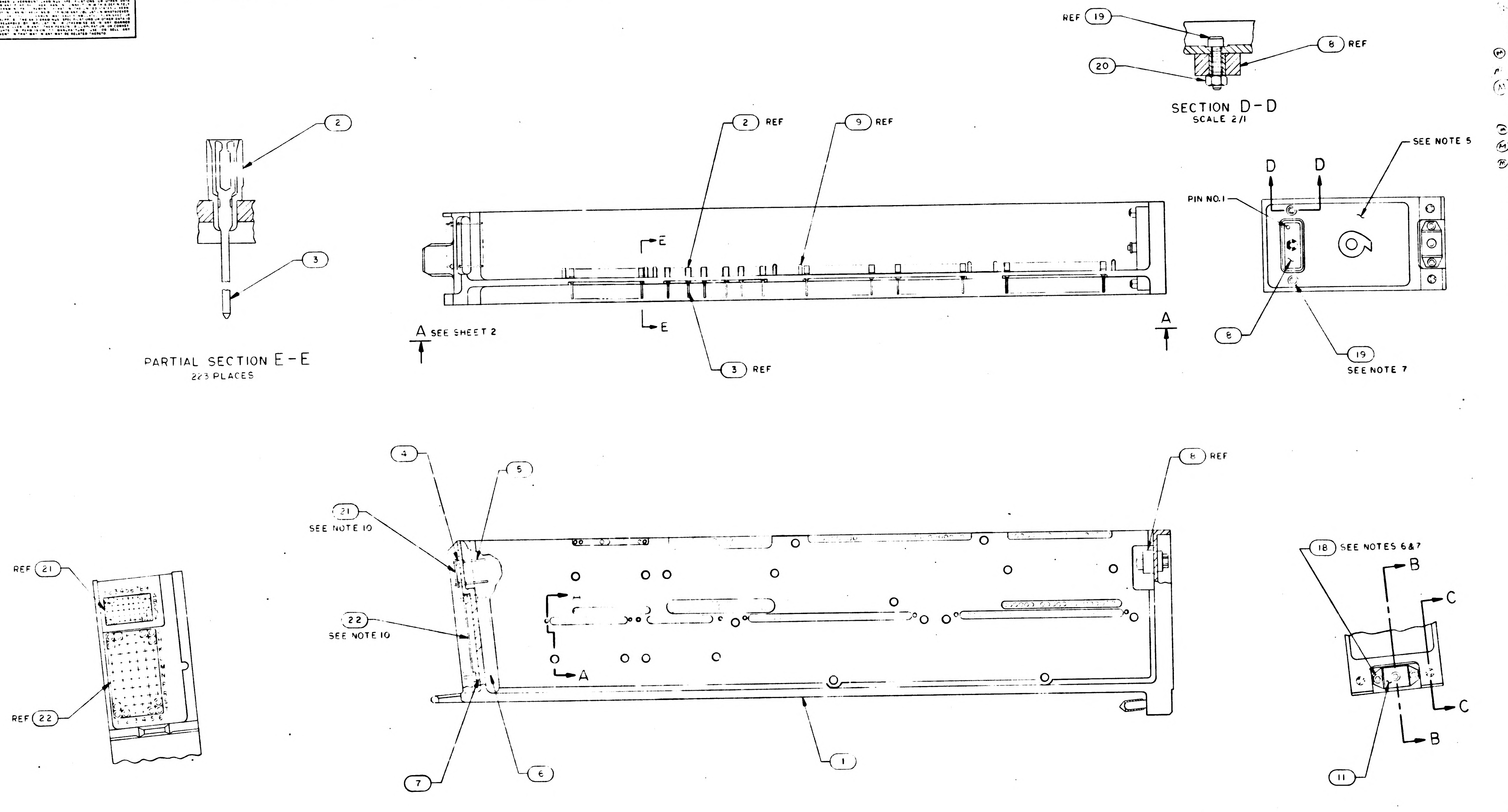
DRAWN R.C. Taylor 4 SEPT 64
CHECKED A. Lindstrom 18 Sept 64
APPROVED
APPROVED 12/4/64
APPROVED MIT 6 Dec 64
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 9

CODE IDENT NO. 80230
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 2 OF 2

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR [illegible]				
C		REVISED PER TDRR 15157				
D		REVISED PER TDRR 15948				
E		REVISED PER TDRR 16333	JM		15 FEB 65	
F		REVISED PER TDRR 16530			3 MAR 65	
G		REVISED PER TDRR 17615			25 MAR 65	
H		REVISED PER TDRR 18690		EF	4 MAY	
J		REVISED PER TDRR 18691		EF		
K		REVISED PER TDRR 8695	AN.		11 MAY 65	
L		REVISED PER TDRR 20145	RJJ	JAC	19 JUN 65	
M		REVISED PER TDRR 20785	RGB	RWH	22 JUL 65	
N		REVISION STATUS CHANGED	JWF		30 AUG 65	



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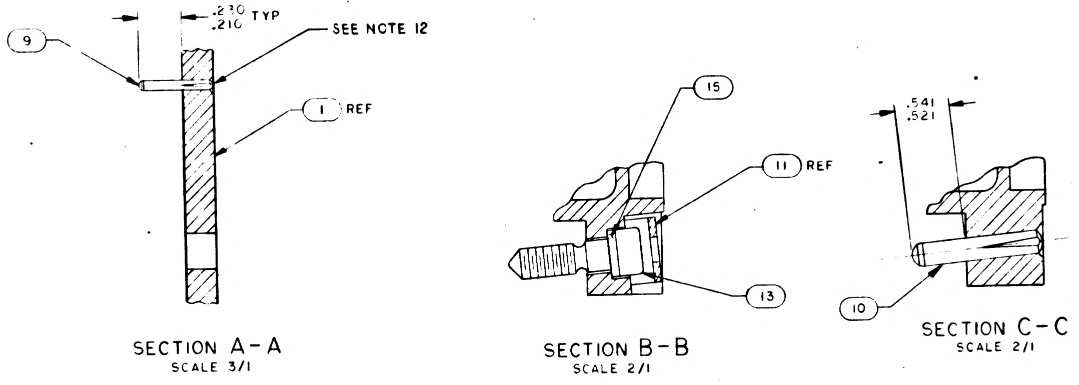


NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ASSEMBLE FIND NUMBERS 2, 3, 4, 5, 6 AND 7 PER ND 1002136
3. BOND FIND NOS. 23, 24, 25 AND 26 TO FIND NO. 1 PER ND 1002004 TYPE I AS NECESSARY
4. ENCAPSULATE PER ND 1002236, SECTION 3.6, CURE CYCLE A OR B USING 1012503, .010 ABOVE TO .050 BELOW PERIPHERAL SURFACES OF TRAY FRAME AND A MINIMUM DEPTH OF .010 ENCAPSULATION OVER ANY COMPONENT. PRIMER TO EXTEND BEYOND ENCAPSULATION MATERIAL BUT NOT TO EXCEED .188 MAX. MODULE MOUNTING SURFACE TO BE FREE OF PRIMER.
5. ALL AREAS IN THIS VIEW (FRONT END) TO BE COMPLETELY FREE OF ENCAPSULATION MATERIAL INCLUDING CONNECTOR AND PINS IN CONNECTOR. EVIDENCE OF ENCAPSULATION MATERIAL SEEPAGE NOT PERMISSIBLE
6. COAT THREADS OF FIND NO. 18 DURING ASSEMBLY TO FIND NO. 1 WITH MIL-P-8585 (WET ZINC CHROMATE PRIMER)
7. MOUNTING TORQUE FOR FIND NOS. 18 AND 19 TO FIND NO. 1 TO BE 5.0/5.5 IN. LB
8. ALL NICKEL WIRE HARNESS TERMINATIONS TO BE WELDED PER ND 1002005. ALL STRANDED COPPER WIRE HARNESS TERMINATIONS TO BE SOLDERED AS PER ND 1002071. ALL CRIMPED CONTACT PIN TERMINATIONS TO BE INSERTED AT TERMINATION POINT.
9. MARK .140/.100 HIGH BLACK CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
10. BOND FIND NO. 21 TO FIND NO. 4 AND FIND NO. 22 TO FIND NO. 7 PER ND 1002237.

~~11. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH ND 1002009 METHOD D. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004 TYPE I.~~

11. COAT 1010622 OR 1010821 CONNECTOR SOCKET HOLES (WITH AND WITHOUT WIRES) WITH A FORMULATION CONSISTING OF 40 PARTS BY WT. 1010959-1. 100 PARTS BY WT. 1010959-2. AND 7 PARTS BY WT. 1006277 AND CURE AT ROOM TEMPERATURE FOR THREE HOURS OR ONE HOUR AT 140°F. LIMITED AMOUNT ALLOWED TO CONTACT TRAY FRAME. SEAL OPENING BETWEEN FRAME AND CONNECTOR USING ND 1002004, TYPE I.
12. FILL MODULE GUIDE PIN HOLES AND ANY ASSOCIATED CRACKS IN PLATING (AFTER GUIDE PIN INSERTION) USING TYPE I ADHESIVE PER ND1002004 POTTING SIDE ONLY.
13. PROCURE PER PS1007149.

QTY REQD	PART OR IDENTIFYING NO	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO
☒	1009569		WIRING DIAGRAM	R
1	1008642		WIRE LIST A A	28
1				27
1	1008641		WIRING HARNESS D	26
1	1008640		WIRING HARNESS C	25
1	1008639		WIRING HARNESS B	24
1	1008638		WIRING HARNESS A	23
1	1008552		GASKET, CONNECTOR	22
1	1008553		GASKET, CONNECTOR	21
2	MS21045C04		NUT, SELF-LOCKING HEX	20
2	MS16995-11		SCREW, CAP, SOCKET HEAD	19
2	MS16995-10		SCREW, CAP, SOCKET HEAD	18
~~19~~	~~MS171433~~		~~PIN SPRING~~	17
~~19~~	~~1004207~~		~~DRIVE CYLINDER~~	16
1	1006099-2		WASHER	15
~~38~~	~~1004206~~		~~WASHER THRUST~~	14
1	1008098		SCREW, SOCKET HEAD	13
~~19~~	~~1008172~~		~~SCREW, JACK~~	12
1	1001317		RETAINER, JACK SCREW	11
2	1010620-5		PIN, GUIDE	10
16	MS16556-604		PIN, GUIDE	9
1	1010821-1		CONNECTOR, RECEPTACLE	8
60	1010383-1		INSULATOR, WRAPOST-MALE	7
60	1010382-1		CONTACT, BLADE EDGE CONN	6
45	1006782-2		CONTACT, WRAPOST-MALE, MIN	5
45	1006775		INSULATOR, WRAPOST-MALE, MIN	4
223	1006791-2		CONTACT, WRAPOST-FEMALE, MIN	3
223	1006774		INSULATOR, WRAPOST-FEMALE, MIN	2
1	1008529		FRAME	1

011 LIST OF MATERIALS

1007579		
NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± .02 ANGLES ± 1°
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN
CHECKED
APPROVED
APPROVED
APPROVED MIT
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 9

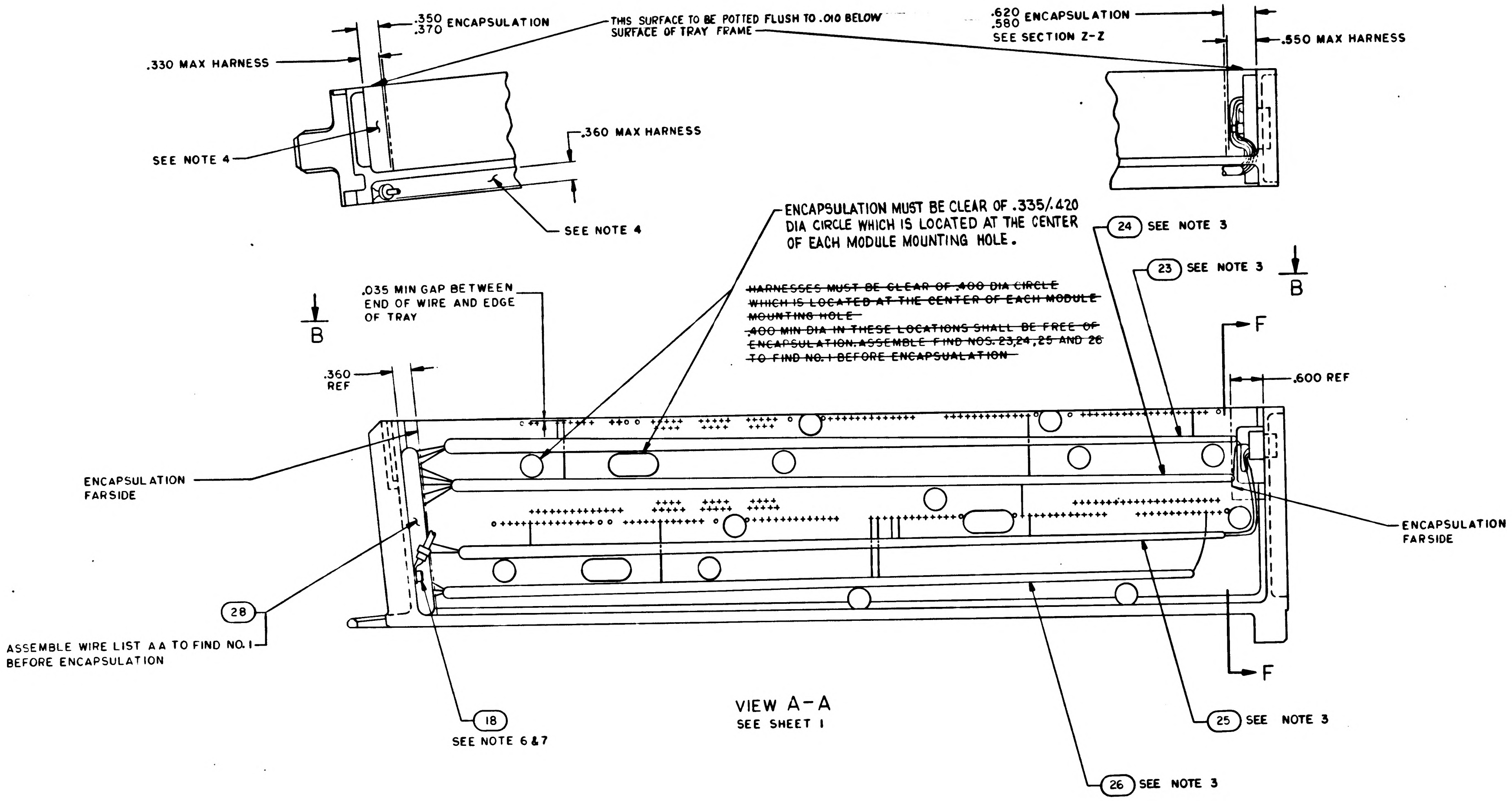
CODE IDENT NO 80230
SIZE E
DRAWING NO 1007539
SCALE 1/1
SHEET 1 OF 2

1007539 N

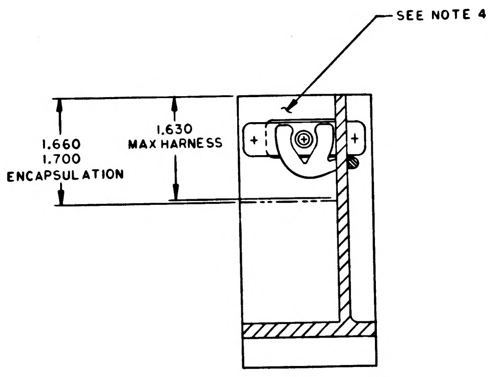
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

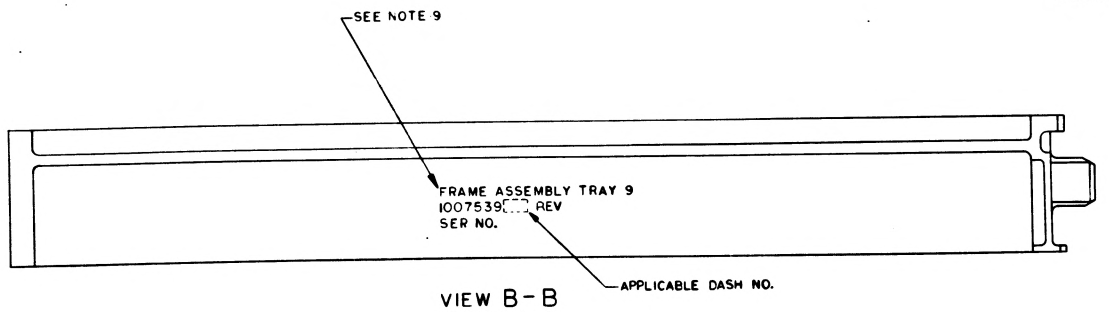
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES WORD DWG REV A PER TDRR 14766			[illegible]	WK
C		REVISED PER TDRR 15157		GM	29 Dec '64	WK
D		REVISED PER TDRR 15948	JJJ	CW	11 FEB 65	
E		REVISED PER TDRR 16333	JM	[illegible]	15 FEB 65	
F		REVISED PER TDRR 16830	JWP	YM	3 MAR 65	
G		REVISED PER TDRR 17613	JK	WTL	25 MAY 65	
H		REVISED PER TDRR 18690	US	EF	4 MAY 65	
J		REVISED PER TDRR 18691	JJJ	EF	9 MAY 65	
K		REVISED PER TDRR 18695	A.N	[illegible]	MAY 65	
L		REVISION STATUS CHANGE	[illegible]	JDC	[illegible] 65	
M		REVISED PER TDRR 20755	EB	[illegible]	22 JUL 65	
N		REVISED PER TDRR 21745	JWC	[illegible]	30 AUG 65	


.350
.370 ENCAPSULATION
.330 MAX HARNESS
THIS SURFACE TO BE POTTED FLUSH TO .010 BELOW SURFACE OF TRAY FRAME
.620
.580 ENCAPSULATION
SEE SECTION Z-Z
.550 MAX HARNESS
SEE NOTE 4
.360 MAX HARNESS
SEE NOTE 4
ENCAPSULATION MUST BE CLEAR OF .335/.420 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.
~~HARNESSES MUST BE CLEAR OF .400 DIA CIRCLE WHICH IS LOCATED AT THE CENTER OF EACH MODULE MOUNTING HOLE.~~
~~.400 MIN DIA IN THESE LOCATIONS SHALL BE FREE OF ENCAPSULATION. ASSEMBLE FIND NOS. 23,24,25 AND 26 TO FIND NO. 1 BEFORE ENCAPSULATION~~
24 SEE NOTE 3
23 SEE NOTE 3
B
B
.035 MIN GAP BETWEEN END OF WIRE AND EDGE OF TRAY
.360 REF
F
.600 REF
ENCAPSULATION FARSIDE
ENCAPSULATION FARSIDE
28
ASSEMBLE WIRE LIST AA TO FIND NO. 1 BEFORE ENCAPSULATION
F
18
SEE NOTE 6 & 7
25 SEE NOTE 3
26 SEE NOTE 3

VIEW A-A
SEE SHEET 1


SEE NOTE 4
1.660
1.700
ENCAPSULATION
1.630
MAX HARNESS

SECTION F-F


SEE NOTE 9
FRAME ASSEMBLY TRAY 9
1007539-___ REV
SER NO.
APPLICABLE DASH NO.

VIEW B-B
ROTATED 180°
MARKING VIEW AFTER ENCAPSULATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007579	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS XXX ± .005 XX ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R.C. Taylor 4 SEPT 64
CHECKED A. Tendlestone 18 Sept 64
APPROVED
APPROVED D. A. Test 1/4/64
APPROVED MIT W. Kupfer [illegible]
APPROVED MSC [illegible] 12-[illegible]
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 9

CODE IDENT NO. 80230
SIZE E
DRAWING NO. 1007539
SCALE 1/1
SHEET 2 OF 2

1007539 N

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1007539

REVISIONS 12031			
SYM	DESCRIPTION	DATE	APPROVAL

DASH NO. 011

PART NO.	DESCRIPTION	REQD.
1008529 -001	Frame, Tray 9	1
1006774	Insulator, Wrapost, Female Miniature	219
1006781-2	Contact, Wrapost, Female Miniature	219
1010382-1	Contact, Blade Edge Connector	60
1010383-1	Insulator, Wrapost, Male	60
1010622-1	Connector Receptacle	1
1010620-4	Pin, Guide	16
1010620-5	Pin, Guide	2
1001317	Retainer, Jack Screw	1
1008172	Screw, Jack	19
1008098	Screw, Socket Head,	1
1004206	Washer, Thrust	38
1008099-2	Washer	1
1004207	Drive Cylinder	19
MS 16995-10	Screw, Cap, Socket Head	3
MS 16995-11	Screw, Cap, Socket Head	2
MS 21045 C 04	Nut, Self-Locking Hex	2
1006782-2	Contact, Wrapost-Male, Miniature	45
1006775	Insulator, Wrapost-Male, Miniature	45
MS 171433	Pin, Spring	19
1008552-001	Gasket, Connector	1
1008553-001	Gasket, Connector	1

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007579	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN Karen DATE 2/25/64
CHECKED
APPROVAL
APPROVAL A. B. [illegible] 2/24/64
NASA APPROVAL [illegible] 3/4/64
MIT APPROVAL W Kupfer 25 [illegible] 64

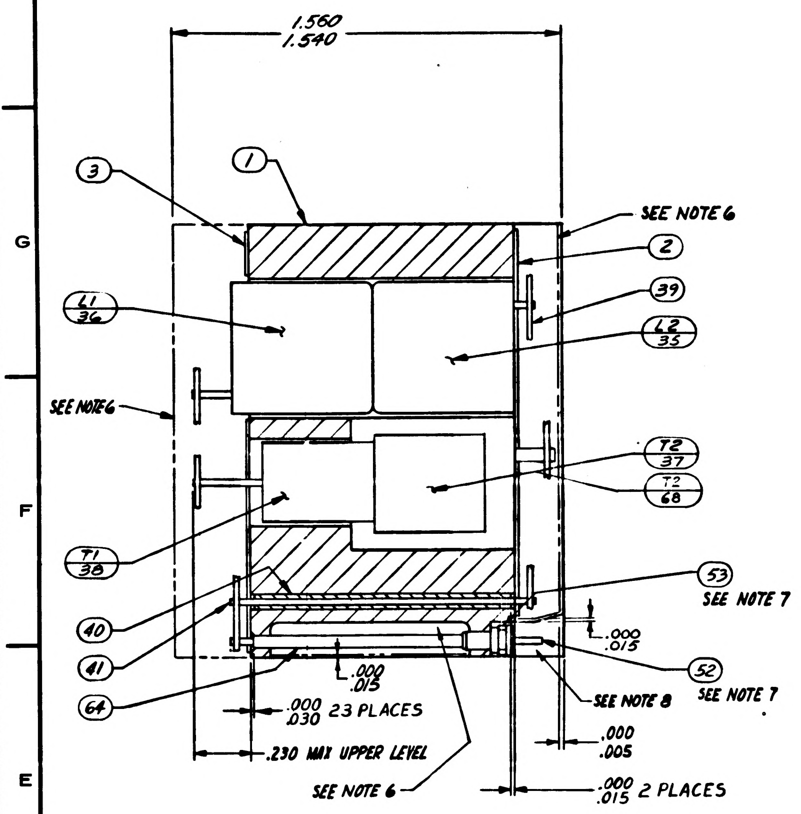
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSEMBLY
TRAY 9
(100 SERIES)

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1007539
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A	C-6	REVISED PER TDRR17354		12 MAR 65	M.G. / CP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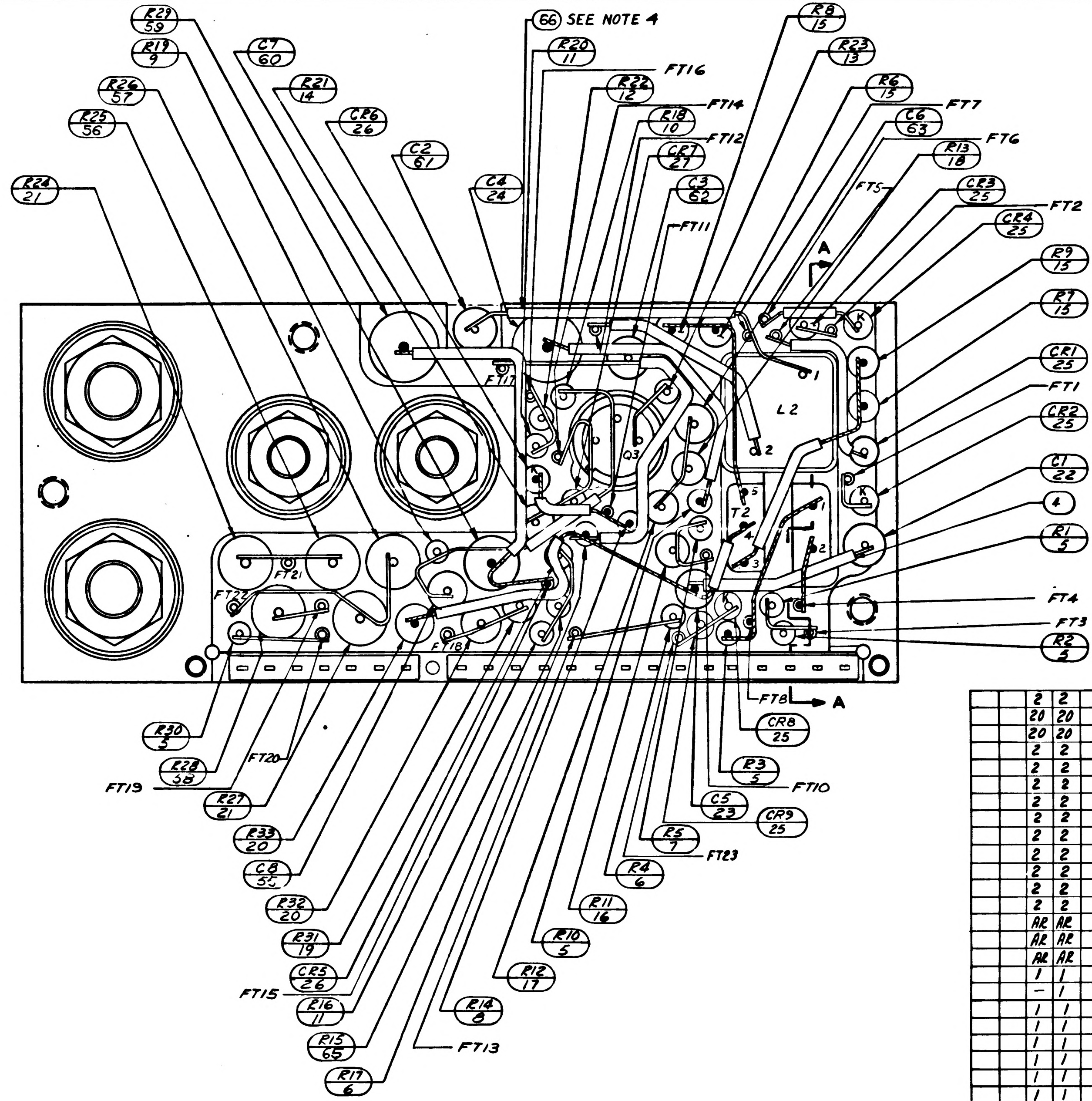
1.540
3
1
SEE NOTE 6
2
39
L1 36
L2 35
SEE NOTE 6
T2 37
T2 68
T1 38
40
41
53
SEE NOTE 7
.000
.015
52
SEE NOTE 7
64
.000
.015
.000
.030 23 PLACES
SEE NOTE 8
.000
.005
.230 MAX UPPER LEVEL
SEE NOTE 6
.000
.015 2 PLACES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R19 9
C7 60
R21 14
CR6 26
R26 57
R25 56
C2 61
R24 21
C4 24
66 SEE NOTE 4
R20 11
R22 12
FT16
R18 10
FT14
CR7 27
FT12
C3 62
FT11
R8 15
R23 13
R6 13
FT7
C6 63
R13 18
FT6
FT5
CR3 25
CR4 25
FT2
A
R9 13
R7 13
CR1 25
FT1
CR2 25
C1 22
4
R1 5
FT4
FT3
R2 5
FT8
A
CR8 25
FT17
L1
L2
Q1
Q2
Q3
T2
FT21
FT22
FT18
FT20
FT19
R30 5
R28 58
R27 21
R33 20
C8 55
R32 20
R31 19
CR5 26
FT15
R16 11
R15 65
R17 6
R14 8
FT13
R12 17
R10 5
R11 16
R4 6
R5 7
FT23
C5 23
CR9 25
R3 5
FT10

NOTES:

1. INTEPPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTION TO BE MADE BY WELDING PER ND 1002005.
3. SOLDER PER ND 1002071.
4. USE MIL-I-631, TYPE F, FORM U, GRADE C, CLASS I, CATEGORY I, IN 2 PLACES ONLY - SECURE IN PLACE PER ND 1002004. TYPE I
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND IT'S RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .005. REMOVE ALL FLASHING.
7. ASSEMBLE PER ND1002136.
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD C
10. MOUNTING TORQUE FOR ITEM (50) 12 IN-LBS ± 2 IN-LBS.
11. MOUNTING TORQUE FOR ITEM (51) 24 IN-LBS ± 2 IN-LBS.
12. BROKEN PATHS ON ITEMS ② AND ③ INDICATES SLEEVING.
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
14. BOND ITEM 67 TO ITEM 53 PER ND 1002237.
15. ON ITEMS 2 & 3:
    - A. FT() INDICATES FEEDTHRU
    - B. K INDICATES CATHODE SIDE OF DIODE
    - C. C INDICATES COLLECTOR LEAD OF TRANSISTOR
    - D. B INDICATES BASE LEAD OF TRANSISTOR
    - E. E INDICATES EMITTER LEAD OF TRANSISTOR
    - F. C() INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR
    - G. B() INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
    - H. E() INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR
16. AT FINAL TEST C2 TO BE SELECTED FROM CHART PER ATP 1007040
17. PROCURE PER PS 1007040.
18. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN
19. FILL PER ND1002117
20. AR DENOTES AS REQUIRED
21. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.

C2 SEE NOTE 16	
PART NO.	VALUE UF
1010264 -1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
1010264 -6	.0027

QUANTITY REQUIRED				EFFECTIVITY	LIST OF PARTS AND MATERIALS		
		021	011		ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		1	1		69	1008540-7	GASKET, CONNECTOR MINIATURE
		1	–		68	1010710	TRANSFORMER
		╳	–		REF	1009534	SCHEMATIC, ELECTRICAL
		1	1		67	1008540-15	GASKET, CONNECTOR-MINIATURE
		–	╳		REF	1010024	SCHEMATIC, ELECTRICAL
		AR	AR		66	SEE NOTE 4	INSULATION SLEEVING NO.22
		1	1		65	1006750-75	RESISTOR
		AR	AR		64	1006776-20	INSULATION SLEEVING, ELECTRICAL
		1	1		63	1010279-9	CAPACITOR
		1	1		62	1010264-12	CAPACITOR
		1	1		61	SEE NOTE 16	CAPACITOR
		1	1		60	1010320-6	CAPACITOR
		1	1		59	1010389-94	RESISTOR, FIXED
		1	1		58	1010399-16	RESISTOR, FIXED
		1	1		57	1010389-47	RESISTOR, FIXED
		1	1		56	1010399-31	RESISTOR, FIXED
		1	1		55	1010279-228	CAPACITOR
		2	2		54	1008024-2	WASHER, INSULATOR
		20	20		53	1006775	INSULATOR
		20	20		52	1006782-5	CONTACT
		2	2		51	MS20341-416B	NUT
		2	2		50	MS20341-10B	NUT
		2	2		49	1008025-2	BUSHING, INSULATOR
		2	2		48	1008021-1	BUSHING, INSULATOR
		2	2		47	1008021-2	BUSHING, INSULATOR
		2	2		46	1008024-3	WASHER, INSULATOR
		2	2		45	1008024-4	WASHER, INSULATOR
		2	2		44	1008071-5	WASHER, FLAT
		2	2		43	1008024-1	WASHER, INSULATOR
		2	2		42	1008071-2	WASHER, FLAT
		AR	AR		41	1006757-8	WIRE, ELECTRICAL
		AR	AR		40	1006776-22	INSULATION SLEEVING, ELECTRICAL
		AR	AR		39	1006757-1	WIRE, ELECTRICAL
		1	1		38	1010328	TRANSFORMER
		–	1		37	1010327	TRANSFORMER
		1	1		36	1010277-9	REACTOR
		1	1		35	1010277-8	REACTOR
		1	1		34	1010273-1	TRANSISTOR
		1	1		33	1010437	TRANSISTOR
		1	1		32	1010271	TRANSISTOR
		1	1		31	1010269-1	TRANSISTOR
		1	1		30	1010270	TRANSISTOR
		1	1		29	1010345-1	TRANSISTOR
		1	1		28	1010252-1	TRANSISTOR
		1	1		27	1010286-9	SEMICONDUCTOR DEVICE, DIODE
		2	2		26	1010372-15	SEMICONDUCTOR DEVICE, DIODE
		6	6		25	1010392-1	SEMICONDUCTOR DEVICE, DIODE
		1	1		24	1010320-11	CAPACITOR, FIXED
		1	1		23	1010279-220	CAPACITOR, FIXED
		1	1		22	1010264-9	CAPACITOR, FIXED
		2	2		21	1010278-39	RESISTOR, FIXED
		2	2		20	1010377-66	RESISTOR, FIXED
		1	1		19	1010364-43	RESISTOR, FIXED
		1	1		18	1010364-719	RESISTOR, FIXED
		1	1		17	1010364-465	RESISTOR, FIXED
		1	1		16	1010364-635	RESISTOR, FIXED
		4	4		15	1010364-443	RESISTOR, FIXED
		1	1		14	1006760-35	RESISTOR, FIXED
		1	1		13	1006750-40	RESISTOR, FIXED
		1	1		12	1006750-53	RESISTOR, FIXED
		2	2		11	1006750-51	RESISTOR, FIXED
		1	1		10	1006750-70	RESISTOR, FIXED
		1	1		9	1006750-44	RESISTOR, FIXED
		1	1		8	1006750-60	RESISTOR, FIXED
		1	1		7	1006750-48	RESISTOR, FIXED
		2	2		6	1006750-80	RESISTOR, FIXED
		5	5		5	1006750-73	RESISTOR, FIXED
		AR	AR		4	1006776-21	INSULATION SLEEVING, ELECTRICAL
		1	1		3	1015687	INSULATOR
		1	1		2	1015686	INSULATOR
		1	1		1	1015685	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + – DECIMALS XXX ± .005 XX ± .02 ANGLES + –
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN S. Agne DATE 24 SEP 64
CHECKED A. Wenrich 26 SEP 64
APPROVAL
APPROVAL
NASA APPROVAL 10-20-64
MIT APPROVAL

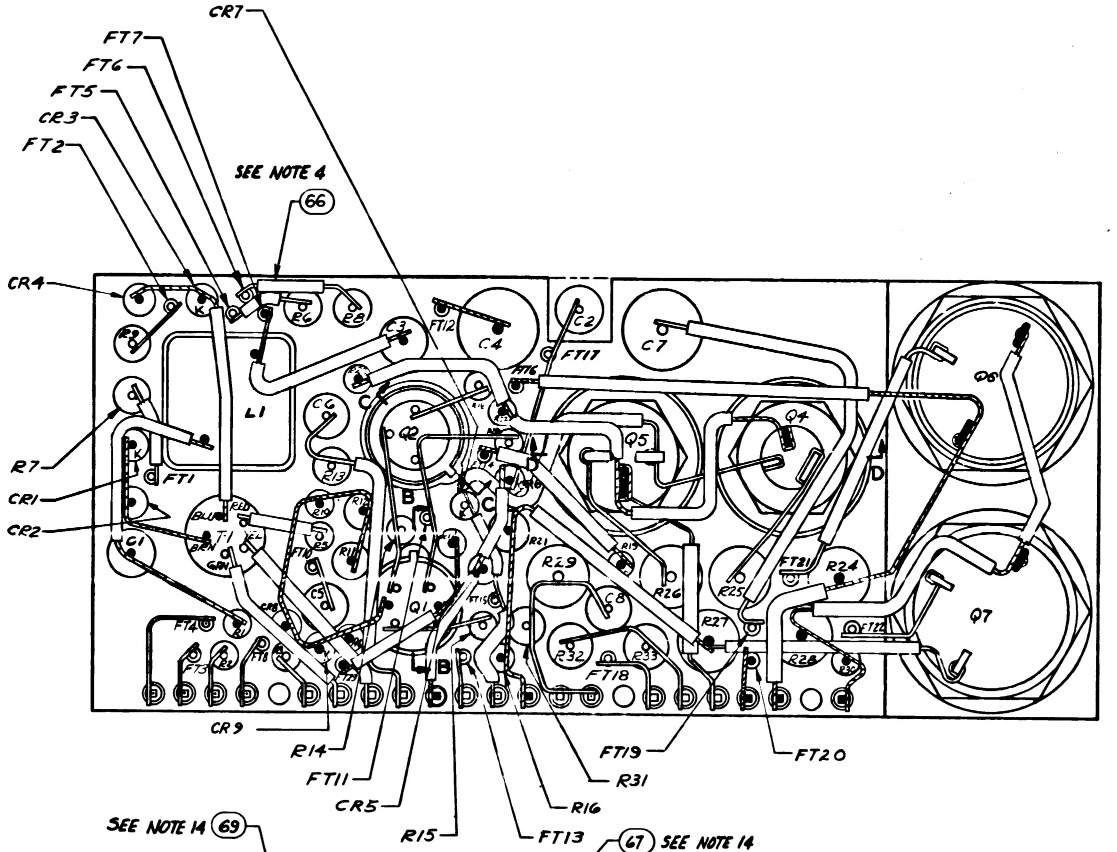
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL SERVO AMPLIFIER
MODULE ASSY

CODE IDENT NO.
SIZE E
1007540
SCALE 4:1
SHEET 1 OF 2

1007540 A

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR-17354		12-MAR 65	V G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FT7
FT6
FT5
CR3
FT2
SEE NOTE 4
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CR4
R7
CR1
CR2
L1
C4
C2
C7
Q2
Q5
Q4
Q6
Q7
Q1
FT1
FT12
FT16
FT17
FT14
FT18
FT21
C1
R29
R24
R25
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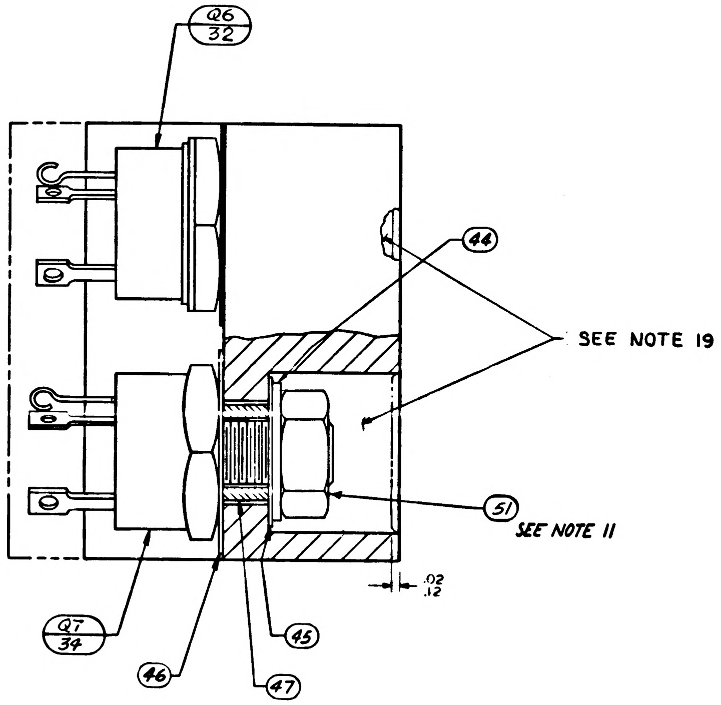
FT13
R16
R31
FT19
FT20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SEE NOTE 19
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SEE NOTE 11
.02
.12
Q7
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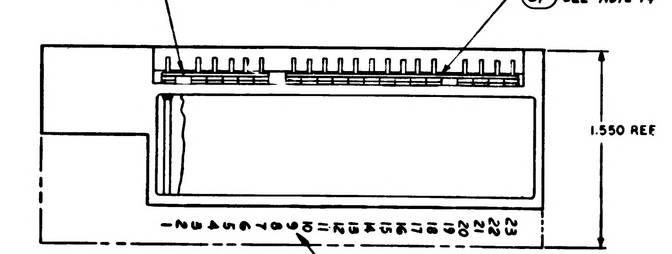
46
47


SEE NOTE 14
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67
SEE NOTE 14
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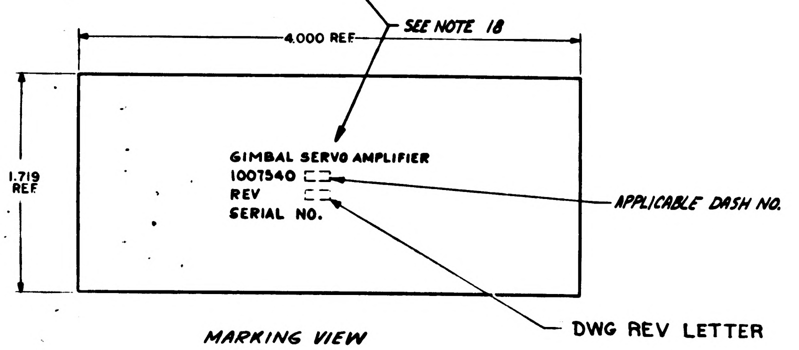
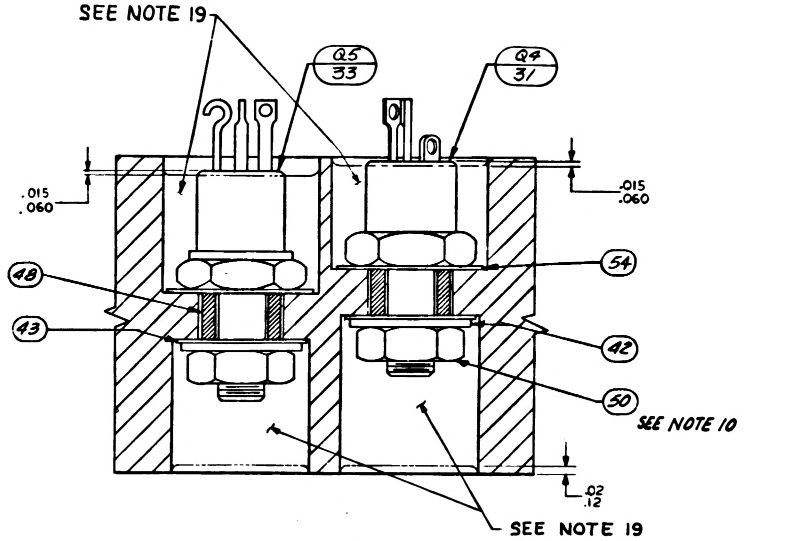

SEE NOTE 18
4.000 REF
1.719 REF
GIMBAL SERVO AMPLIFIER
1007540
REV
SERIAL NO.
APPLICABLE DASH NO.
DWG REV LETTER

MARKING VIEW
SCALE - 2:1


SEE NOTE 19
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Q4
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42
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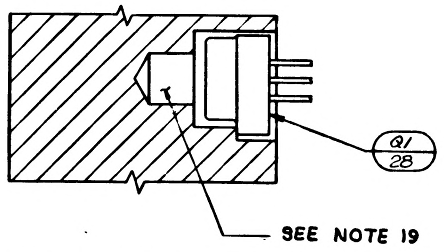
SEE NOTE 10
.02
.12
SEE NOTE 19

PARTIAL SECTION D-D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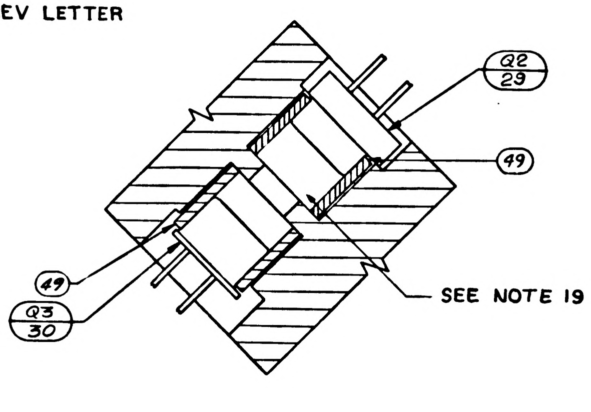
SEE NOTE 19

PARTIAL SECTION B-B


Q2
29
49
49
Q3
30
SEE NOTE 19

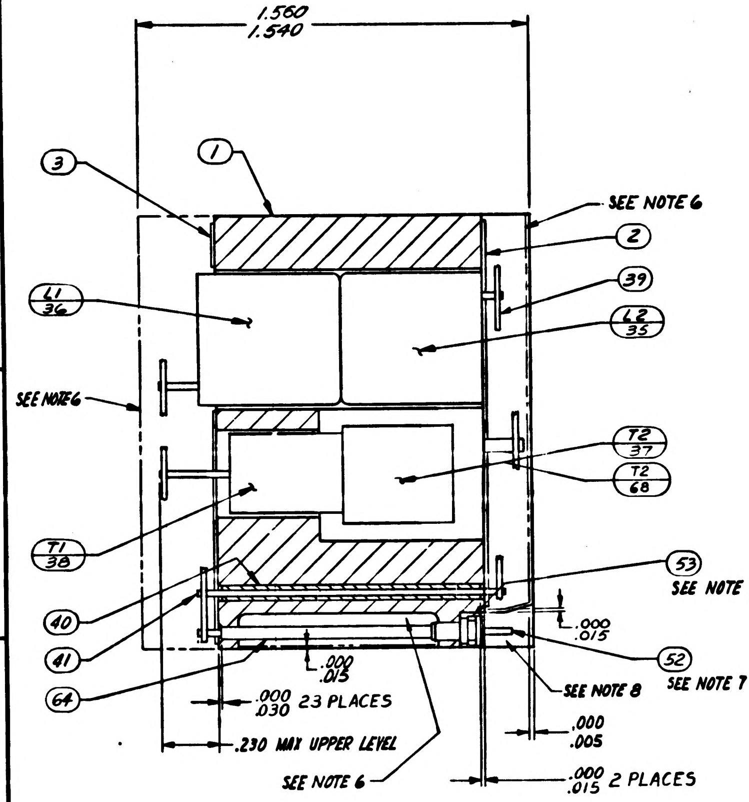
PARTIAL SECTION C-C

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES + — + — + — - — - — - —	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	ACSP PN	
	DRAWN S Agne DATE 24 SEP 64 CHECKED 26 SEP 64 APPROVAL APPROVAL 10/19/64	GIMBAL SERVO AMPLIFIER MODULE ASSY
DO NOT SCALE THIS DRAWING		
MATERIAL	NASA APPROVAL 10-20-64	CODE IDENT NO. SIZE E 1007540
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 4:1 SHEET 2 OF 2

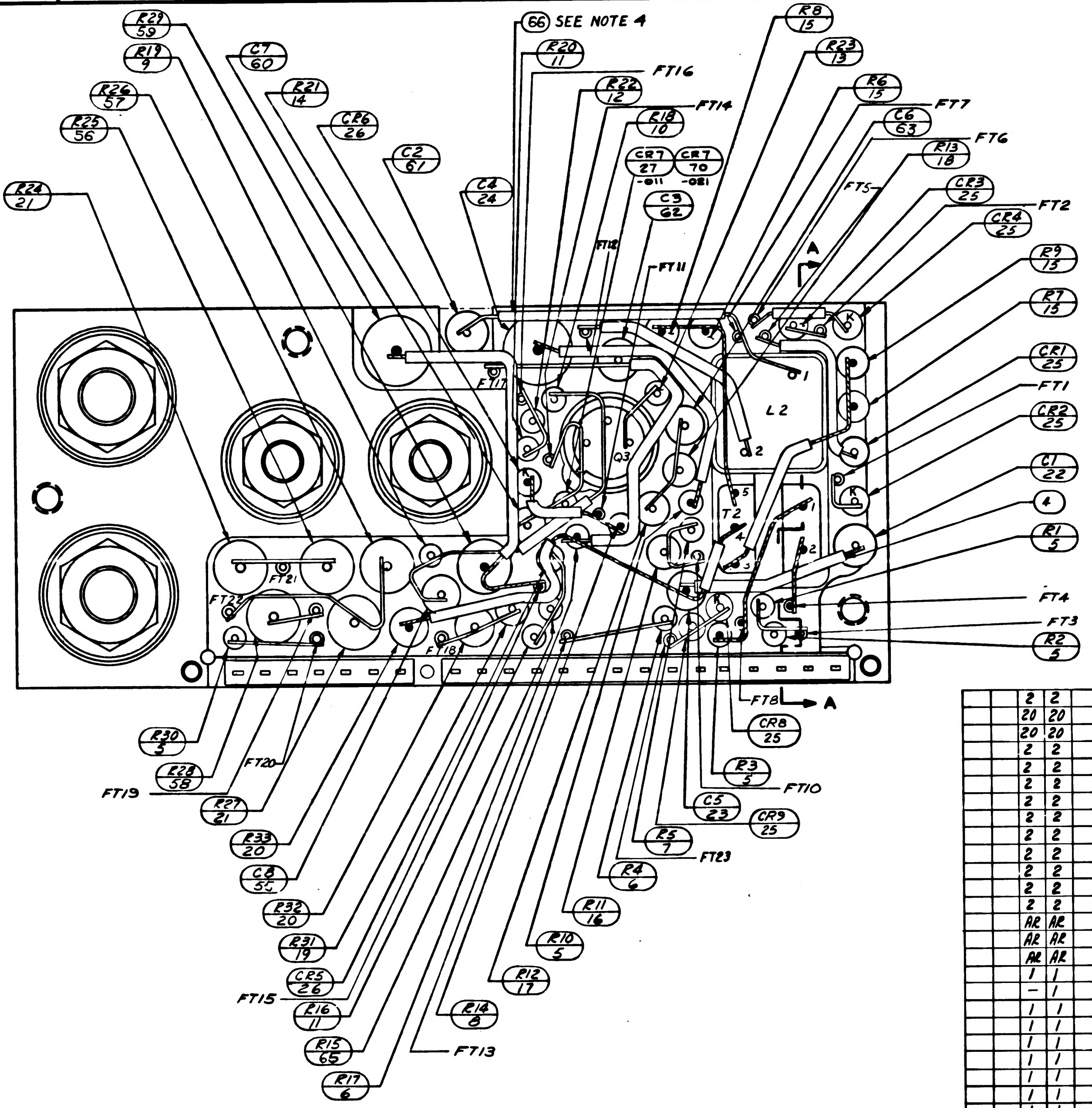
1007540 A

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
A	C-6	REVISED PER TDRR17354		12-MAR-65	M.G. / CP
B		REVISED PER TDRR 17610		25 MAR 65	HTO / C7f

REVISIONS



1.560
1.540
3
1
SEE NOTE 6
2
39
L1 36
L2 35
SEE NOTE 6
T2 37
T2 68
T1 38
53
SEE NOTE 7
40
41
64
.000
.015
52
SEE NOTE 7
.000
.013
.000
.030 23 PLACES
SEE NOTE 8
.000
.005
.230 MAX UPPER LEVEL
SEE NOTE 6
.000
.015 2 PLACES



R29 59
R19 9
R26 57
R25 56
R24 21
C7 60
R21 14
CR6 26
C2 61
C4 24
66 SEE NOTE 4
R20 11
FT16
R22 12
R18 10
FT14
CR7 27 -011
CR7 70 -021
C3 62
FT12
FT11
R8 15
R23 13
R6 15
FT7
C6 63
FT6
R13 18
FT5
CR3 25
CR4 25
FT2
A
R9 15
R7 15
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CR2 25
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Q3
T2
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CR8 25
R3 5
FT10
C5 23
CR9 25
R5 7
FT23
R4 6
R11 16
R10 5
R12 17
R14 8
FT13
R17 6
R15 65
R16 11
CR5 26
FT15
R31 19
R32 20
C8 55
R33 20
R27 21
FT20
R28 58
R30 5
FT19

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTION TO BE MADE BY WELDING PER ND 1002005.
3. SOLDER PER ND 1002071.
4. USE MIL-I-631, TYPE F, FORM U, GRADE C, CLASS I, CATEGORY I, IN 2 PLACES ONLY - SECURE IN PLACE PER ND 1002004. TYPE I
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND IT'S RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .005. REMOVE ALL FLASHING.
7. ASSEMBLE PER ND1002136.
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD C
10. MOUNTING TORQUE FOR ITEM (50) 12 IN-LBS ± 2 IN-LBS.
11. MOUNTING TORQUE FOR ITEM (51) 24 IN-LBS ± 2 IN-LBS.
12. BROKEN PATHS ON ITEMS ② AND ③ INDICATES SLEEVING.
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
14. BOND ITEM 67 TO ITEM 53 PER ND 1002237.
15. ON ITEMS 2 & 3:
    - A. FT( ) INDICATES FEEDTHRU
    - B. K INDICATES CATHODE SIDE OF DIODE
    - C. C INDICATES COLLECTOR LEAD OF TRANSISTOR
    - D. B INDICATES BASE LEAD OF TRANSISTOR
    - E. E INDICATES EMITTER LEAD OF TRANSISTOR
    - F. C( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR
    - G. B( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
    - H. E( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR
16. AT FINAL TEST C2 TO BE SELECTED FROM CHART PER ATP 1007040
17. PROCURE PER PS 1007040.
18. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN
19. FILL PER ND1002117
20. AR DENOTES AS REQUIRED
21. BOND A .25 MIN. WIDE PERIMETER OF THE TOP & BOTTOM INSULATORS TO THE HEATSINK & COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.

C2 SEE NOTE 16	
PART NO.	VALUE UF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
1010264-6	.0027

QUANTITY REQUIRED						LIST OF PARTS AND MATERIALS	
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		1	–		70	1010830-9	SEMICONDUCTOR DEVICE, DIODE
		1	1		69	1008540-7	GASKET, CONNECTOR MINIATURE
		1	–		68	1010710	TRANSFORMER
		X	–		REF	1009534	SCHEMATIC, ELECTRICAL
		1	1		67	1008540-15	GASKET, CONNECTOR-MINIATURE
		–	X		REF	1010024	SCHEMATIC, ELECTRICAL
		AR	AR		66	SEE NOTE 4	INSULATION SLEEVING NO.22
		1	1		65	1006750-75	RESISTOR
		AR	AR		64	1006776-20	INSULATION SLEEVING, ELECTRICAL
		1	1		63	1010279-9	CAPACITOR
		1	1		62	1010264-12	CAPACITOR
		1	1		61	SEE NOTE 16	CAPACITOR
		1	1		60	1010320-6	CAPACITOR
		1	1		59	1010389-94	RESISTOR, FIXED
		1	1		58	1010399-16	RESISTOR, FIXED
		1	1		57	1010389-47	RESISTOR, FIXED
		1	1		56	1010399-31	RESISTOR, FIXED
		1	1		55	1010279-228	CAPACITOR
		2	2		54	1008024-2	WASHER, INSULATOR
		20	20		53	1006775	INSULATOR
		20	20		52	1006782-5	CONTACT
		2	2		51	MS20341-416B	NUT
		2	2		50	MS20341-10B	NUT
		2	2		49	1008025-2	BUSHING, INSULATOR
		2	2		48	1008021-1	BUSHING, INSULATOR
		2	2		47	1008021-2	BUSHING, INSULATOR
		2	2		46	1008024-3	WASHER, INSULATOR
		2	2		45	1008024-4	WASHER, INSULATOR
		2	2		44	1008071-5	WASHER, FLAT
		2	2		43	1008024-1	WASHER, INSULATOR
		2	2		42	1008071-2	WASHER, FLAT
		AR	AR		41	1006757-8	WIRE, ELECTRICAL
		AR	AR		40	1006776-22	INSULATION SLEEVING, ELECTRICAL
		AR	AR		39	1006757-1	WIRE, ELECTRICAL
		1	1		38	1010328	TRANSFORMER
		–	1		37	1010327	TRANSFORMER
		1	1		36	1010277-9	REACTOR
		1	1		35	1010277-8	REACTOR
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		1	1		33	1010437	TRANSISTOR
		1	1		32	1010271	TRANSISTOR
		1	1		31	1010269-1	TRANSISTOR
		1	1		30	1010270	TRANSISTOR
		1	1		29	1010345-1	TRANSISTOR
		1	1		28	1010252-1	TRANSISTOR
		~~1~~	1		27	1010286-9	SEMICONDUCTOR DEVICE, DIODE
		2	2		26	1010372-15	SEMICONDUCTOR DEVICE, DIODE
		6	6		25	1010392-1	SEMICONDUCTOR DEVICE, DIODE
		1	1		24	1010320-11	CAPACITOR, FIXED
		1	1		23	1010279-220	CAPACITOR, FIXED
		1	1		22	1010264-9	CAPACITOR, FIXED
		2	2		21	1010278-39	RESISTOR, FIXED
		2	2		20	1010377-66	RESISTOR, FIXED
		1	1		19	1010364-43	RESISTOR, FIXED
		1	1		18	1010364-719	RESISTOR, FIXED
		1	1		17	1010364-465	RESISTOR, FIXED
		1	1		16	1010364-635	RESISTOR, FIXED
		4	4		15	1010364-443	RESISTOR, FIXED
		1	1		14	1006760-35	RESISTOR, FIXED
		1	1		13	1006750-40	RESISTOR, FIXED
		1	1		12	1006750-53	RESISTOR, FIXED
		2	2		11	1006750-51	RESISTOR, FIXED
		1	1		10	1006750-70	RESISTOR, FIXED
		1	1		9	1006750-44	RESISTOR, FIXED
		1	1		8	1006750-60	RESISTOR, FIXED
		1	1		7	1006750-48	RESISTOR, FIXED
		2	2		6	1006750-80	RESISTOR, FIXED
		5	5		5	1006750-73	RESISTOR, FIXED
		AR	AR		4	1006776-21	INSULATION SLEEVING, ELECTRICAL
		1	1		3	1015687	INSULATOR
		1	1		2	1015686	INSULATOR
		1	1		1	1015685	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ XXX ± .005 +
- XX ± .02 −
DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN S. Agne DATE 18 SEP 64
CHECKED A. Uenick 26 SEP 64
APPROVAL
APPROVAL
NASA APPROVAL 10-20-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL SERVO AMPLIFIER
MODULE ASSY

CODE IDENT NO.
SIZE E
1007540
SCALE 4:1
SHEET 1 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
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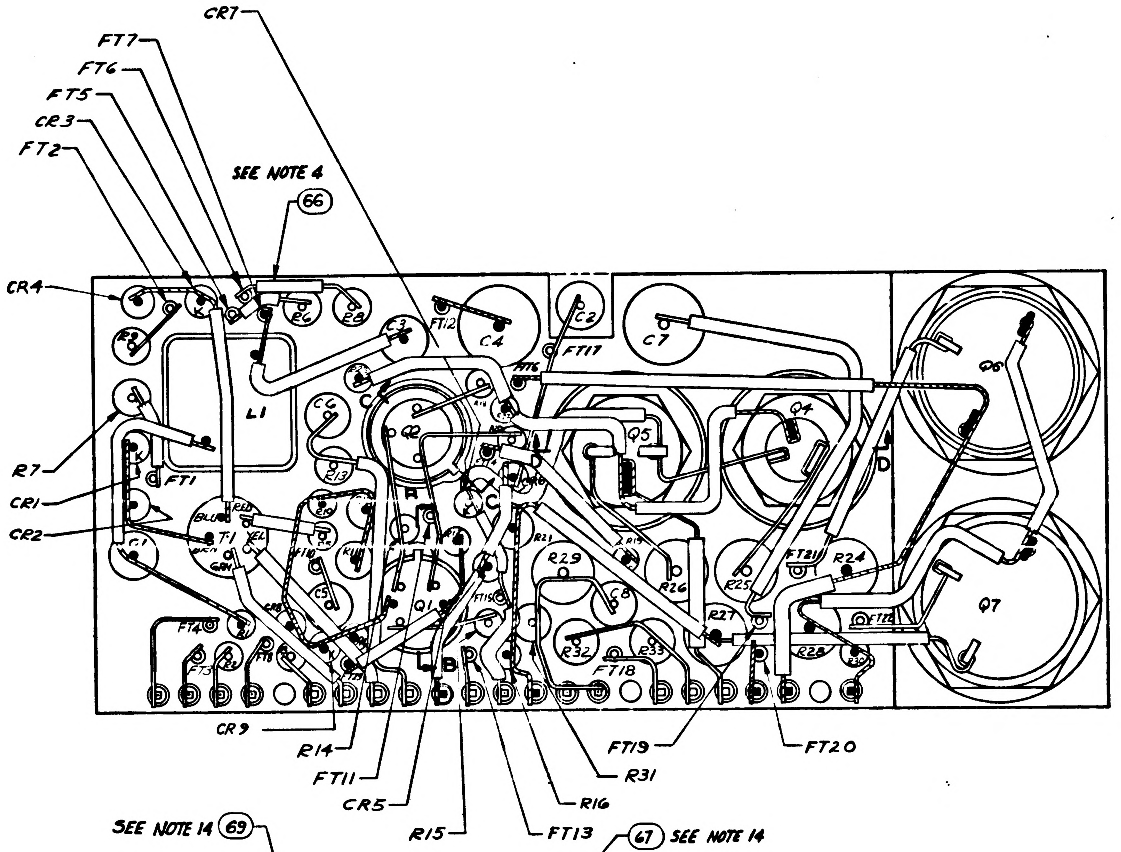
B		REVISED PER TDRR 17610		25 MAR 65	HTO / CEP



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FT5
CR3
FT2
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CR1
CR2
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Q2
Q4
Q5
Q6
Q7
FT12
FT17
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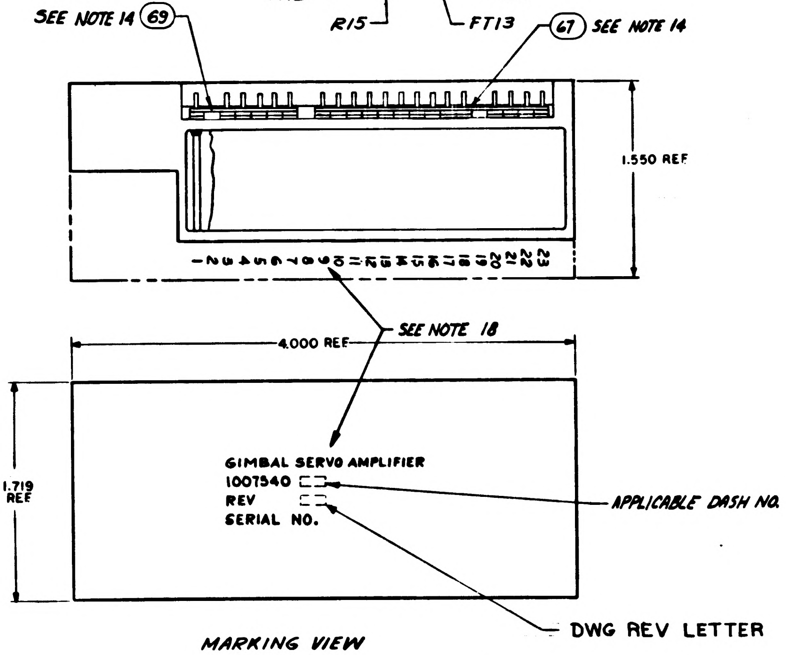
FT20



SEE NOTE 14
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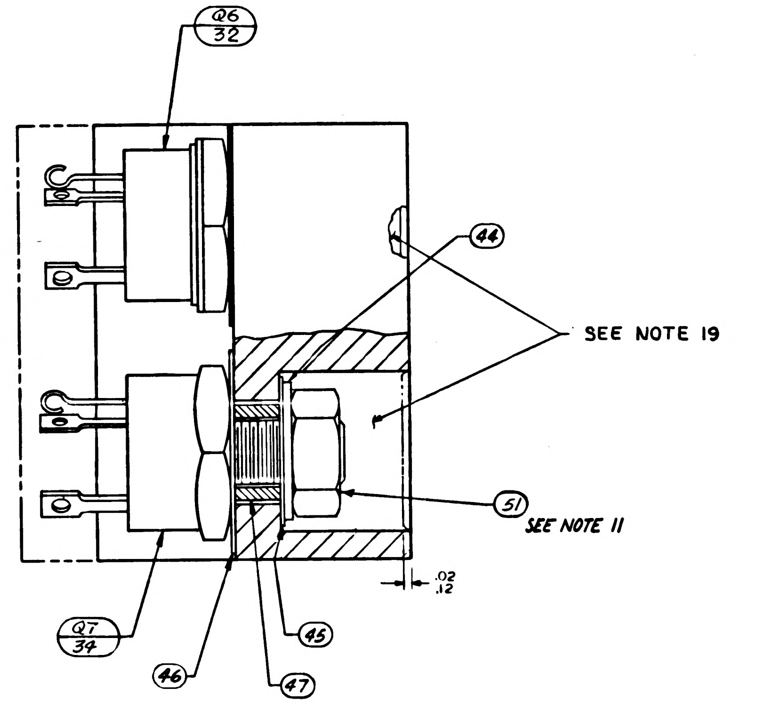
SEE NOTE 18
4.000 REF
1.719 REF
GIMBAL SERVO AMPLIFIER
1007540
REV
SERIAL NO.
APPLICABLE DASH NO.
DWG REV LETTER

MARKING VIEW
SCALE - 2:1



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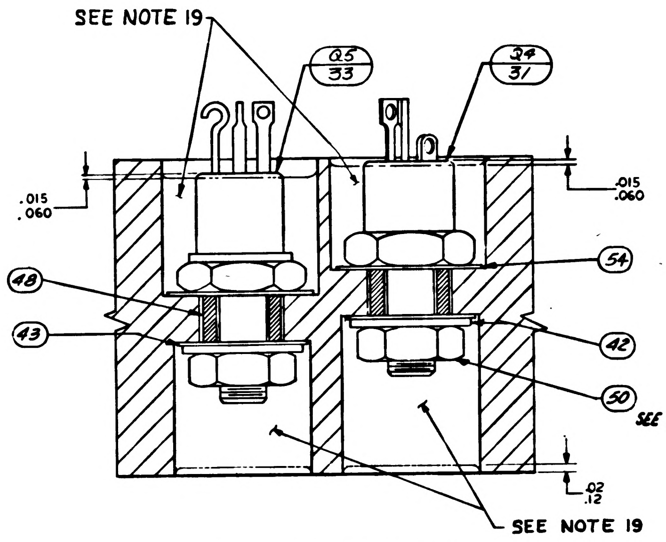

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SEE NOTE 10
.02
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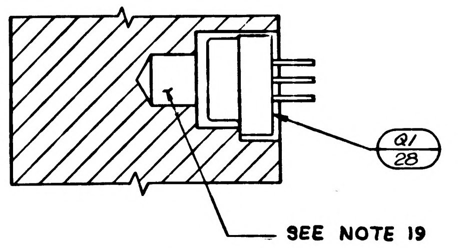
SEE NOTE 19

PARTIAL SECTION D-D



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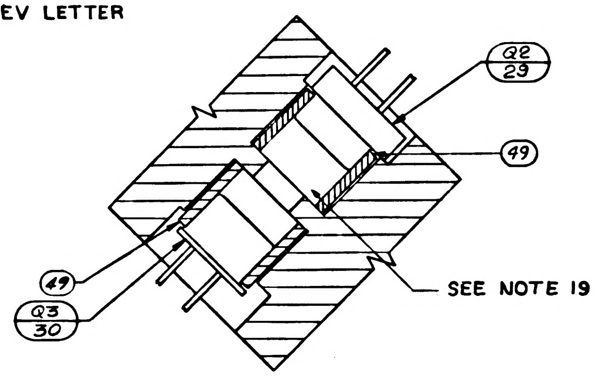
SEE NOTE 19

PARTIAL SECTION B-B



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Q3
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SEE NOTE 19

PARTIAL SECTION C-C

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

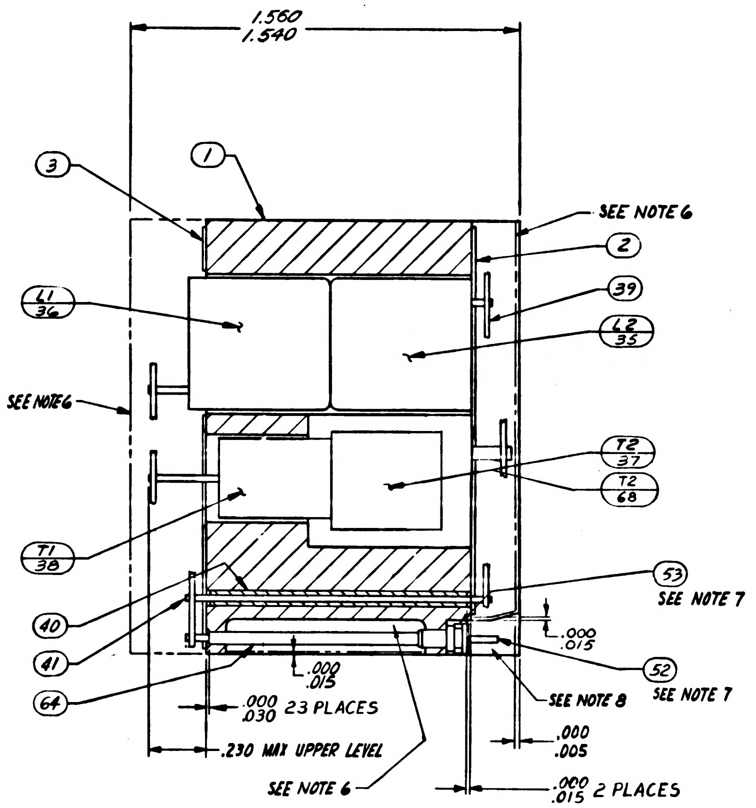
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 24 SEP 64
CHECKED 26 SEP 64
APPROVAL
APPROVAL 10/19/64
NASA APPROVAL 10-20-64
MIT APPROVAL 10/20/64

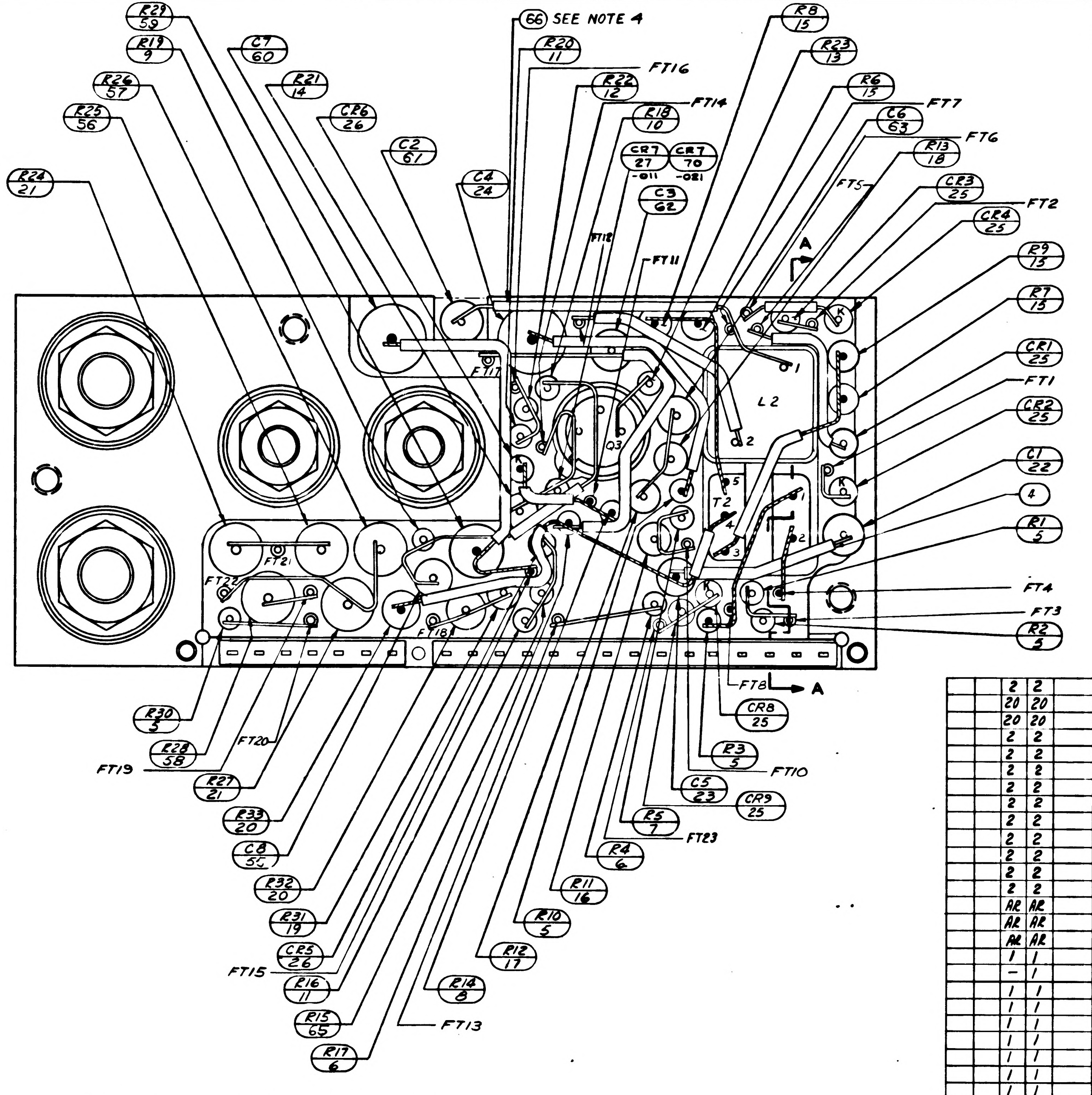
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL SERVO AMPLIFIER
MODULE ASSY

CODE IDENT NO.
SIZE E
1007540
SCALE 4:1
SHEET 2 OF 2

SYM	ZONE	DESCRIPTION REVISIONS 17638	CHG NO.	DATE	APPD
A	C-6	REVISED PER TDRR17354		12-MAR-65	M.G. / CP
B		REVISED PER TDRR 17610		25 MAR 65	HTQ / CP
C		REVISED PER TDRR 19453		3-JUN-65	/ EF





NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTION TO BE MADE BY WELDING PER ND 1002005.
3. SOLDER PER ND 1002071.
4. USE MIL-I-631, TYPE F, FORM U, GRADE C, CLASS I, CATEGORY I, IN 2 PLACES ONLY - SECURE IN PLACE PER ND 1002004. TYPE I
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND IT'S RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .005. REMOVE ALL FLASHING.
7. ASSEMBLE PER ND1002136.
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD C
10. MOUNTING TORQUE FOR ITEM ㊿ 12 IN-LBS ± 2 IN-LBS.
11. MOUNTING TORQUE FOR ITEM (51) 24 IN-LBS ± 2 IN-LBS.
12. BROKEN PATHS ON ITEMS ② AND ③ INDICATES SLEEVING.
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
14. BOND ITEM 67 TO ITEM 53 PER ND 1002237.
15. ON ITEMS 2 & 3:
    A. FT( ) INDICATES FEEDTHRU
    B. K INDICATES CATHODE SIDE OF DIODE
    C. C INDICATES COLLECTOR LEAD OF TRANSISTOR
    D. B INDICATES BASE LEAD OF TRANSISTOR
    E. E INDICATES EMITTER LEAD OF TRANSISTOR
    F. C( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR
    G. B( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
    H. E( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR
16. AT FINAL TEST C2 TO BE SELECTED FROM CHART PER ATP 1007040
17. PROCURE PER PS 1007040.
18. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN
19. FILL PER ND1002117
20. AR DENOTES AS REQUIRED
21. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP & BOTTOM INSULATORS TO THE HEATSINK & COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
22. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		021	011			LIST OF PARTS AND MATERIALS	
		1	–		70	1010830-9	SEMICONDUCTOR DEVICE, DIODE
		1	1		69	1008540-7	GASKET, CONNECTOR MINIATURE
		1	–		68	1010710	TRANSFORMER
		╳	–		REF	1009534	SCHEMATIC, ELECTRICAL
		1	1		67	1008540-15	GASKET, CONNECTOR-MINIATURE
		–	╳		REF	1010024	SCHEMATIC, ELECTRICAL
		AR	AR		66	SEE NOTE 4	INSULATION SLEEVING NO. 22
		1	1		65	1006750-75	RESISTOR
		AR	AR		64	1006776-20	INSULATION SLEEVING, ELECTRICAL
		1	1		63	1010279-9	CAPACITOR
		1	1		62	1010264-12	CAPACITOR
		1	1		61	SEE NOTE 16	CAPACITOR
		1	1		60	1010320-6	CAPACITOR
		1	1		59	1010389-94	RESISTOR, FIXED
		1	1		58	1010399-16	RESISTOR, FIXED
		1	1		57	1010389-47	RESISTOR, FIXED
		1	1		56	1010399-31	RESISTOR, FIXED
		1	1		55	1010279-228	CAPACITOR

C2 SEE NOTE 16	
PART NO.	VALUE UF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
1010264-6	.0027

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		021	011			LIST OF PARTS AND MATERIALS	
		2	2		54	1008024-2	WASHER, INSULATOR
		20	20		53	1006775	INSULATOR
		20	20		52	1006782-5	CONTACT
		2	2		51	MS20341-416B	NUT
		2	2		50	MS20341-10B	NUT
		2	2		49	1008025-2	BUSHING, INSULATOR
		2	2		48	1008021-1	BUSHING, INSULATOR
		2	2		47	1008021-2	BUSHING, INSULATOR
		2	2		46	1008024-3	WASHER, INSULATOR
		2	2		45	1008024-4	WASHER, INSULATOR
		2	2		44	1008071-5	WASHER, FLAT
		2	2		43	1008024-1	WASHER, INSULATOR
		2	2		42	1008071-2	WASHER, FLAT
		AR	AR		41	1006757-8	WIRE, ELECTRICAL
		AR	AR		40	1006776-22	INSULATION SLEEVING, ELECTRICAL
		AR	AR		39	1006757-1	WIRE, ELECTRICAL
		1	1		38	1010328	TRANSFORMER
		–	1		37	1010327	TRANSFORMER
		1	1		36	1010277-9	REACTOR
		1	1		35	1010277-8	REACTOR
		1	1		34	1010273-1	TRANSISTOR
		1	1		33	1010437	TRANSISTOR
		1	1		32	1010271	TRANSISTOR
		1	1		31	1010269-1	TRANSISTOR
		1	1		30	1010270	TRANSISTOR
		1	1		29	1010345-1	TRANSISTOR
		1	1		28	1010252-1	TRANSISTOR
		~~1~~	1		27	1010286-9	SEMICONDUCTOR DEVICE, DIODE
		2	2		26	1010372-15	SEMICONDUCTOR DEVICE, DIODE
		6	6		25	1010392-1	SEMICONDUCTOR DEVICE, DIODE
		1	1		24	1010320-11	CAPACITOR, FIXED
		1	1		23	1010279-220	CAPACITOR, FIXED
		1	1		22	1010264-9	CAPACITOR, FIXED
		2	2		21	1010278-39	RESISTOR, FIXED
		2	2		20	1010377-66	RESISTOR, FIXED
		1	1		19	1010364-43	RESISTOR, FIXED
		1	1		18	1010364-719	RESISTOR, FIXED
		1	1		17	1010364-465	RESISTOR, FIXED
		1	1		16	1010364-635	RESISTOR, FIXED
		4	4		15	1010364-443	RESISTOR, FIXED
		1	1		14	1006760-35	RESISTOR, FIXED
		1	1		13	1006750-40	RESISTOR, FIXED
		1	1		12	1006750-53	RESISTOR, FIXED
		2	2		11	1006750-51	RESISTOR, FIXED
		1	1		10	1006750-70	RESISTOR, FIXED
		1	1		9	1006750-44	RESISTOR, FIXED
		1	1		8	1006750-60	RESISTOR, FIXED
		1	1		7	1006750-48	RESISTOR, FIXED
		2	2		6	1006750-80	RESISTOR, FIXED
		5	5		5	1006750-73	RESISTOR, FIXED
		AR	AR		4	1006776-21	INSULATION SLEEVING, ELECTRICAL
		1	1		3	1015687	INSULATOR
		1	1		2	1015686	INSULATOR
		1	1		1	1015685	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ANGLES ±
XXX ± .005
XX ± .02
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

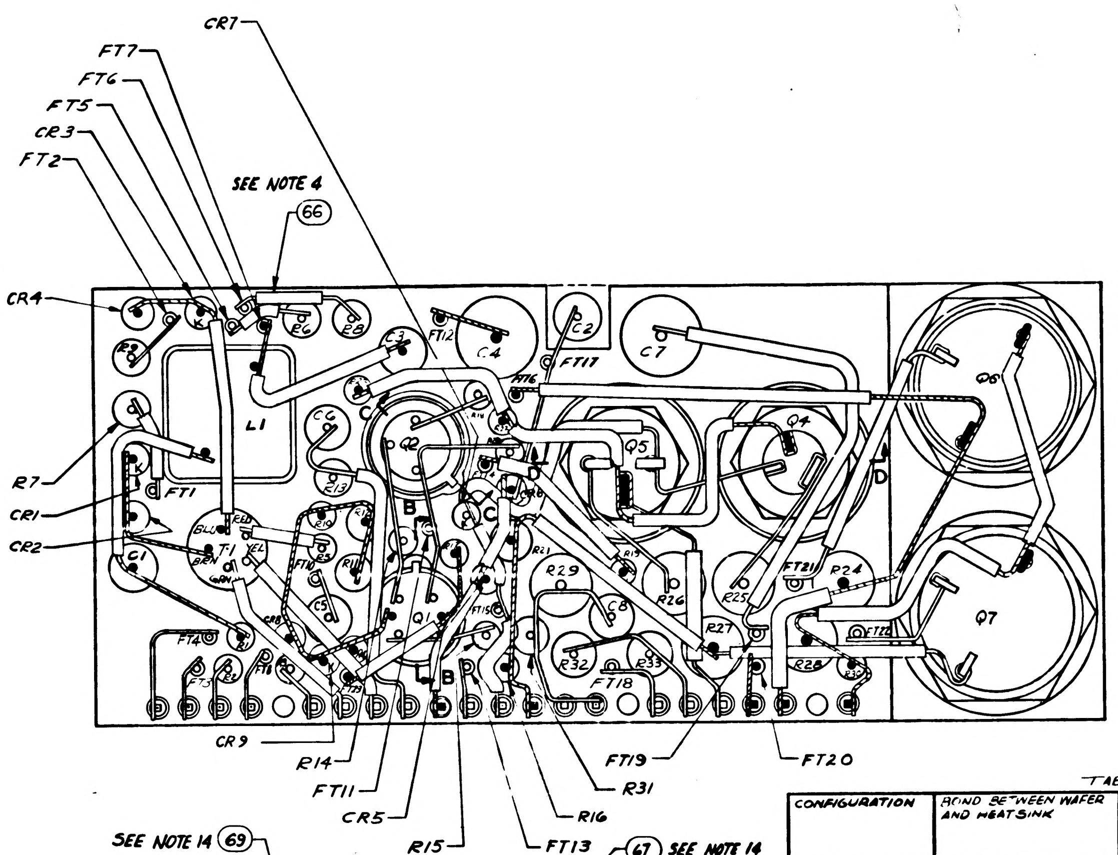
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN DATE 24SEP64
CHECKED 26 SEP 64
APPROVAL
APPROVAL 10/13/64
NASA APPROVAL 10-20-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL SERVO AMPLIFIER
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007540
SCALE 4:1
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR-17354		12-MAR 65	M G. / CP
B		REVISED PER TDRR 17610		25 MAR 65	HTO / CP
C		REVISED PER TDRR 19453		2 Jun 65	JM / EF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SEE NOTE 4
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C6
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Q2
Q4
Q5
Q6
Q7
T1
B
C
D
FT1
FT12
FT16
FT17
FT18
FT21
FT22
R24
R25
R26
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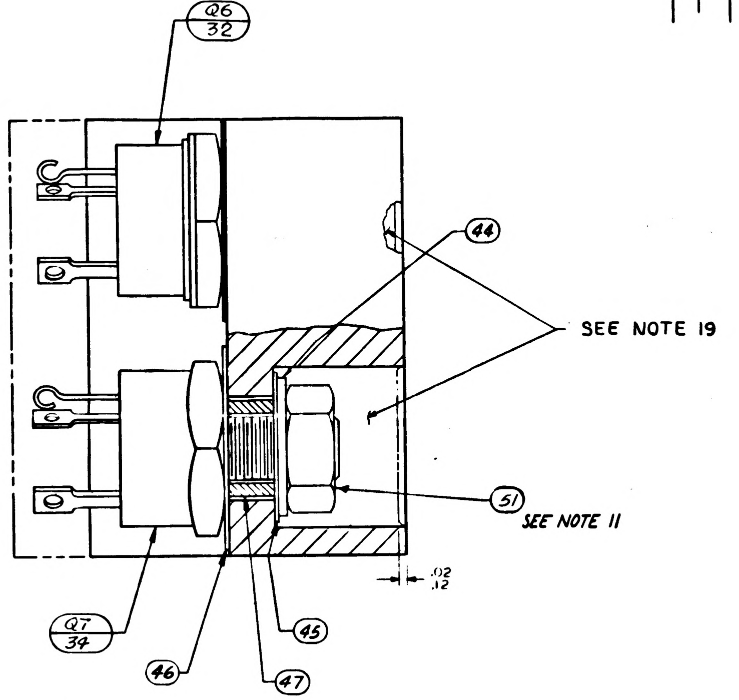
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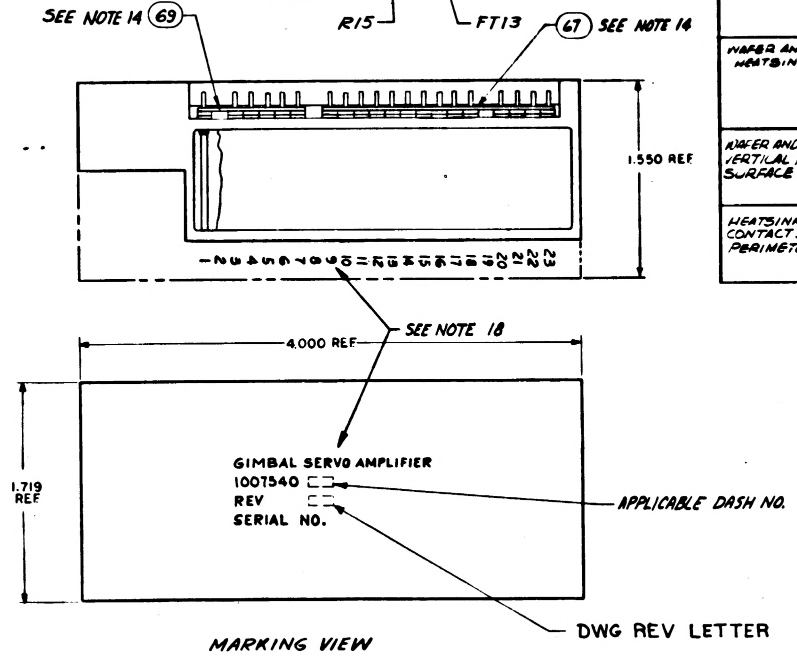
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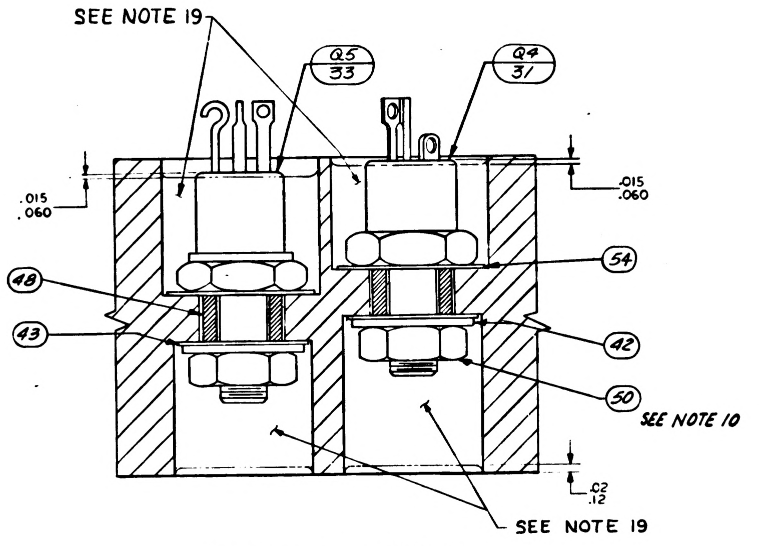
SEE NOTE 18
4.000 REF
1.719 REF
GIMBAL SERVO AMPLIFIER
1007540 ☐☐
REV ☐☐
SERIAL NO.
APPLICABLE DASH NO.
DWG REV LETTER

MARKING VIEW
SCALE - 2:1

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	.00% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE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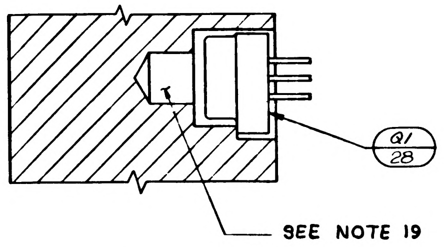
SEE NOTE 10
.02
.12
SEE NOTE 19

PARTIAL SECTION D-D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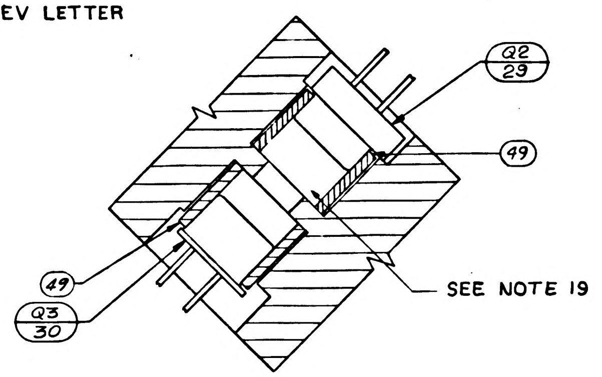
SEE NOTE 19

PARTIAL SECTION B-B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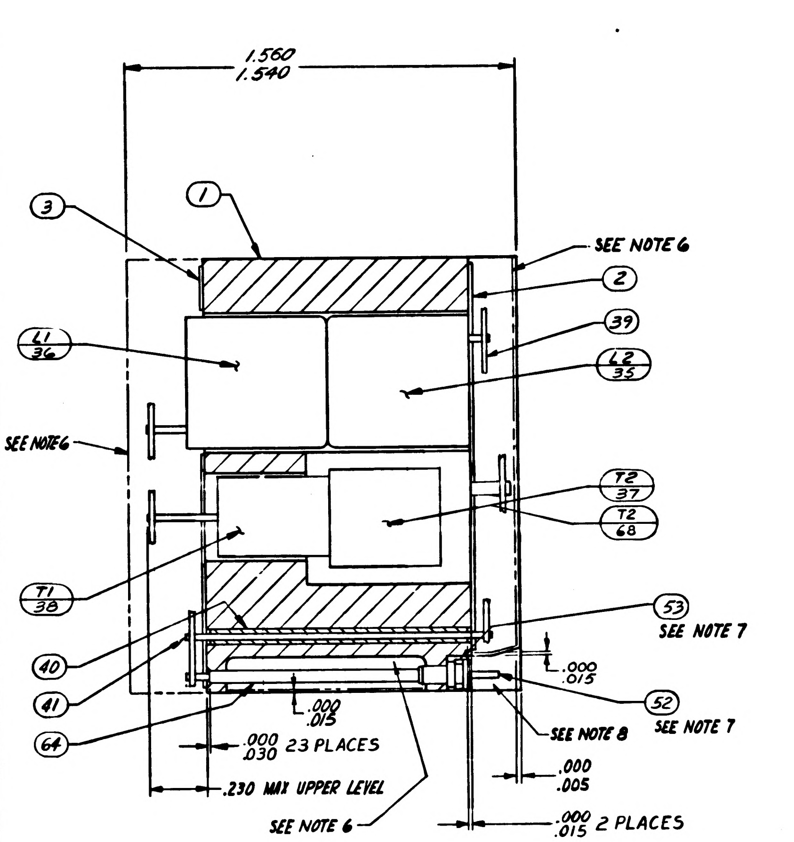
SEE NOTE 19

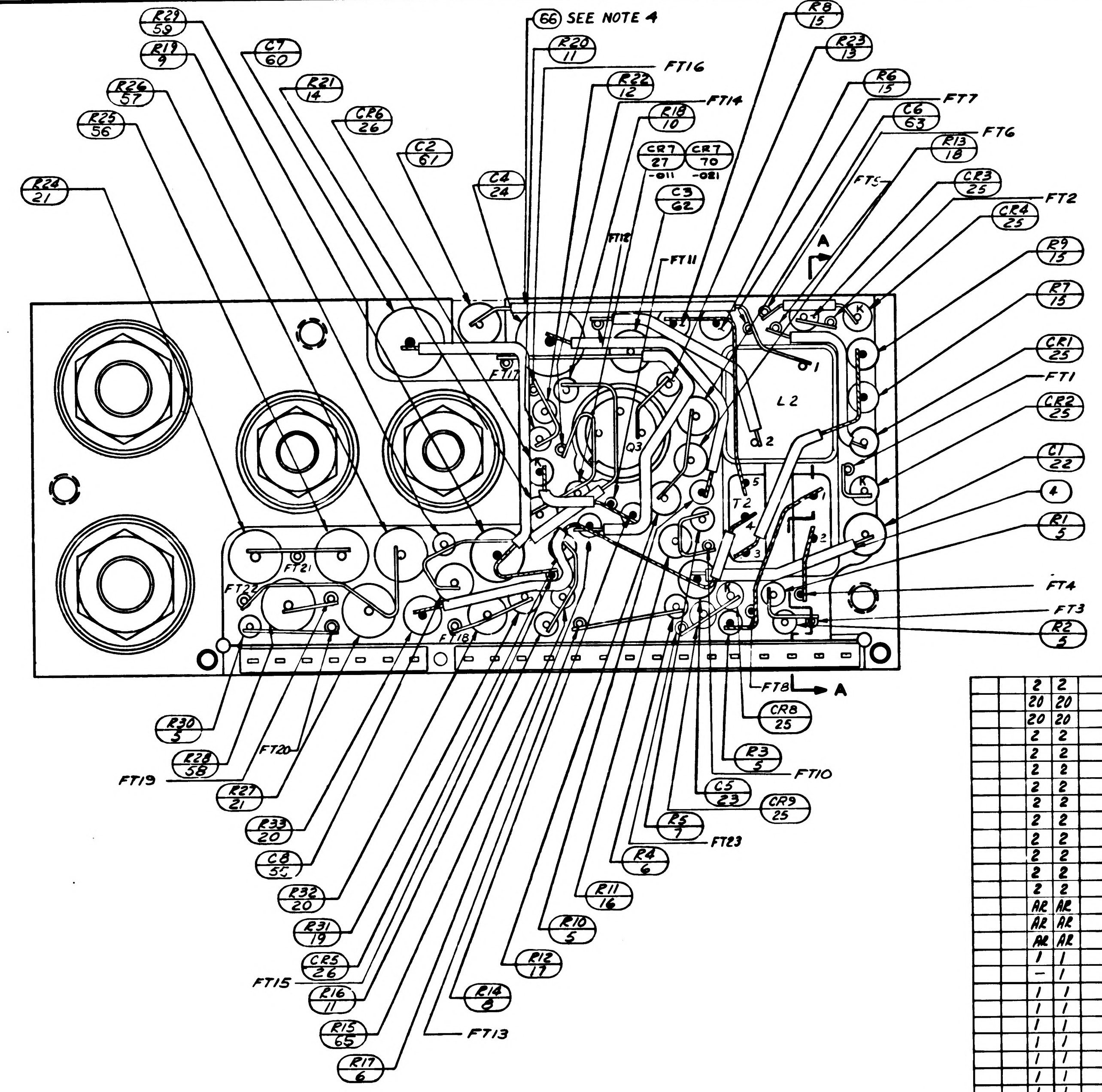
PARTIAL SECTION C-C

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± — ± — ± —	M I T INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN S Agne DATE 24 SEP 64 CHECKED A. Udovich 26 SEP 64 APPROVAL APPROVAL	GIMBAL SERVO AMPLIFIER MODULE ASSY
MATERIAL	NASA APPROVAL W. King 10-20-64	CODE IDENT NO. 80230 | SIZE E | 1007540
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 4:1 | SHEET 2 OF 2

1007540 C

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A	C-6	REVISED PER TDRR17354		12-MAR-65	MG / CP
B		REVISED PER TDRR 17610		25 MAR 65	HTO / JJF
C		REVISED PER TDRR 19453		3-JUN-65	
D		REVISED PER TDRR 19506		65	





NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTION TO BE MADE BY WELDING PER ND 1002005.
3. SOLDER PER ND 1002071.
4. USE MIL-I-631, TYPE F, FORM U, GRADE C, CLASS I, CATEGORY I, IN 2 PLACES ONLY - SECURE IN PLACE PER ND 1002004. TYPE I
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND IT'S RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .005. REMOVE ALL FLASHING.
7. ASSEMBLE PER ND1002136.
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD H.
10. MOUNTING TORQUE FOR ITEM (50) 12 IN-LBS ± 2 IN-LBS.
11. MOUNTING TORQUE FOR ITEM (51) 24 IN-LBS ± 2 IN-LBS.
12. BROKEN PATHS ON ITEMS ② AND ③ INDICATES SLEEVING.
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
14. BOND ITEM 67 TO ITEM 53 PER ND 1002237.
15. ON ITEMS 2 & 3:
    - A. FT( ) INDICATES FEEDTHRU
    - B. K INDICATES CATHODE SIDE OF DIODE
    - C. C INDICATES COLLECTOR LEAD OF TRANSISTOR
    - D. B INDICATES BASE LEAD OF TRANSISTOR
    - E. E INDICATES EMITTER LEAD OF TRANSISTOR
    - F. C( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR
    - G. B( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
    - H. E( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR
16. AT FINAL TEST C2 TO BE SELECTED FROM CHART PER ATP 1007040
17. PROCURE PER PS 1007040.
18. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN
19. FILL PER ND1002117
20. AR DENOTES AS REQUIRED
21. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP & BOTTOM INSULATORS TO THE HEATSINK & COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
22. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATINGS AS INDICATED IN TABLE I.~~
23. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
24. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

C2 SEE NOTE 16	
PART NO.	VALUE UF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
1010264-6	.0027

QUANTITY REQUIRED		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		1	–		70	1010830-9	SEMICONDUCTOR DEVICE, DIODE
		1	1		69	1008540-7	GASKET, CONNECTOR MINIATURE
		1	–		68	1010710	TRANSFORMER
		☒	–		REF	1009534	SCHEMATIC, ELECTRICAL
		1	1		67	1008540-15	GASKET, CONNECTOR-MINIATURE
		–	☒		REF	1010024	SCHEMATIC, ELECTRICAL
		AR	AR		66	SEE NOTE 4	INSULATION SLEEVING NO.22
		1	1		65	1006750-75	RESISTOR
		AR	AR		64	1006776-20	INSULATION SLEEVING, ELECTRICAL
		1	1		63	1010279-9	CAPACITOR
		1	1		62	1010264-12	CAPACITOR
		1	1		61	SEE NOTE 16	CAPACITOR
		1	1		60	1010320-6	CAPACITOR
		1	1		59	1010389-94	RESISTOR, FIXED
		1	1		58	1010399-16	RESISTOR, FIXED
		1	1		57	1010389-47	RESISTOR, FIXED
		1	1		56	1010399-31	RESISTOR, FIXED
		1	1		55	1010279-228	CAPACITOR

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		2	2		54	1008024-2	WASHER, INSULATOR
		20	20		53	1006775	INSULATOR
		20	20		52	1006782-5	CONTACT
		2	2		51	MS20341-416B	NUT
		2	2		50	MS20341-10B	NUT
		2	2		49	1008025-2	BUSHING, INSULATOR
		2	2		48	1008021-1	BUSHING, INSULATOR
		2	2		47	1008021-2	BUSHING, INSULATOR
		2	2		46	1008024-3	WASHER, INSULATOR
		2	2		45	1008024-4	WASHER, INSULATOR
		2	2		44	1008071-5	WASHER, FLAT
		2	2		43	1008024-1	WASHER, INSULATOR
		2	2		42	1008071-2	WASHER, FLAT
		AR	AR		41	1006757-8	WIRE, ELECTRICAL
		AR	AR		40	1006776-22	INSULATION SLEEVING, ELECTRICAL
		AR	AR		39	1006757-1	WIRE, ELECTRICAL
		1	1		38	1010328	TRANSFORMER
		–	1		37	1010327	TRANSFORMER
		1	1		36	1010277-9	REACTOR
		1	1		35	1010277-8	REACTOR
		1	1		34	1010273-1	TRANSISTOR
		1	1		33	1010437	TRANSISTOR
		1	1		32	1010271	TRANSISTOR
		1	1		31	1010269-1	TRANSISTOR
		1	1		30	1010270	TRANSISTOR
		1	1		29	1010345-1	TRANSISTOR
		1	1		28	1010252-1	TRANSISTOR
		≠	1		27	1010286-9	SEMICONDUCTOR DEVICE, DIODE
		2	2		26	1010372-15	SEMICONDUCTOR DEVICE, DIODE
		6	6		25	1010392-1	SEMICONDUCTOR DEVICE, DIODE
		1	1		24	1010320-11	CAPACITOR, FIXED
		1	1		23	1010279-220	CAPACITOR, FIXED
		1	1		22	1010264-9	CAPACITOR, FIXED
		2	2		21	1010278-39	RESISTOR, FIXED
		2	2		20	1010377-66	RESISTOR, FIXED
		1	1		19	1010364-43	RESISTOR, FIXED
		1	1		18	1010364-719	RESISTOR, FIXED
		1	1		17	1010364-465	RESISTOR, FIXED
		1	1		16	1010364-635	RESISTOR, FIXED
		4	4		15	1010364-443	RESISTOR, FIXED
		1	1		14	1006760-35	RESISTOR, FIXED
		1	1		13	1006750-40	RESISTOR, FIXED
		1	1		12	1006750-53	RESISTOR, FIXED
		2	2		11	1006750-51	RESISTOR, FIXED
		1	1		10	1006750-70	RESISTOR, FIXED
		1	1		9	1006750-44	RESISTOR, FIXED
		1	1		8	1006750-60	RESISTOR, FIXED
		1	1		7	1006750-48	RESISTOR, FIXED
		2	2		6	1006750-80	RESISTOR, FIXED
		5	5		5	1006750-73	RESISTOR, FIXED
		AR	AR		4	1006776-21	INSULATION SLEEVING, ELECTRICAL
		1	1		3	1015687	INSULATOR
		1	1		2	1015686	INSULATOR
		1	1		1	1015685	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ANGLES
XXX ± .005
XX ± .02
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN S. Agne DATE 24 SEP 64
CHECKED A. Ulrich 26 SEP 64
APPROVAL
APPROVAL 10/13/64
NASA APPROVAL 10-20-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL SERVO AMPLIFIER
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007540
SCALE 4:1
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR-17354		12-MAR-65	N.G. / CP
B		REVISED PER TDRR 17610		25 MAR 65	HTO / CEP
C		REVISED PER TDRR 19453		2-[illegible]-65	JM / [illegible]
D		REVISED PER TDRR 19506		[illegible] 65	[illegible]

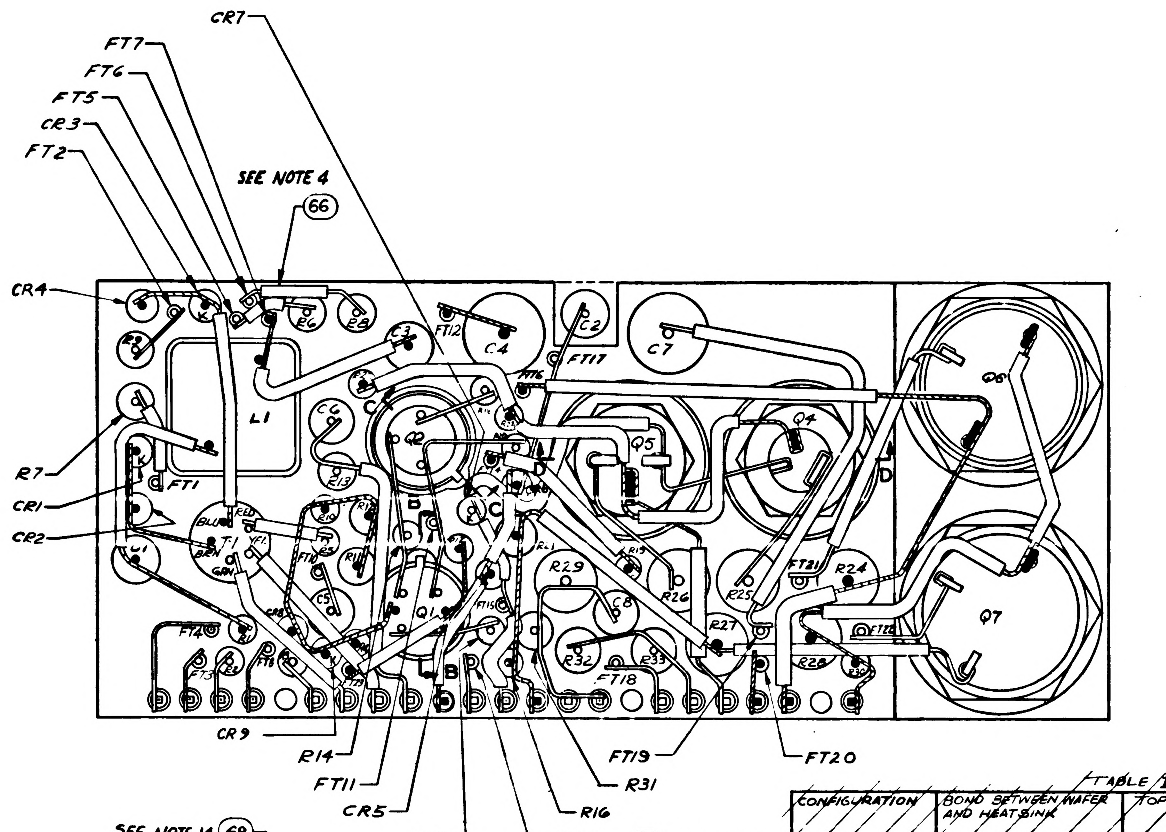
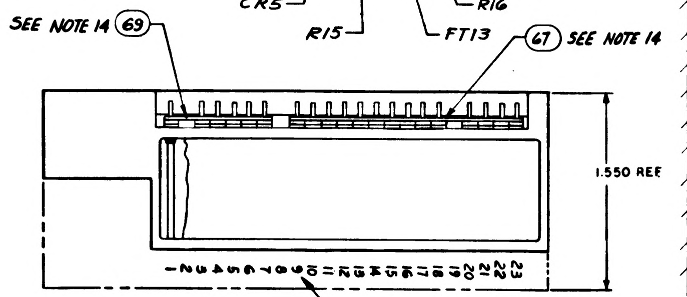
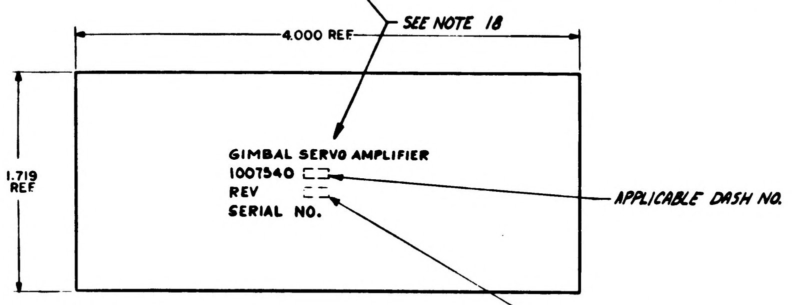

CR7
FT7
FT6
FT5
CR3
FT2
SEE NOTE 4
66
CR4
R7
CR1
CR2
L1
T1
C4
C2
C7
Q2
Q5
Q4
Q6
Q7
Q1
FT12
FT17
FT16
FT1
FT14
FT3
FT18
FT21
R29
R26
R25
R24
R27
R28
R32
R33
CR9
R14
FT11
CR5
R15
FT13
R16
R31
FT19
FT20

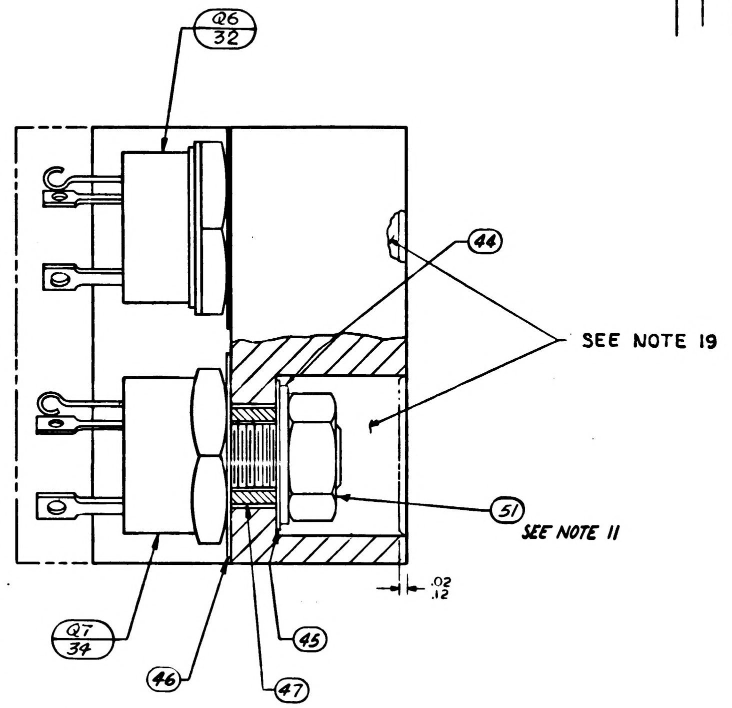
TABLE I

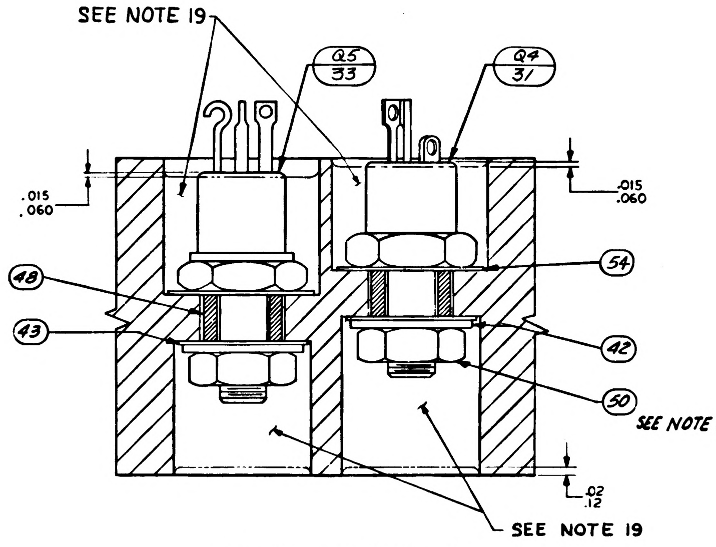
CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE


SEE NOTE 14
69
67
SEE NOTE 14
1.550 REF
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

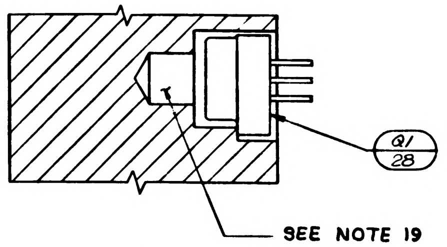

SEE NOTE 18
4.000 REF
1.719 REF
GIMBAL SERVO AMPLIFIER
1007540
REV
SERIAL NO.
APPLICABLE DASH NO.
DWG REV LETTER

MARKING VIEW
SCALE - 2:1


Q6
32
44
SEE NOTE 19
51
SEE NOTE 11
.02
.12
Q7
34
46
47
45


SEE NOTE 19
Q5
33
Q4
31
.015
.060
.015
.060
48
43
54
42
50
SEE NOTE 10
.02
.12
SEE NOTE 19

PARTIAL SECTION D-D


Q1
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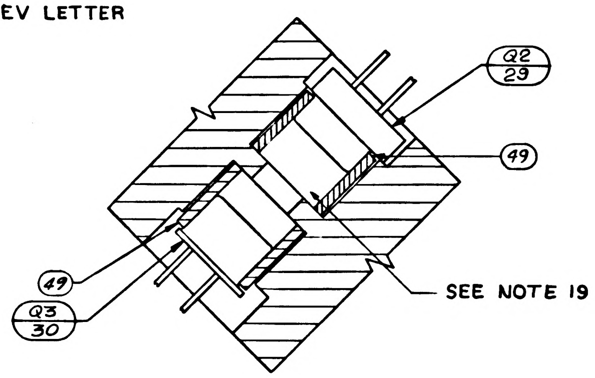
SEE NOTE 19

PARTIAL SECTION B-B


Q2
29
49
49
Q3
30
SEE NOTE 19

PARTIAL SECTION C-C

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
FRACTIONS ± — DECIMALS ± — ANGLES ± —	DRAWN S. Agne DATE 24 SEP 64 CHECKED A. Udovich 26 SEP 64 APPROVAL [illegible] APPROVAL [illegible] 10/13/64	GIMBAL SERVO AMPLIFIER MODULE ASSY
DO NOT SCALE THIS DRAWING		
MATERIAL	NASA APPROVAL [illegible] 10-22-64	CODE IDENT NO. 80230 · SIZE E · 1007540
CONTRACT NAS 9-497	MIT APPROVAL [illegible]	SCALE 4:1 · SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
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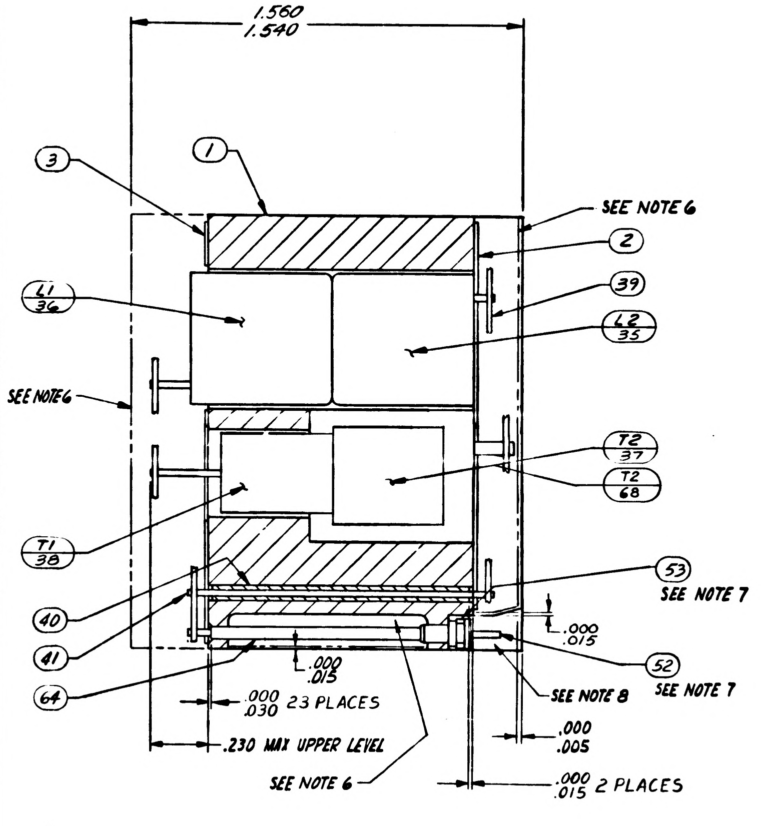
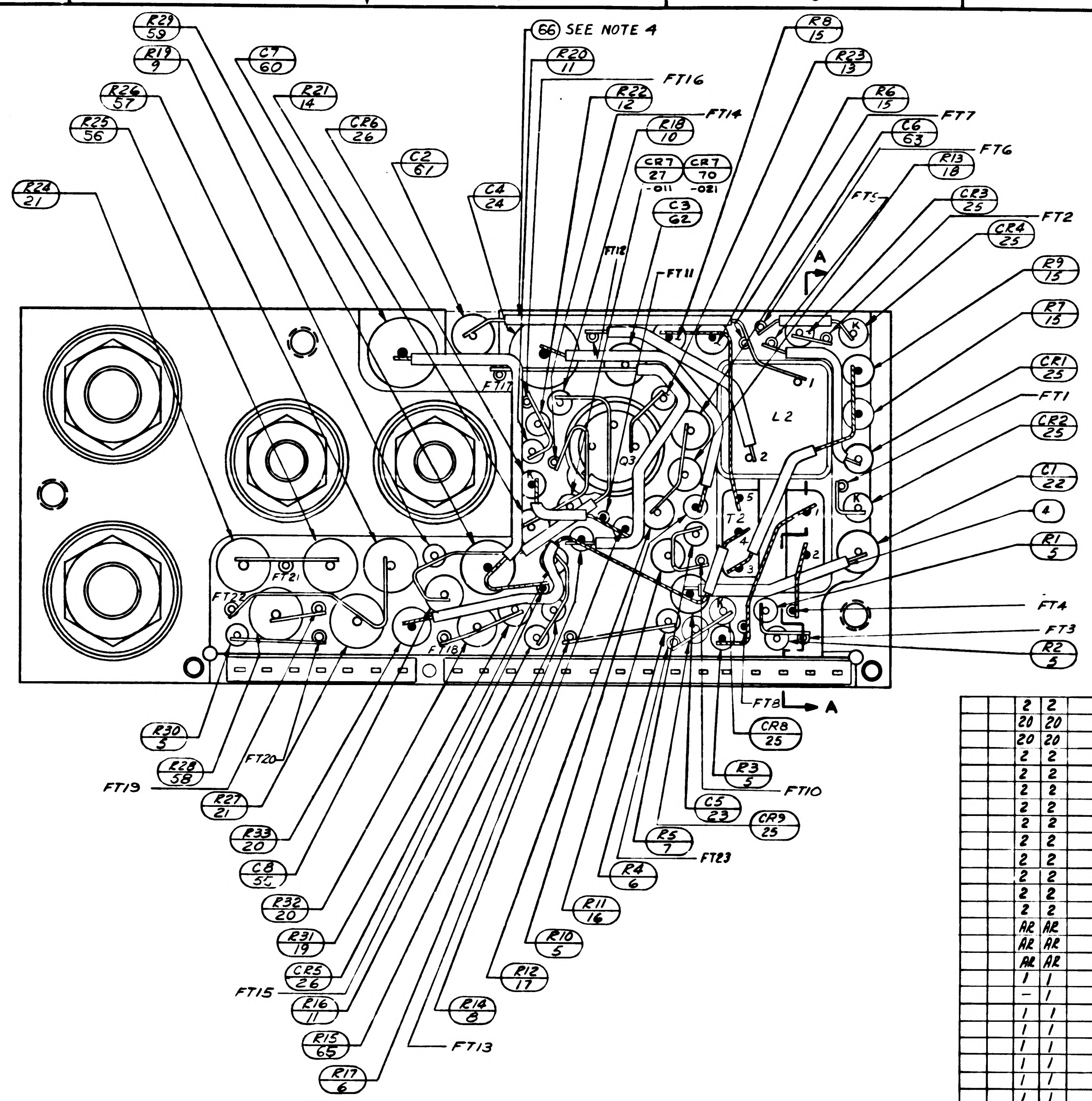
B		REVISED PER TDRR 17610		25 MAR 65	MTC CAF
C		REVISED PER TDRR 19459		2 JUN 65	[illegible]
D		REVISED PER TDRR 19506		[illegible] 65	[illegible]
E		REVISED PER TDRR 20143		[illegible] 65	[illegible]





NOTES:

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3. SOLDER PER ND 1002071.
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8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD H.
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13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
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15. ON ITEMS 2 & 3:
    - A. FT( ) INDICATES FEEDTHRU
    - B. K INDICATES CATHODE SIDE OF DIODE
    - C. C INDICATES COLLECTOR LEAD OF TRANSISTOR
    - D. B INDICATES BASE LEAD OF TRANSISTOR
    - E. E INDICATES EMITTER LEAD OF TRANSISTOR
    - F. C( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR
    - G. B( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
    - H. E( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR
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17. PROCURE PER PS 1007040.
18. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN
19. FILL PER ND1002117
20. AR DENOTES AS REQUIRED
21. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP & BOTTOM INSULATORS TO THE HEATSINK & COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
22. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
23. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
24. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140° F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

C2 SEE NOTE 16	
PART NO.	VALUE UF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
1010264-6	.0027

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		1	–		70	1010830-9	SEMICONDUCTOR DEVICE, DIODE
		1	1		69	1008540-7	GASKET, CONNECTOR MINIATURE
		1	–		68	1010710	TRANSFORMER
		X	–		REF	1009534	SCHEMATIC, ELECTRICAL
		1	1		67	1008540-15	GASKET, CONNECTOR -MINIATURE
		–	X		REF	1010024	SCHEMATIC, ELECTRICAL
		AR	AR		66	SEE NOTE 4	INSULATION SLEEVING NO.22
		1	1		65	1006750-75	RESISTOR
		AR	AR		64	1006776-20	INSULATION SLEEVING, ELECTRICAL
		1	1		63	1010279-9	CAPACITOR
		1	1		62	1010264-12	CAPACITOR
		1	1		61	SEE NOTE 16	CAPACITOR
		1	1		60	1010320-6	CAPACITOR
		1	1		59	1010389-94	RESISTOR, FIXED
		1	1		58	1010399-16	RESISTOR, FIXED
		1	1		57	1010389-47	RESISTOR, FIXED
		1	1		56	1010399-31	RESISTOR, FIXED
		1	1		55	1010279-228	CAPACITOR
		2	2		54	1008024-2	WASHER, INSULATOR
		20	20		53	1006775	INSULATOR
		20	20		52	1006782-5	CONTACT
		2	2		51	MS20341-416B	NUT
		2	2		50	MS20341-10B	NUT
		2	2		49	1008025-2	BUSHING, INSULATOR
		2	2		48	1008021-1	BUSHING, INSULATOR
		2	2		47	1008021-2	BUSHING, INSULATOR
		2	2		46	1008024-3	WASHER, INSULATOR
		2	2		45	1008024-4	WASHER, INSULATOR
		2	2		44	1008071-5	WASHER, FLAT
		2	2		43	1008024-1	WASHER, INSULATOR
		2	2		42	1008071-2	WASHER, FLAT
		AR	AR		41	1006757-8	WIRE, ELECTRICAL
		AR	AR		40	1006776-22	INSULATION SLEEVING, ELECTRICAL
		AR	AR		39	1006757-1	WIRE, ELECTRICAL
		1	1		38	1010328	TRANSFORMER
		–	1		37	1010327	TRANSFORMER
		1	1		36	1010277-9	REACTOR
		1	1		35	1010277-8	REACTOR
		1	1		34	1010273-1	TRANSISTOR
		1	1		33	1010437	TRANSISTOR
		1	1		32	1010271	TRANSISTOR
		1	1		31	1010269-1	TRANSISTOR
		1	1		30	1010270	TRANSISTOR
		1	1		29	1010345-1	TRANSISTOR
		1	1		28	1010252-1	TRANSISTOR
		~~1~~	1		27	1010286-9	SEMICONDUCTOR DEVICE, DIODE
		2	2		26	1010372-15	SEMICONDUCTOR DEVICE, DIODE
		6	6		25	1010392-1	SEMICONDUCTOR DEVICE, DIODE
		1	1		24	1010320-11	CAPACITOR, FIXED
		1	1		23	1010279-220	CAPACITOR, FIXED
		1	1		22	1010264-9	CAPACITOR, FIXED
		2	2		21	1010278-39	RESISTOR, FIXED
		2	2		20	1010377-66	RESISTOR, FIXED
		1	1		19	1010364-43	RESISTOR, FIXED
		1	1		18	1010364-719	RESISTOR, FIXED
		1	1		17	1010364-465	RESISTOR, FIXED
		1	1		16	1010364-635	RESISTOR, FIXED
		4	4		15	1010364-443	RESISTOR, FIXED
		1	1		14	1006760-35	RESISTOR, FIXED
		1	1		13	1006750-40	RESISTOR, FIXED
		1	1		12	1006750-53	RESISTOR, FIXED
		2	2		11	1006750-51	RESISTOR, FIXED
		1	1		10	1006750-70	RESISTOR, FIXED
		1	1		9	1006750-44	RESISTOR, FIXED
		1	1		8	1006750-60	RESISTOR, FIXED
		1	1		7	1006750-48	RESISTOR, FIXED
		2	2		6	1006750-80	RESISTOR, FIXED
		5	5		5	1006750-73	RESISTOR, FIXED
		AR	AR		4	1006776-21	INSULATION SLEEVING, ELECTRICAL
		1	1		3	1015687	INSULATOR
		1	1		2	1015686	INSULATOR
		1	1		1	1015685	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ XXX ± .005 +
- XX ± .02 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN S. Agne DATE 24 SEP 64
CHECKED A. Udarich 26 SEP 64
APPROVAL
APPROVAL
NASA APPROVAL 10-20-64
MIT APPROVAL

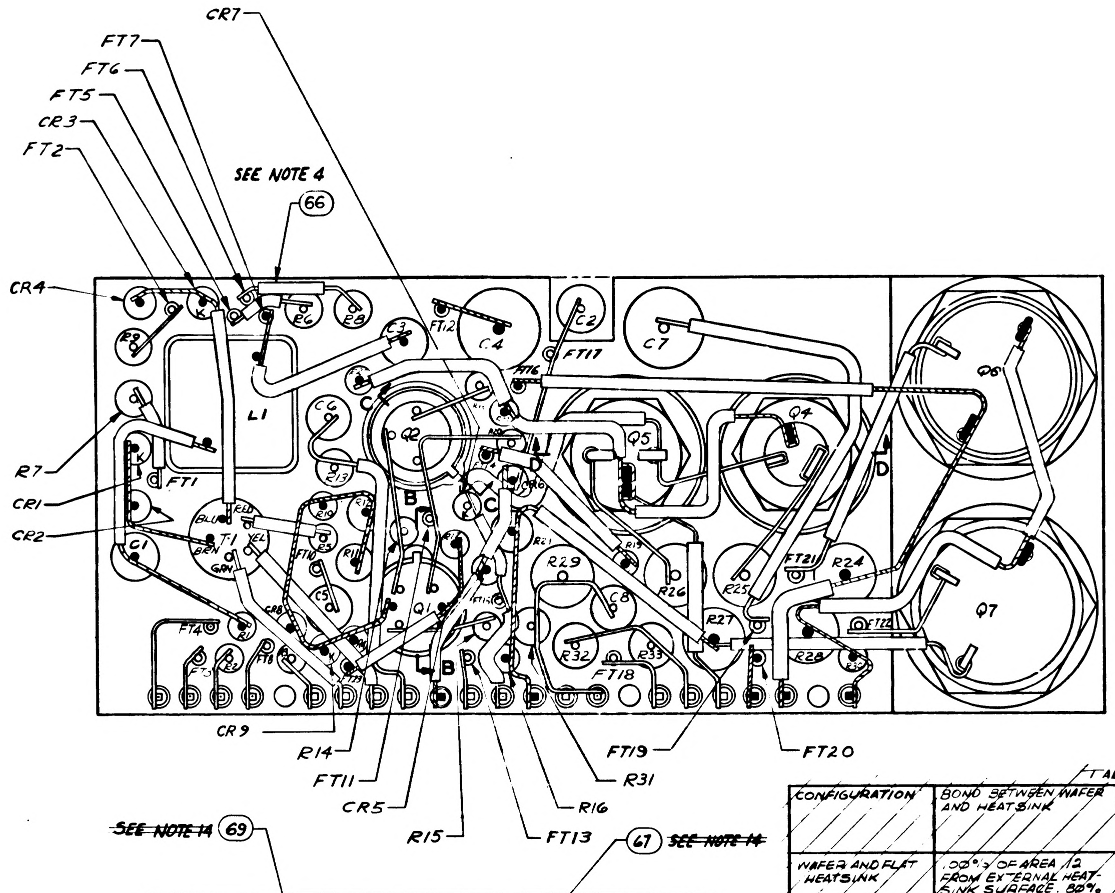
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL SERVO AMPLIFIER
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007540
SCALE 4:1
SHEET 1 OF 2

1007540

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR-17354		12 MAR 65	
B		REVISED PER TDRR 17610		25 MAR 65	
C		REVISED PER TDRR 3453		65	
D		REVISED PER TDRR 19506		65	
E		REVISED PER TDRR 20.43		9 JUL 65	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FT5
CR3
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CR7
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Q4
Q5
Q6
Q7
Q1
Q2
T1
FT1
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FT18
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FT22
R24
R25
R26
R27
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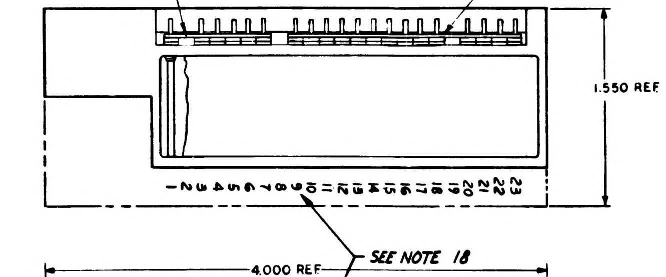
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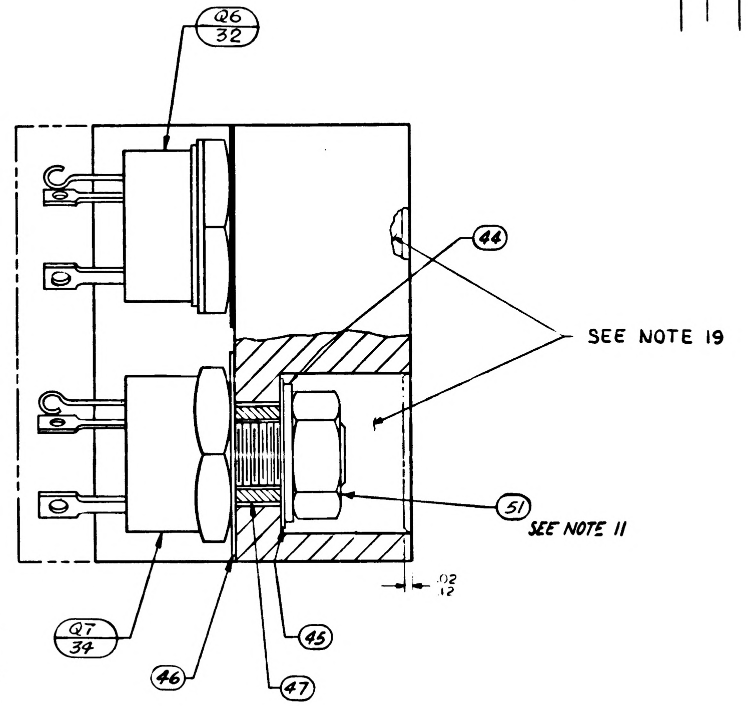
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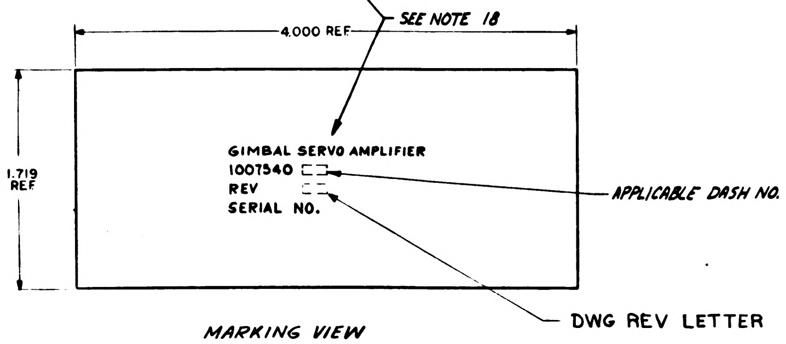
44
SEE NOTE 19
51
SEE NOTE 11
.02 .12
Q7 34
45
46
47

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	.00% OF AREA .12 FROM EXTERNAL HEAT-SINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE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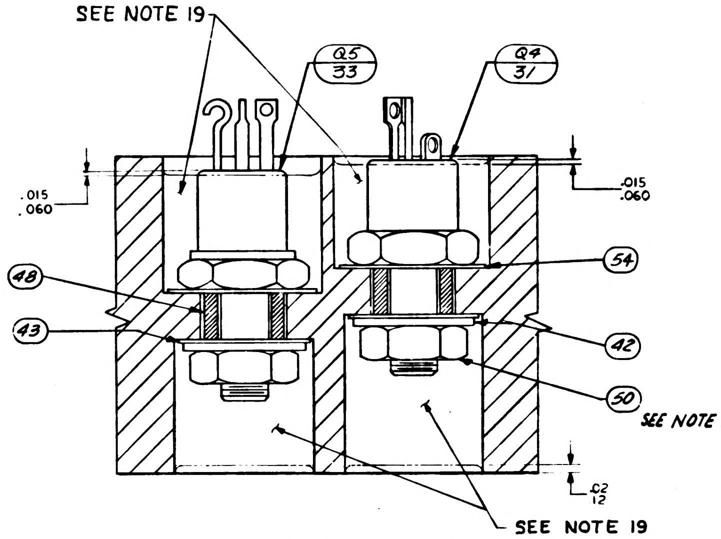
GIMBAL SERVO AMPLIFIER
1007540 ☐☐
REV ☐☐
SERIAL NO.
APPLICABLE DASH NO.
DWG REV LETTER

MARKING VIEW
SCALE-2:1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.015 .060
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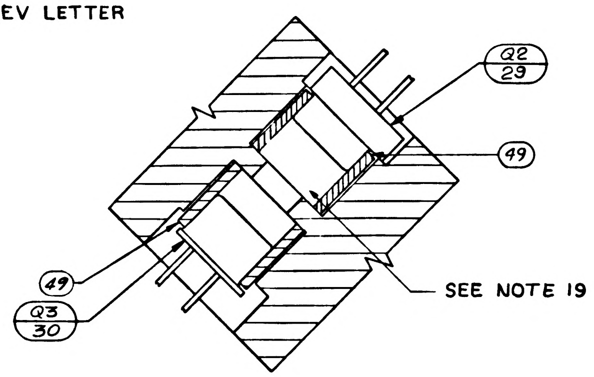
SEE NOTE 10
.02 .12
SEE NOTE 19

PARTIAL SECTION D-D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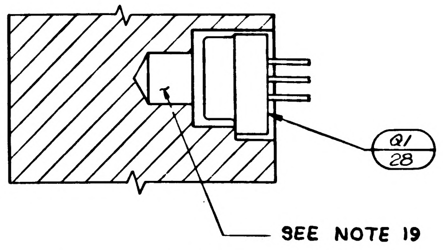
Q3 30
SEE NOTE 19


Q1 28
SEE NOTE 19

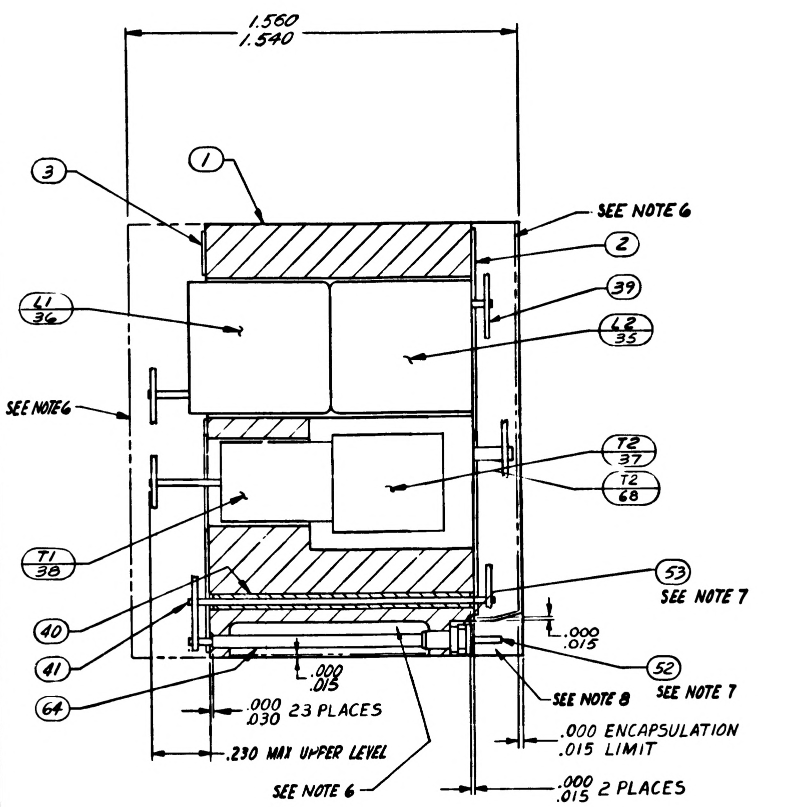
PARTIAL SECTION B-B

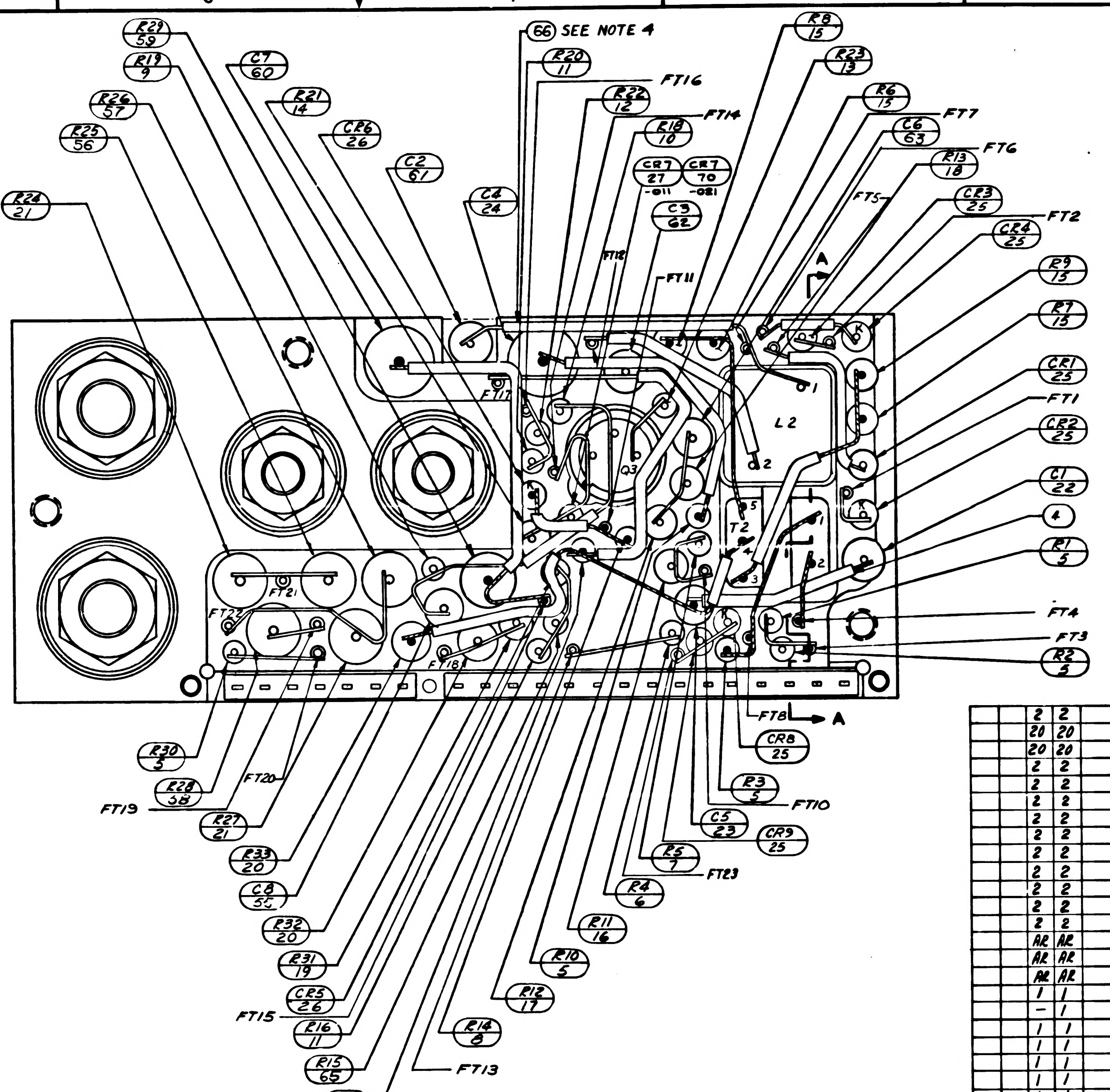
PARTIAL SECTION C-C

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES + — + — + — - — - — - —	M I T INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN S Agne DATE 24 SEP 64 CHECKED C. Udovich 26 SEP 64 APPROVAL APPROVAL	GIMBAL SERVO AMPLIFIER MODULE ASSY
MATERIAL	NASA APPROVAL	CODE IDENT NO. 80230 · SIZE E · 1007540
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 4:1 · SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A	C-6	REVISED PER TDRR17354		12-MAR-65	M.L EF
B		REVISED PER TDRR 17610		25 MAR 65	EF
C		REVISED PER TDRR 19453		3-JUN-65	EF
D		REVISED PER TDRR 19506		9-JUN-65	
E		REVISED PER TDRR 20143		19 JUN 65	
F		REVISED PER TDRR 22942		65	

REVISIONS





NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTION TO BE MADE BY WELDING PER ND 1002005.
3. SOLDER PER ND 1002071.
4. USE MIL-I-631, TYPE F, FORM U, GRADE C, CLASS I, CATEGORY I, IN 2 PLACES ONLY - SECURE IN PLACE PER ND 1002004. TYPE I
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND IT'S RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .005. REMOVE ALL FLASHING.
7. ASSEMBLE PER ND1002136.
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD J.
10. MOUNTING TORQUE FOR ITEM (50) 12 IN-LBS ± 2 IN-LBS.
11. MOUNTING TORQUE FOR ITEM (51) 24 IN-LBS ± 2 IN-LBS.
12. BROKEN PATHS ON ITEMS ② AND ③ INDICATES SLEEVING.
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
14. ~~BOND ITEM 67 TO ITEM 55 PER ND 1002287.~~
15. ON ITEMS 2 & 3:
    - A. FT( ) INDICATES FEEDTHRU
    - B. K INDICATES CATHODE SIDE OF DIODE
    - C. C INDICATES COLLECTOR LEAD OF TRANSISTOR
    - D. B INDICATES BASE LEAD OF TRANSISTOR
    - E. E INDICATES EMITTER LEAD OF TRANSISTOR
    - F. C( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR
    - G. B( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
    - H. E( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR
16. AT FINAL TEST C2 TO BE SELECTED FROM CHART PER ATP 1007040
17. PROCURE PER PS 1007040.
18. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN
19. FILL PER ND1002117
20. AR DENOTES AS REQUIRED
21. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP & BOTTOM INSULATORS TO THE HEATSINK & COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
22. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATINGS AS INDICATED IN TABLE I.~~
23. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
24. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

C2 SEE NOTE 16	
PART NO.	VALUE UF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
1010264-6	.0027

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		021	011				
		1	–		70	1010830-9	SEMICONDUCTOR DEVICE, DIODE
		1	1		69	1008540-7	GASKET, CONNECTOR MINIATURE
		1	–		68	1010710	TRANSFORMER
		☒	–		REF	1009534	SCHEMATIC, ELECTRICAL
		1	1		67	1008540-15	GASKET, CONNECTOR-MINIATURE
		–	☒		REF	1010024	SCHEMATIC, ELECTRICAL
		AR	AR		66	SEE NOTE 4	INSULATION SLEEVING No. 22
		1	1		65	1006750-75	RESISTOR
		AR	AR		64	1006776-20	INSULATION SLEEVING, ELECTRICAL
		1	1		63	1010279-9	CAPACITOR
		1	1		62	1010264-12	CAPACITOR
		1	1		61	SEE NOTE 16	CAPACITOR
		1	1		60	1010320-6	CAPACITOR
		1	1		59	1010389-94	RESISTOR, FIXED
		1	1		58	1010399-16	RESISTOR, FIXED
		1	1		57	1010389-47	RESISTOR, FIXED
		1	1		56	1010399-31	RESISTOR, FIXED
		1	1		55	1010279-228	CAPACITOR

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		021	011				
		2	2		54	1008024-2	WASHER, INSULATOR
		20	20		53	1006775	INSULATOR
		20	20		52	1006782-5	CONTACT
		2	2		51	MS20341-416B	NUT
		2	2		50	MS20341-10B	NUT
		2	2		49	1008025-2	BUSHING, INSULATOR
		2	2		48	1008021-1	BUSHING, INSULATOR
		2	2		47	1008021-2	BUSHING, INSULATOR
		2	2		46	1008024-3	WASHER, INSULATOR
		2	2		45	1008024-4	WASHER, INSULATOR
		2	2		44	1008071-5	WASHER, FLAT
		2	2		43	1008024-1	WASHER, INSULATOR
		2	2		42	1008071-2	WASHER, FLAT
		AR	AR		41	1006757-8	WIRE, ELECTRICAL
		AR	AR		40	1006776-22	INSULATION SLEEVING, ELECTRICAL
		AR	AR		39	1006757-1	WIRE, ELECTRICAL
		1	1		38	1010328	TRANSFORMER
		–	1		37	1010327	TRANSFORMER
		1	1		36	1010277-9	REACTOR
		1	1		35	1010277-8	REACTOR
		1	1		34	1010273-1	TRANSISTOR
		1	1		33	1010437	TRANSISTOR
		1	1		32	1010271	TRANSISTOR
		1	1		31	1010269-1	TRANSISTOR
		1	1		30	1010270	TRANSISTOR
		1	1		29	1010345-1	TRANSISTOR
		1	1		28	1010252-1	TRANSISTOR
		≠	1		27	1010286-9	SEMICONDUCTOR DEVICE, DIODE
		2	2		26	1010372-15	SEMICONDUCTOR DEVICE, DIODE
		6	6		25	1010392-1	SEMICONDUCTOR DEVICE, DIODE
		1	1		24	1010320-11	CAPACITOR, FIXED
		1	1		23	1010279-220	CAPACITOR, FIXED
		1	1		22	1010264-9	CAPACITOR, FIXED
		2	2		21	1010278-39	RESISTOR, FIXED
		2	2		20	1010377-66	RESISTOR, FIXED
		1	1		19	1010364-43	RESISTOR, FIXED
		1	1		18	1010364-719	RESISTOR, FIXED
		1	1		17	1010364-465	RESISTOR, FIXED
		1	1		16	1010364-635	RESISTOR, FIXED
		4	4		15	1010364-443	RESISTOR, FIXED
		1	1		14	1006760-35	RESISTOR, FIXED
		1	1		13	1006750-40	RESISTOR, FIXED
		1	1		12	1006750-53	RESISTOR, FIXED
		2	2		11	1006750-51	RESISTOR, FIXED
		1	1		10	1006750-70	RESISTOR, FIXED
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		1	1		8	1006750-60	RESISTOR, FIXED
		1	1		7	1006750-48	RESISTOR, FIXED
		2	2		6	1006750-80	RESISTOR, FIXED
		5	5		5	1006750-73	RESISTOR, FIXED
		AR	AR		4	1006776-21	INSULATION SLEEVING, ELECTRICAL
		1	1		3	1015687	INSULATOR
		1	1		2	1015686	INSULATOR
		1	1		1	1015685	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ XXX ± .005 +
- XX ± .02 -
DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN S. Agne DATE 14 SEP 64
CHECKED A. Ulrich 26 SEP 64
APPROVAL
APPROVAL 10/12/64
NASA APPROVAL 10-20-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL SERVO AMPLIFIER
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007540
SCALE 4:1
SHEET 1 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR-17354		12-MAR-65	MG
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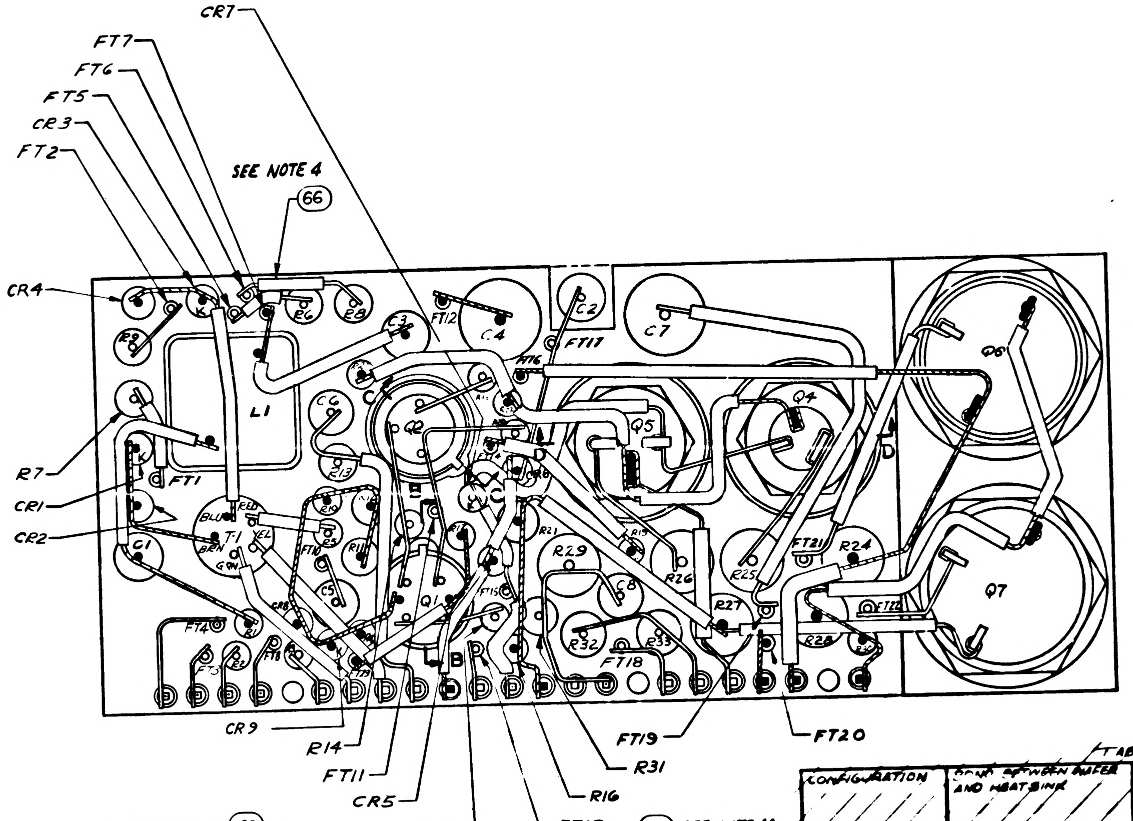
C		REVISED PER TDRR 19453		2-[illegible]-65	[illegible]
D		REVISED PER TDRR 19506		9-[illegible]-65	[illegible]
E		REVISED PER TDRR 20143		9 JUN 65	DKB
F		REVISED PER TDRR 22942		12-[illegible]-65	LK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Q2
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Q4
R7
CR1
CR2
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Q1
R29
C8
R24
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R26
R25
R27
Q7
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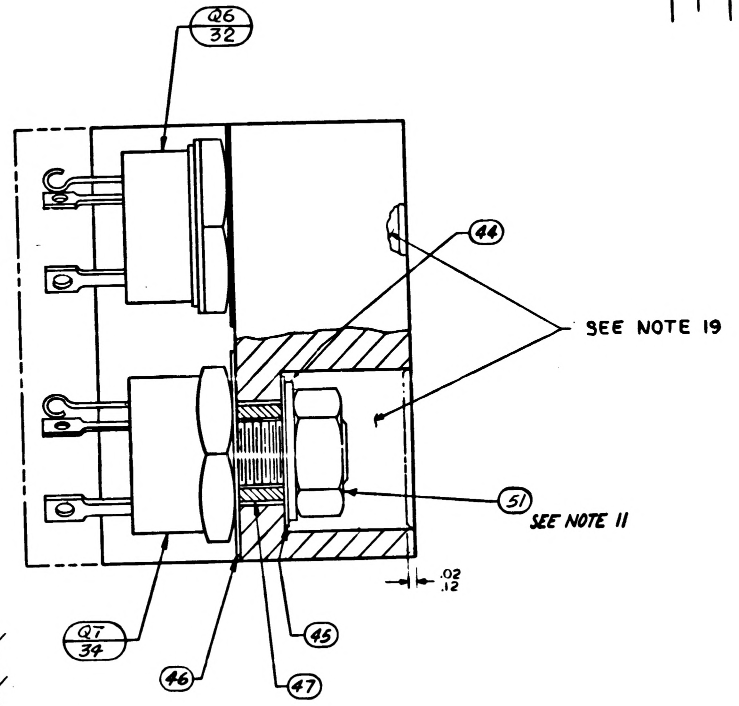
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SEE NOTE 19
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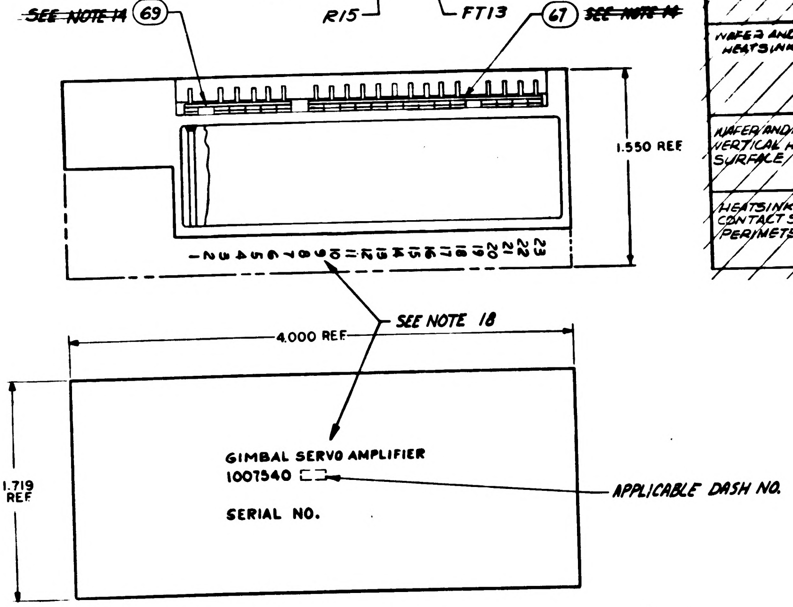
SEE NOTE 11
.02
.12
Q7
34
46
47
45

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	80% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE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~~SEE NOTE 14~~
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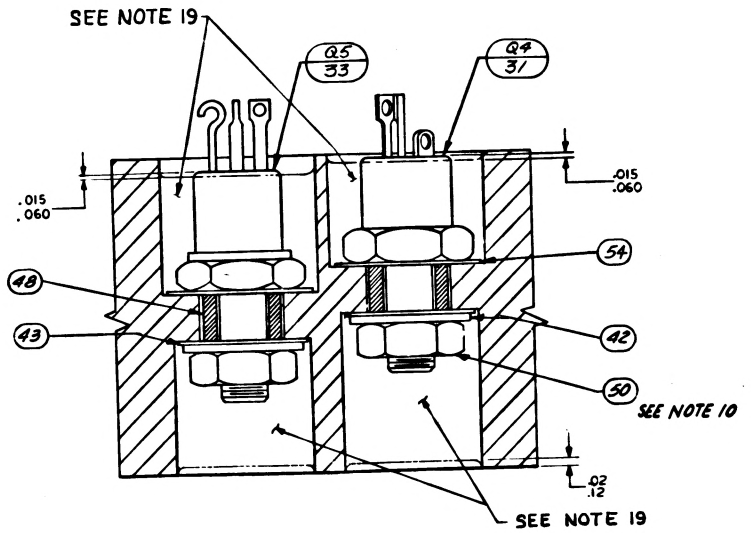
SEE NOTE 18
4.000 REF
1.719 REF
GIMBAL SERVO AMPLIFIER
1007540 ☐
SERIAL NO.
APPLICABLE DASH NO.

MARKING VIEW
SCALE - 2:1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SEE NOTE 10
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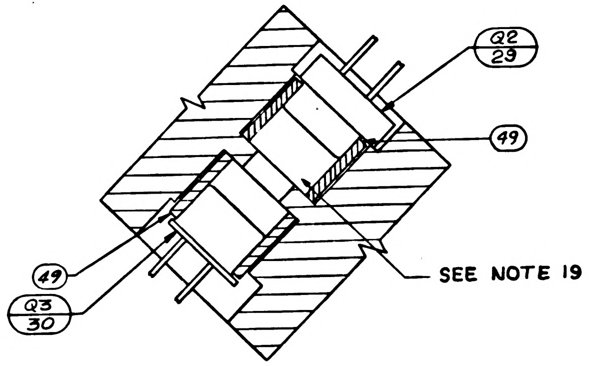
SEE NOTE 19

PARTIAL SECTION D-D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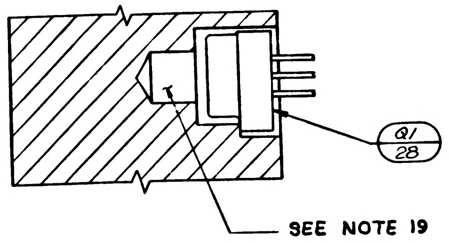
SEE NOTE 19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SEE NOTE 19

PARTIAL SECTION B-B

PARTIAL SECTION C-C

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± —— DECIMALS ± —— ANGLES ± ——	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DO NOT SCALE THIS DRAWING	DRAWN Sloane DATE 24 SEP 64 CHECKED [illegible] 26 SEP 64 APPROVAL [illegible] APPROVAL [illegible] 10/19/64	GIMBAL SERVO AMPLIFIER MODULE ASSY	
MATERIAL	NASA APPROVAL W. J. [illegible] 10-20-64	CODE IDENT NO. 80230	SIZE E 1007540
CONTRACT NAS 9-497	MIT APPROVAL [illegible]	SCALE 4:1	SHEET 2 OF 2

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A	C-6	REVISED PER TDRR17354		[illegible] 65	M. [illegible] CP
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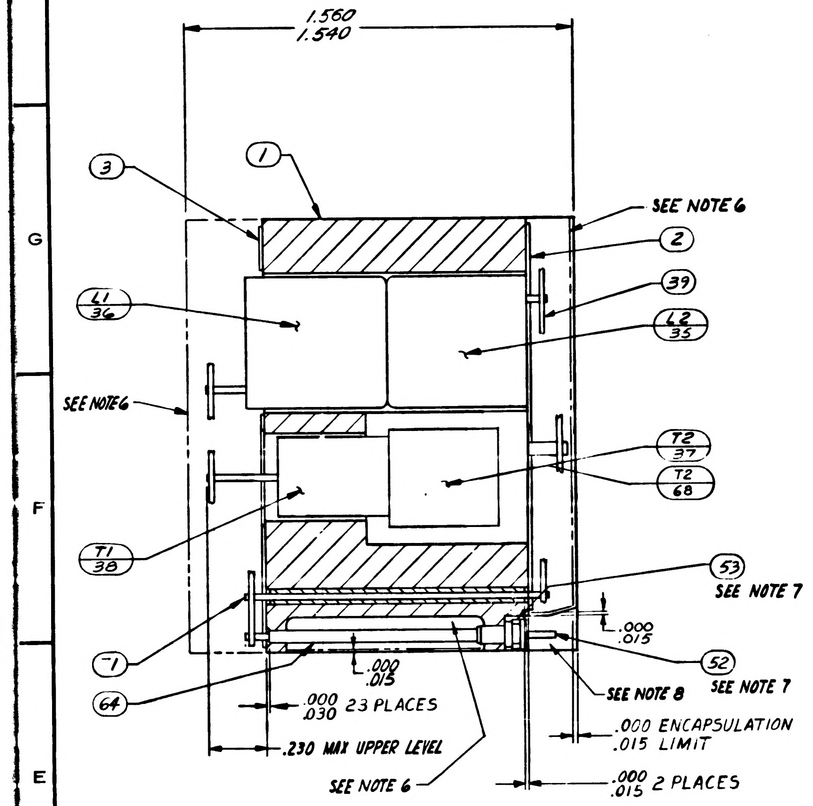
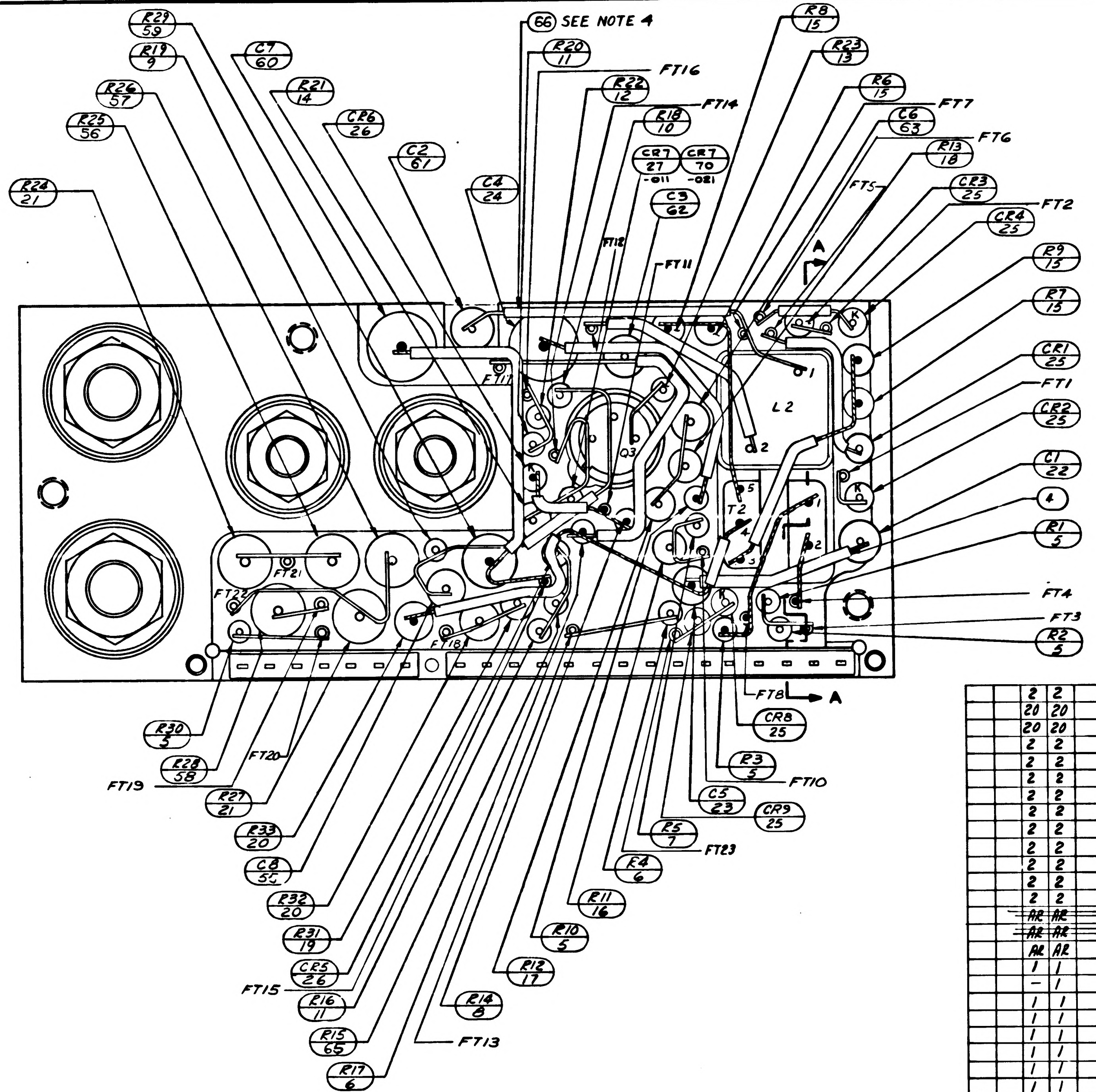
C		REVISED PER TDRR 19459		[illegible] 65	[illegible]
D		REVISED PER TDRR 19506		[illegible] 65	[illegible]
E		REVISED PER TDRR 20143		[illegible] 65	[illegible]
F		REVISED PER TDRR 22942		[illegible] 65	[illegible]
G		REVISED PER TDRR 23888		[illegible]	[illegible]





NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTION TO BE MADE BY WELDING PER ND 1002005.
3. SOLDER PER ND 1002071.
4. USE MIL-I-631, TYPE F, FORM U, GRADE C, CLASS I, CATEGORY I, IN 2 PLACES ONLY - SECURE IN PLACE PER ND 1002004. TYPE I
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND IT'S RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .005. REMOVE ALL FLASHING.
7. ASSEMBLE PER ND1002136.
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD J.
10. MOUNTING TORQUE FOR ITEM (50) 12 IN-LBS ± 2 IN-LBS.
11. MOUNTING TORQUE FOR ITEM (51) 24 IN-LBS ± 2 IN-LBS.
12. BROKEN PATHS ON ITEMS ② AND ③ INDICATES SLEEVING.
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
14. ~~BOND ITEM 67 TO ITEM 58 PER ND 1002297.~~
15. ON ITEMS 2 & 3:
    A. FT( ) INDICATES FEEDTHRU
    B. K INDICATES CATHODE SIDE OF DIODE
    C. C INDICATES COLLECTOR LEAD OF TRANSISTOR
    D. B INDICATES BASE LEAD OF TRANSISTOR
    E. E INDICATES EMITTER LEAD OF TRANSISTOR
    F. C( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR
    G. B( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
    H. E( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR
16. AT FINAL TEST C2 TO BE SELECTED FROM CHART PER ATP 1007040
17. PROCURE PER PS 1007040.
18. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN
19. FILL PER ND1002117
20. AR DENOTES AS REQUIRED
21. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP & BOTTOM INSULATORS TO THE HEATSINK & COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
22. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
23. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
24. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

C2 SEE NOTE 16	
PART NO.	VALUE UF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
1010264-6	.0027

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		021	011			LIST OF PARTS AND MATERIALS	
		AR	AR		71	1010848-2	WIRE-ELECTRICAL, NICKEL
		1	–		70	1010830-9	SEMICONDUCTOR DEVICE, DIODE
		1	1		69	1008540-7	GASKET, CONNECTOR MINIATURE
		1	–		68	1010710	TRANSFORMER
		☒	–		REF	1009534	SCHEMATIC, ELECTRICAL
		1	1		67	1008540-15	GASKET, CONNECTOR-MINIATURE
		–	☒		REF	1010024	SCHEMATIC, ELECTRICAL
		AR	AR		66	SEE NOTE 4	INSULATION SLEEVING NO.22
		1	1		65	1006750-75	RESISTOR
		AR	AR		64	1006776-20	INSULATION SLEEVING, ELECTRICAL
		1	1		63	1010279-9	CAPACITOR
		1	1		62	1010264-12	CAPACITOR
		1	1		61	SEE NOTE 16	CAPACITOR
		1	1		60	1010320-6	CAPACITOR
		1	1		59	1010389-94	RESISTOR, FIXED
		1	1		58	1010399-16	RESISTOR, FIXED
		1	1		57	1010389-47	RESISTOR, FIXED
		1	1		56	1010399-31	RESISTOR, FIXED
		1	1		55	1010279-228	CAPACITOR

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		021	011			LIST OF PARTS AND MATERIALS	
		2	2		54	1008024-2	WASHER, INSULATOR
		20	20		53	1006775	INSULATOR
		20	20		52	1006782-5	CONTACT
		2	2		51	MS20341-416B	NUT
		2	2		50	MS20341-10B	NUT
		2	2		49	1008025-2	BUSHING, INSULATOR
		2	2		48	1008021-1	BUSHING, INSULATOR
		2	2		47	1008021-2	BUSHING, INSULATOR
		2	2		46	1008024-3	WASHER, INSULATOR
		2	2		45	1008024-4	WASHER, INSULATOR
		2	2		44	1008071-5	WASHER, FLAT
		2	2		43	1008024-1	WASHER, INSULATOR
		2	2		42	1008071-2	WASHER, FLAT
		~~AR~~	~~AR~~		~~41~~	~~1006757-8~~	~~WIRE, ELECTRICAL~~
		~~AR~~	~~AR~~		~~40~~	~~1006776-22~~	~~INSULATION SLEEVING, ELECTRICAL~~
		AR	AR		39	1006757-1	WIRE, ELECTRICAL
		1	1		38	1010328	TRANSFORMER
		–	1		37	1010327	TRANSFORMER
		1	1		36	1010277-9	REACTOR
		1	1		35	1010277-8	REACTOR
		1	1		34	1010273-1	TRANSISTOR
		1	1		33	1010437	TRANSISTOR
		1	1		32	1010271	TRANSISTOR
		1	1		31	1010269-1	TRANSISTOR
		1	1		30	1010270	TRANSISTOR
		1	1		29	1010345-1	TRANSISTOR
		1	1		28	1010252-1	TRANSISTOR
		~~1~~	1		27	1010286-9	SEMICONDUCTOR DEVICE, DIODE
		2	2		26	1010372-15	SEMICONDUCTOR DEVICE, DIODE
		6	6		25	1010392-1	SEMICONDUCTOR DEVICE, DIODE
		1	1		24	1010320-11	CAPACITOR, FIXED
		1	1		23	1010279-220	CAPACITOR, FIXED
		1	1		22	1010264-9	CAPACITOR, FIXED
		2	2		21	1010278-39	RESISTOR, FIXED
		2	2		20	1010377-66	RESISTOR, FIXED
		1	1		19	1010364-43	RESISTOR, FIXED
		1	1		18	1010364-719	RESISTOR, FIXED
		1	1		17	1010364-465	RESISTOR, FIXED
		1	1		16	1010364-635	RESISTOR, FIXED
		4	4		15	1010364-443	RESISTOR, FIXED
		1	1		14	1006760-35	RESISTOR, FIXED
		1	1		13	1006750-40	RESISTOR, FIXED
		1	1		12	1006750-53	RESISTOR, FIXED
		2	2		11	1006750-51	RESISTOR, FIXED
		1	1		10	1006750-70	RESISTOR, FIXED
		1	1		9	1006750-44	RESISTOR, FIXED
		1	1		8	1006750-60	RESISTOR, FIXED
		1	1		7	1006750-48	RESISTOR, FIXED
		2	2		6	1006750-80	RESISTOR, FIXED
		5	5		5	1006750-73	RESISTOR, FIXED
		AR	AR		4	1006776-21	INSULATION SLEEVING, ELECTRICAL
		1	1		3	1015687	INSULATOR
		1	1		2	1015686	INSULATOR
		1	1		1	1015685	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ XXX ± .005 +
- XX ± .02 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

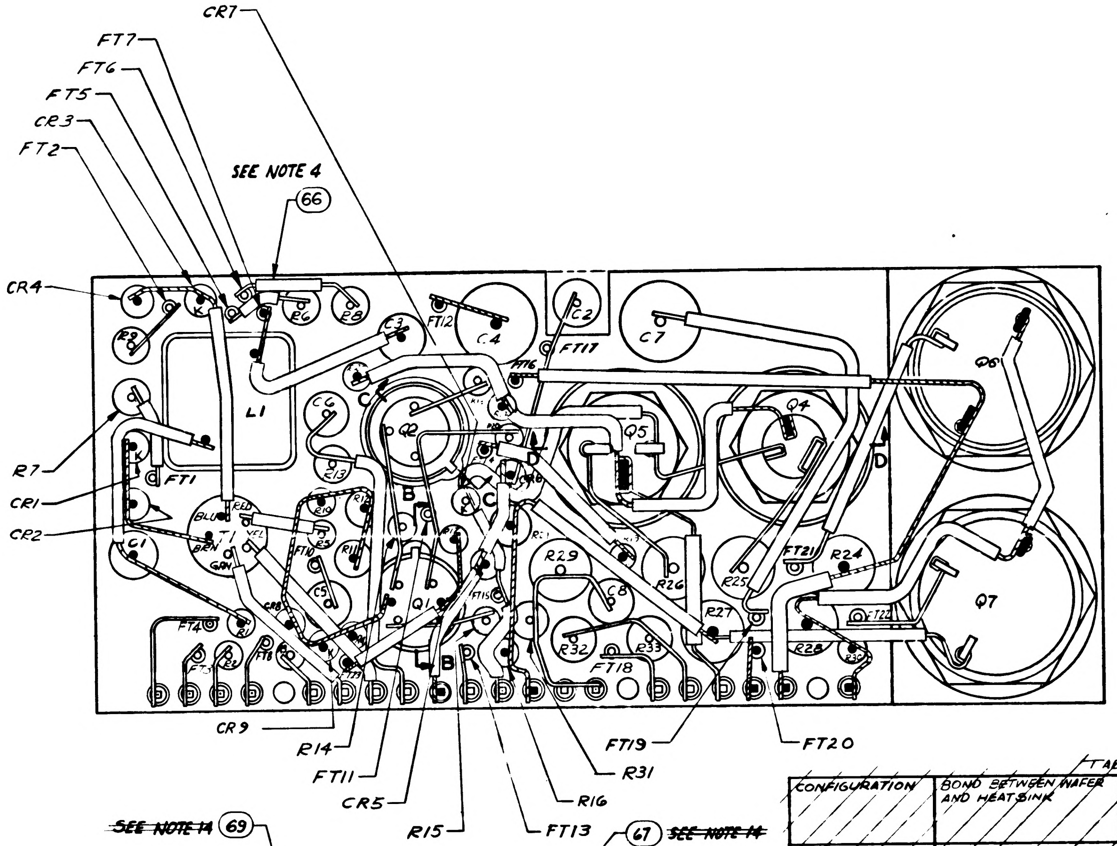
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN S. Agna DATE 24 SEP 64
CHECKED A. Ullrich 26 SEP 64
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible] 10-20-64
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL SERVO AMPLIFIER
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007540
SCALE 4:1
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR-17354		12-MAR 65	MG CP
B		REVISED PER TDRR 17610		25 MAR 65	HTO [illegible]
C		REVISED PER TDRR 19453		2-[illegible] 65	JM [illegible]
D		REVISED PER TDRR 19506		9-[illegible] 65	[illegible]
E		REVISED PER TDRR 20143		19 JUN 65	DKD [illegible]
F		REVISED PER TDRR 22942		12 [illegible] 65	[illegible]
G		REVISION STATUS CHANGED		16 NOV 65	[illegible]


CR7
FT7
FT6
FT5
CR3
FT2
SEE NOTE 4
66
CR4
R7
CR1
CR2
L1
C1
C2
C3
C4
C5
C6
C7
C8
FT1
FT12
FT17
FT16
FT21
FT14
Q1
Q2
Q4
Q5
Q6
Q7
R24
R25
R26
R27
R28
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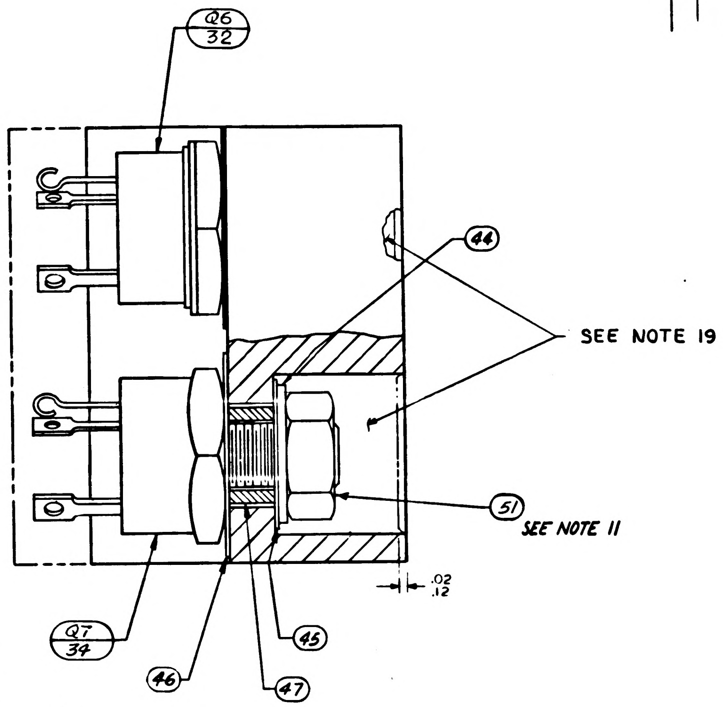
FT13
R16
R31
FT19
FT20


Q6
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44
SEE NOTE 19
51
SEE NOTE 11
.02
.12
Q7
34
46
47
45

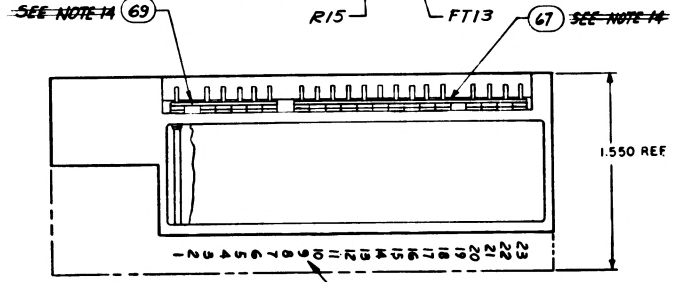
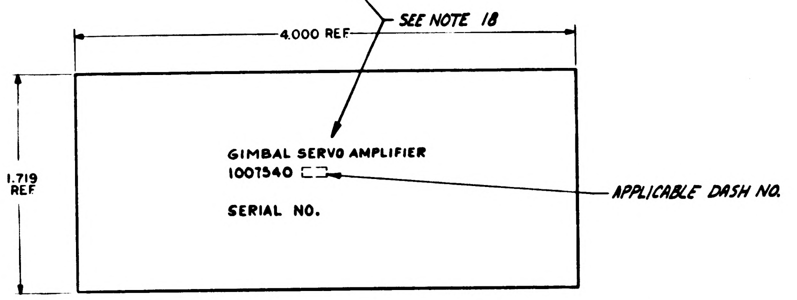
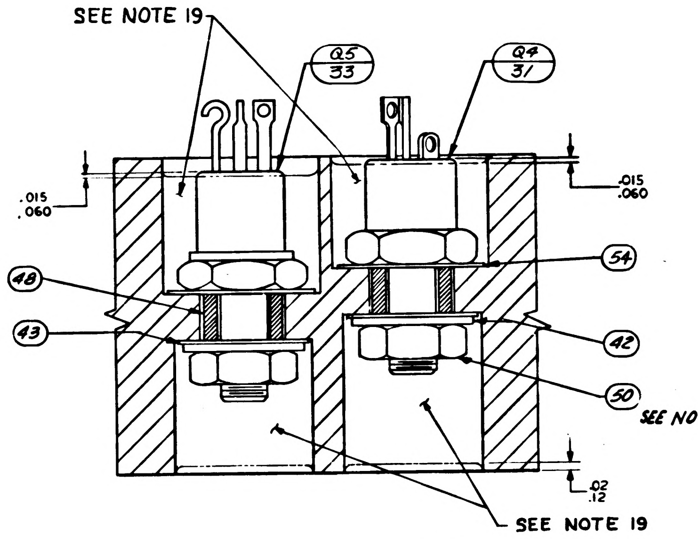

~~SEE NOTE 14~~ 69
67 ~~SEE NOTE 14~~
1.550 REF
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

TABLE I

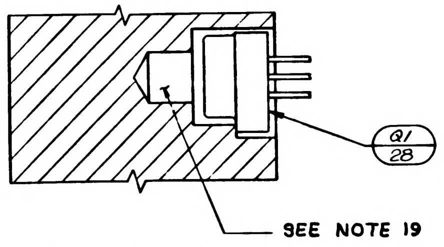
CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE


SEE NOTE 18
4.000 REF
1.719 REF
GIMBAL SERVO AMPLIFIER
1007540 ☐☐
SERIAL NO.
APPLICABLE DASH NO.

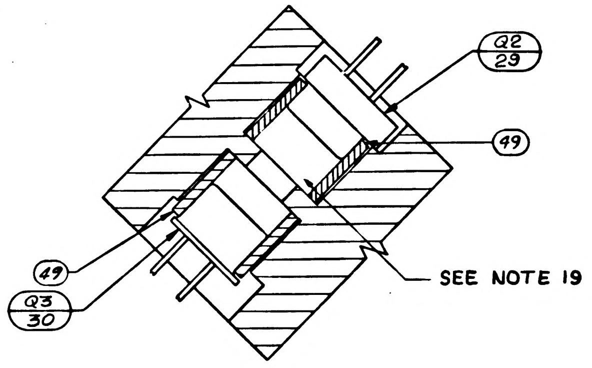
MARKING VIEW
SCALE - 2:1


SEE NOTE 19
Q5
33
Q4
31
.015
.060
.015
.060
54
48
43
42
50
SEE NOTE 10
.02
.12
SEE NOTE 19

PARTIAL SECTION D-D


Q1
28
SEE NOTE 19

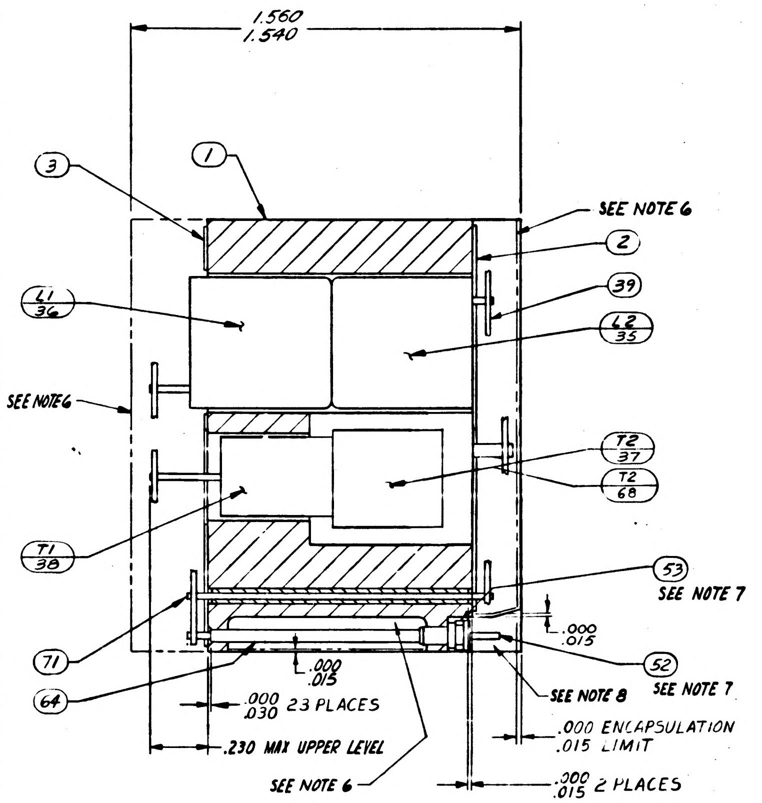
PARTIAL SECTION B-B

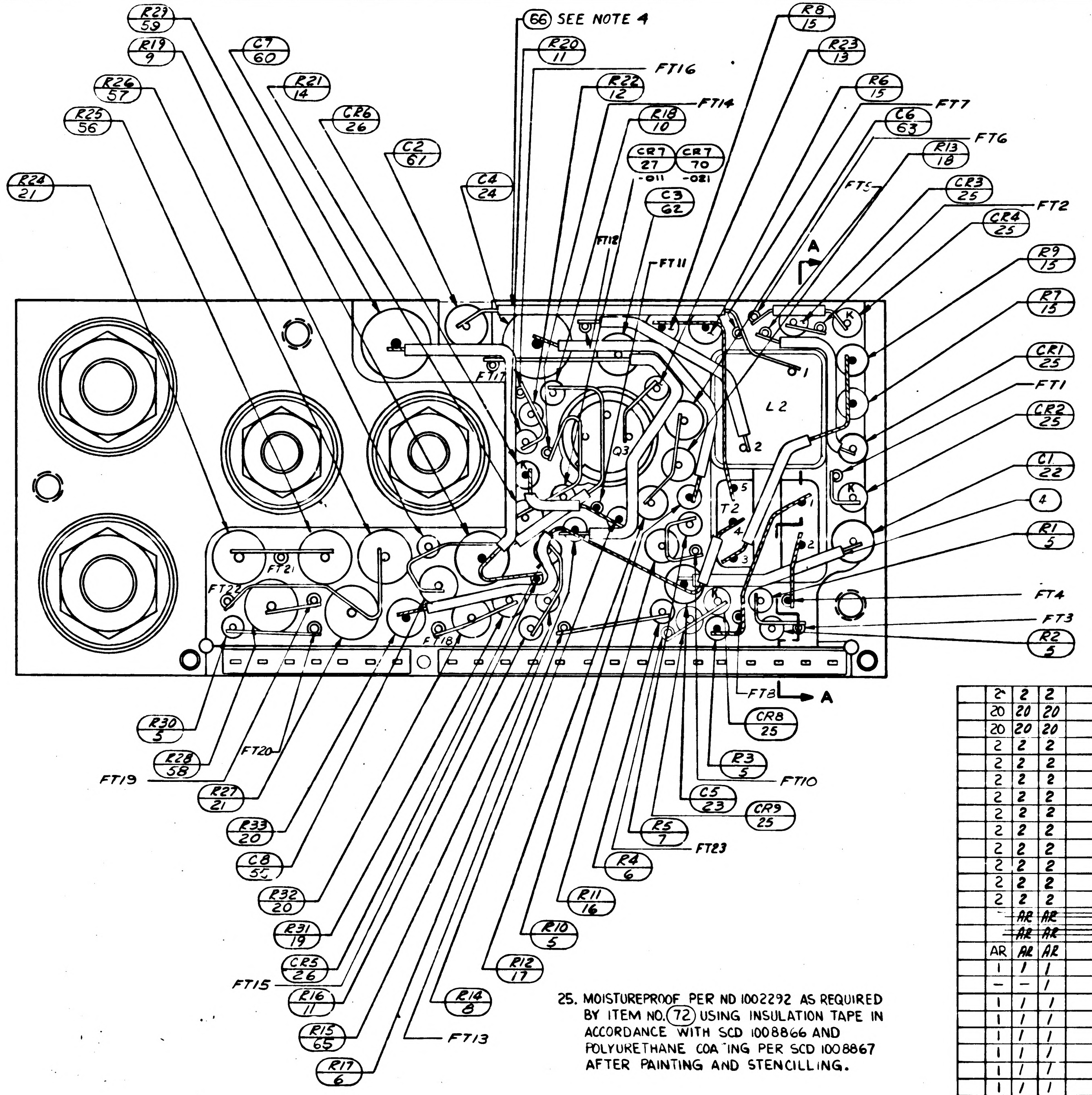

Q2
29
49
49
Q3
30
SEE NOTE 19

PARTIAL SECTION C-C

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± — ± — ± —	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DO NOT SCALE THIS DRAWING	DRAWN S Agne DATE 24 SEP 64 CHECKED [illegible] 26 SEP 64 APPROVAL [illegible] APPROVAL [illegible] 10/13/64	GIMBAL SERVO AMPLIFIER MODULE ASSY	
MATERIAL	NASA APPROVAL [illegible] 10-20-64	CODE IDENT NO. 80230	SIZE E 1007540
CONTRACT NAS 9-497	MIT APPROVAL [illegible]	SCALE 4:1	SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A	C-6	REVISED PER TDRR17354		12-MAR-65	M.G. / CP
B		REVISED PER TDRR 17610		25 MAR 65	HTO / C7P
C		REVISED PER TDRR 19453		2-JUN 65	EF
D		REVISED PER TDRR 19506		9 JUN 65	W.J.K. / RWH
E		REVISED PER TDRR 20143		19 JUN 65	DWD
F		REVISED PER TDRR 22942		20 OC- 65	LK / AU
G		REVISED PER TDRR 23888		16 NOV. 65	JWP
H		REVISED PER TDRR 26397		22 FEB 66	RLP





NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTION TO BE MADE BY WELDING PER ND 1002005.
3. SOLDER PER ND 1002071.
4. USE MIL-I-631, TYPE F, FORM U, GRADE C, CLASS I, CATEGORY I, IN 2 PLACES ONLY - SECURE IN PLACE PER ND 1002004. TYPE I
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND IT'S RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .005. REMOVE ALL FLASHING.
7. ASSEMBLE PER ND1002136.
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD J.
10. MOUNTING TORQUE FOR ITEM ㊿ 12 IN-LBS ± 2 IN-LBS.
11. MOUNTING TORQUE FOR ITEM (51) 24 IN-LBS ± 2 IN-LBS.
12. BROKEN PATHS ON ITEMS ② AND ③ INDICATES SLEEVING.
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
14. ~~BOND ITEM 67 TO ITEM 53 PER ND 1002297.~~
15. ON ITEMS 2 & 3:
    - A. FT( ) INDICATES FEEDTHRU
    - B. K INDICATES CATHODE SIDE OF DIODE
    - C. C INDICATES COLLECTOR LEAD OF TRANSISTOR
    - D. B INDICATES BASE LEAD OF TRANSISTOR
    - E. E INDICATES EMITTER LEAD OF TRANSISTOR
    - F. C( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR
    - G. B( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
    - H. E( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR
16. AT FINAL TEST C2 TO BE SELECTED FROM CHART PER ATP 1007040
17. PROCURE PER PS 1007040.
18. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN
19. FILL PER ND1002117
20. AR DENOTES AS REQUIRED
21. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP & BOTTOM INSULATORS TO THE HEATSINK & COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
22. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
23. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
24. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
25. MOISTUREPROOF PER ND 1002292 AS REQUIRED BY ITEM NO. (72) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.

C2 SEE NOTE 16	
PART NO.	VALUE UF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
1010264-6	.0027

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED	031	021	011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	AR	–	–		72	SEE NOTE 25	MOISTUREPROOFING
	AR	AR	AR		71	1010848-2	WIRE-ELECTRICAL, NICKEL
	1	1	–		70	1010830-9	SEMICONDUCTOR DEVICE, DIODE
	1	1	1		69	1008540-7	GASKET, CONNECTOR MINIATURE
	1	1	–		68	1010710	TRANSFORMER
	X	X	–		REF	1009534	SCHEMATIC, ELECTRICAL
	1	1	1		67	1008540-15	GASKET, CONNECTOR-MINIATURE
	–	–	X		REF	1010024	SCHEMATIC, ELECTRICAL
	AR	AR	AR		66	SEE NOTE 4	INSULATION SLEEVING NO. 22
	1	1	1		65	1006750-75	RESISTOR
	AR	AR	AR		64	1006776-20	INSULATION SLEEVING, ELECTRICAL
	1	1	1		63	1010279-9	CAPACITOR
	1	1	1		62	1010264-12	CAPACITOR
	1	1	1		61	SEE NOTE 16	CAPACITOR
	1	1	1		60	1010320-6	CAPACITOR
	1	1	1		59	1010389-94	RESISTOR, FIXED
	1	1	1		58	1010399-16	RESISTOR, FIXED
	1	1	1		57	1010389-47	RESISTOR, FIXED
	1	1	1		56	1010399-31	RESISTOR, FIXED
	1	1	1		55	1010279-228	CAPACITOR
	2	2	2		54	1008024-2	WASHER, INSULATOR
	20	20	20		53	1006775	INSULATOR
	20	20	20		52	1006782-5	CONTACT
	2	2	2		51	MS20341-416B	NUT
	2	2	2		50	MS20341-10B	NUT
	2	2	2		49	1008025-2	BUSHING, INSULATOR
	2	2	2		48	1008021-1	BUSHING, INSULATOR
	2	2	2		47	1008021-2	BUSHING, INSULATOR
	2	2	2		46	1008024-3	WASHER, INSULATOR
	2	2	2		45	1008024-4	WASHER, INSULATOR
	2	2	2		44	1008071-5	WASHER, FLAT
	2	2	2		43	1008024-1	WASHER, INSULATOR
	2	2	2		42	1008071-2	WASHER, FLAT
		~~AR~~	~~AR~~		~~41~~	~~1006757-8~~	~~WIRE, ELECTRICAL~~
		~~AR~~	~~AR~~		~~40~~	~~1006776-22~~	~~INSULATION SLEEVING, ELECTRICAL~~
	AR	AR	AR		39	1006757-1	WIRE, ELECTRICAL
	1	1	1		38	1010328	TRANSFORMER
	–	–	1		37	1010327	TRANSFORMER
	1	1	1		36	1010277-9	REACTOR
	1	1	1		35	1010277-8	REACTOR
	1	1	1		34	1010273-1	TRANSISTOR
	1	1	1		33	1010437	TRANSISTOR
	1	1	1		32	1010271	TRANSISTOR
	1	1	1		31	1010269-1	TRANSISTOR
	1	1	1		30	1010270	TRANSISTOR
	1	1	1		29	1010345-1	TRANSISTOR
	1	1	1		28	1010252-1	TRANSISTOR
	–	≠	1		27	1010286-9	SEMICONDUCTOR DEVICE, DIODE
	2	2	2		26	1010372-15	SEMICONDUCTOR DEVICE, DIODE
	6	6	6		25	1010392-1	SEMICONDUCTOR DEVICE, DIODE
	1	1	1		24	1010320-11	CAPACITOR, FIXED
	1	1	1		23	1010279-220	CAPACITOR, FIXED
	1	1	1		22	1010264-9	CAPACITOR, FIXED
	2	2	2		21	1010278-39	RESISTOR, FIXED
	2	2	2		20	1010377-66	RESISTOR, FIXED
	1	1	1		19	1010364-43	RESISTOR, FIXED
	1	1	1		18	1010364-719	RESISTOR, FIXED
	1	1	1		17	1010364-465	RESISTOR, FIXED
	1	1	1		16	1010364-635	RESISTOR, FIXED
	4	4	4		15	1010364-443	RESISTOR, FIXED
	1	1	1		14	1006760-35	RESISTOR, FIXED
	1	1	1		13	1006750-40	RESISTOR, FIXED
	1	1	1		12	1006750-53	RESISTOR, FIXED
	2	2	2		11	1006750-51	RESISTOR, FIXED
	1	1	1		10	1006750-70	RESISTOR, FIXED
	1	1	1		9	1006750-44	RESISTOR, FIXED
	1	1	1		8	1006750-60	RESISTOR, FIXED
	1	1	1		7	1006750-48	RESISTOR, FIXED
	2	2	2		6	1006750-80	RESISTOR, FIXED
	5	5	5		5	1006750-73	RESISTOR, FIXED
	AR	AR	AR		4	1006776-21	INSULATION SLEEVING, ELECTRICAL
	1	1	1		3	1015687	INSULATOR
	1	1	1		2	1015686	INSULATOR
	1	1	1		1	1015685	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ XXX ± .005 +
- XX ± .02 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT INSTRUMENTATION LAB
Cambridge Mass
DRAWN S. Agne DATE 24 SEP 64
CHECKED Q. Ulrich 26 SEP 64
APPROVAL
APPROVAL
NASA APPROVAL 10-20-64
MIT APPROVAL

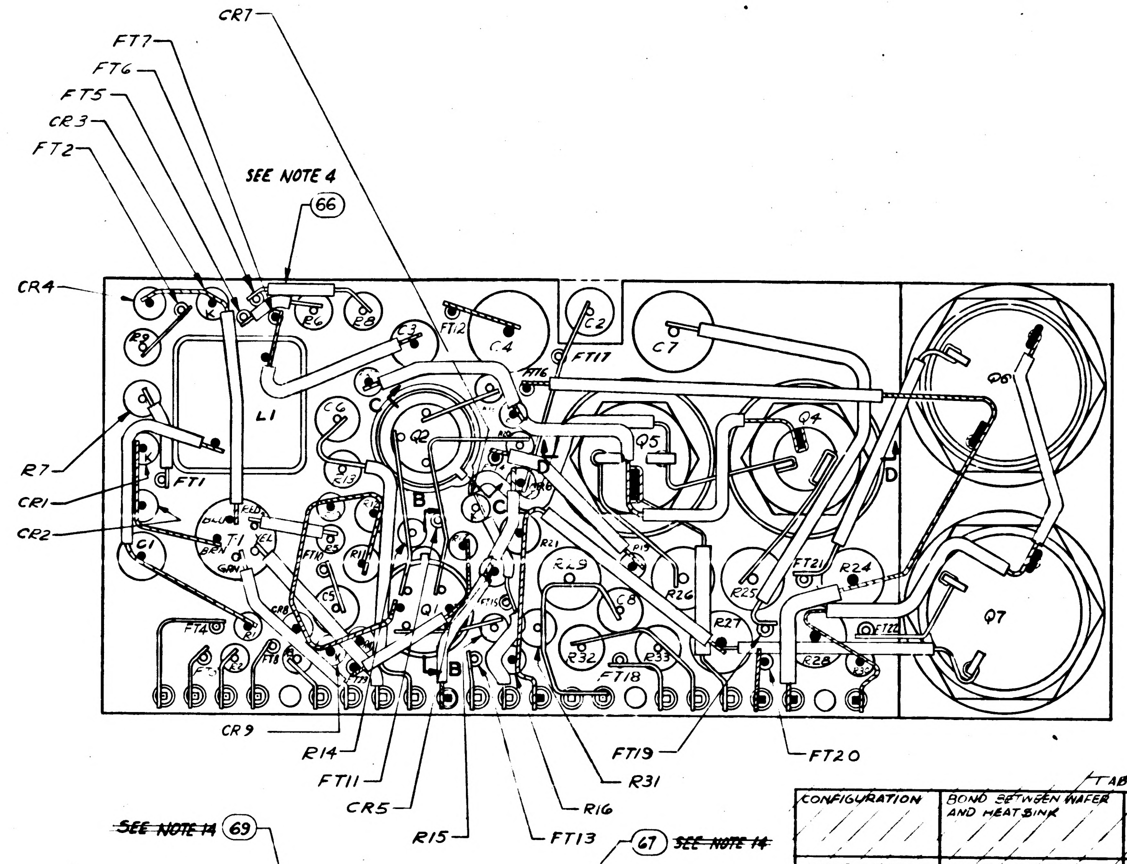
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL SERVO AMPLIFIER
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007540
SCALE 4:1
SHEET 1 OF 2

1007540

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR-17354		12-MAR 65	M.G. CP
B		REVISED PER TDRR 17610		25 MAR 65	HTO CJP
C		REVISED PER TDRR 19453		2-JUN 65	JM
D		REVISED PER TDRR 19506		9 JUN 65	WJK RWH
E		REVISED PER TDRR 20143		19 JUN 65	DKB
F		REVISED PER TDRR 22942		12 OCT 65	LK AU
G		REVISION STATUS CHANGED		16 NOV. 65	JNP
H		REVISION STATUS CHANGED		23 FEB 66	RP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SEE NOTE 4
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C7
C2
C8
FT1
FT12
FT17
Q2
Q5
Q4
Q6
Q7
Q1
T1
G1
B
C
D
FT14
FT21
R24
R26
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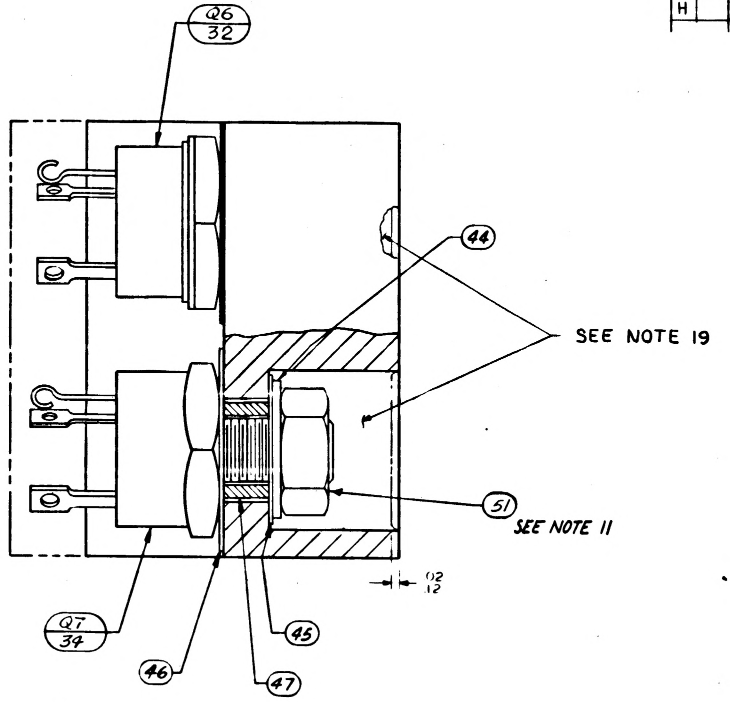
R31
FT20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SEE NOTE 11
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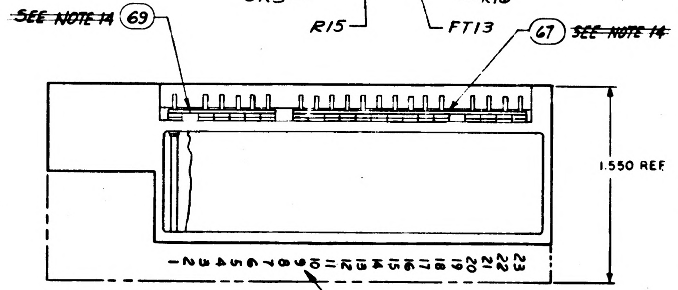
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67 ~~SEE NOTE 14~~
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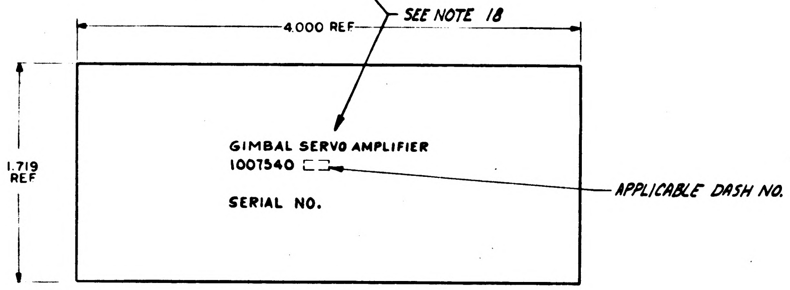
TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	.03% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE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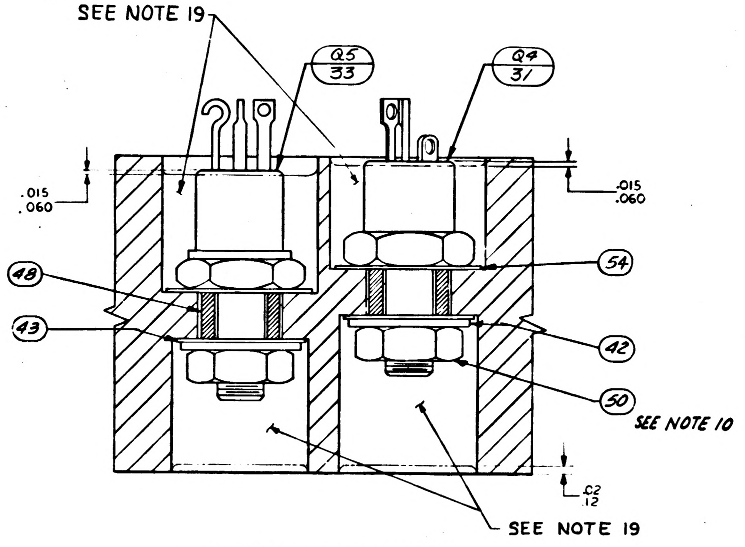
SEE NOTE 18
1.719 REF
GIMBAL SERVO AMPLIFIER
1007540 ▭
SERIAL NO.
APPLICABLE DASH NO.

MARKING VIEW
SCALE-2:1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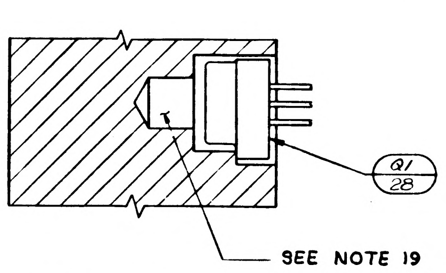
SEE NOTE 10
.02
.12
SEE NOTE 19

PARTIAL SECTION D-D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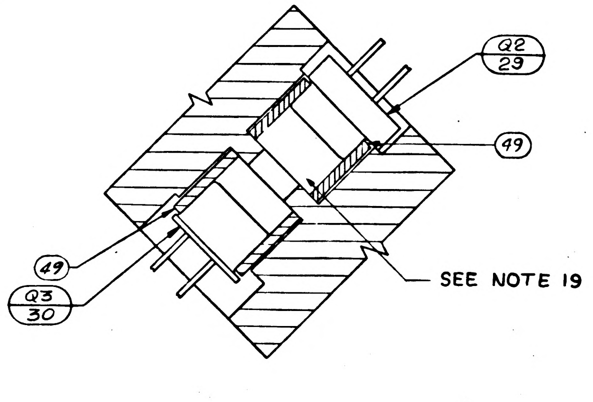
SEE NOTE 19

PARTIAL SECTION B-B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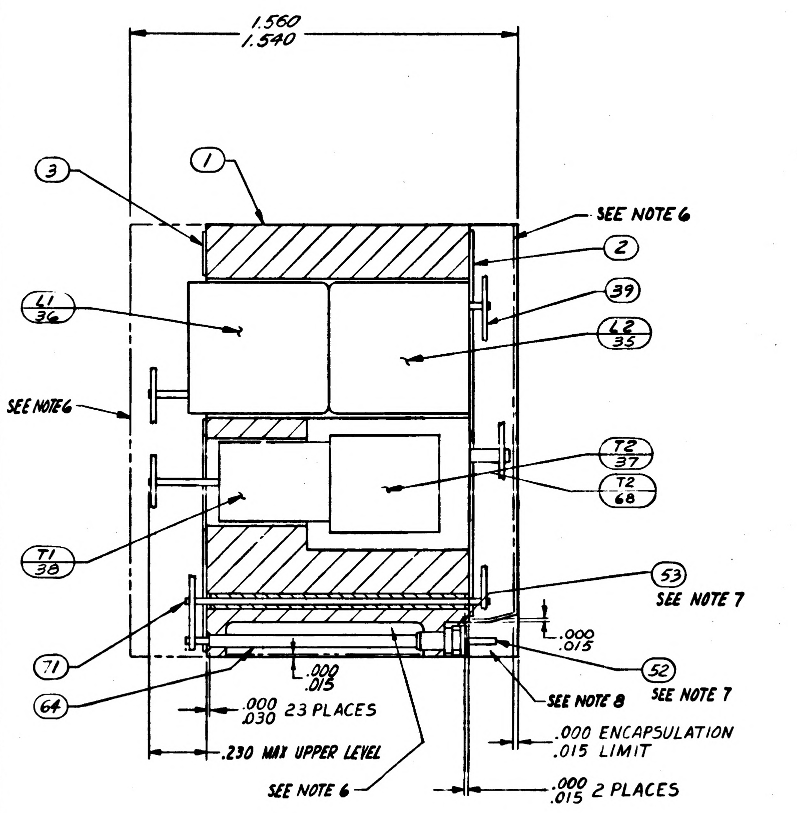
Q3
30
SEE NOTE 19

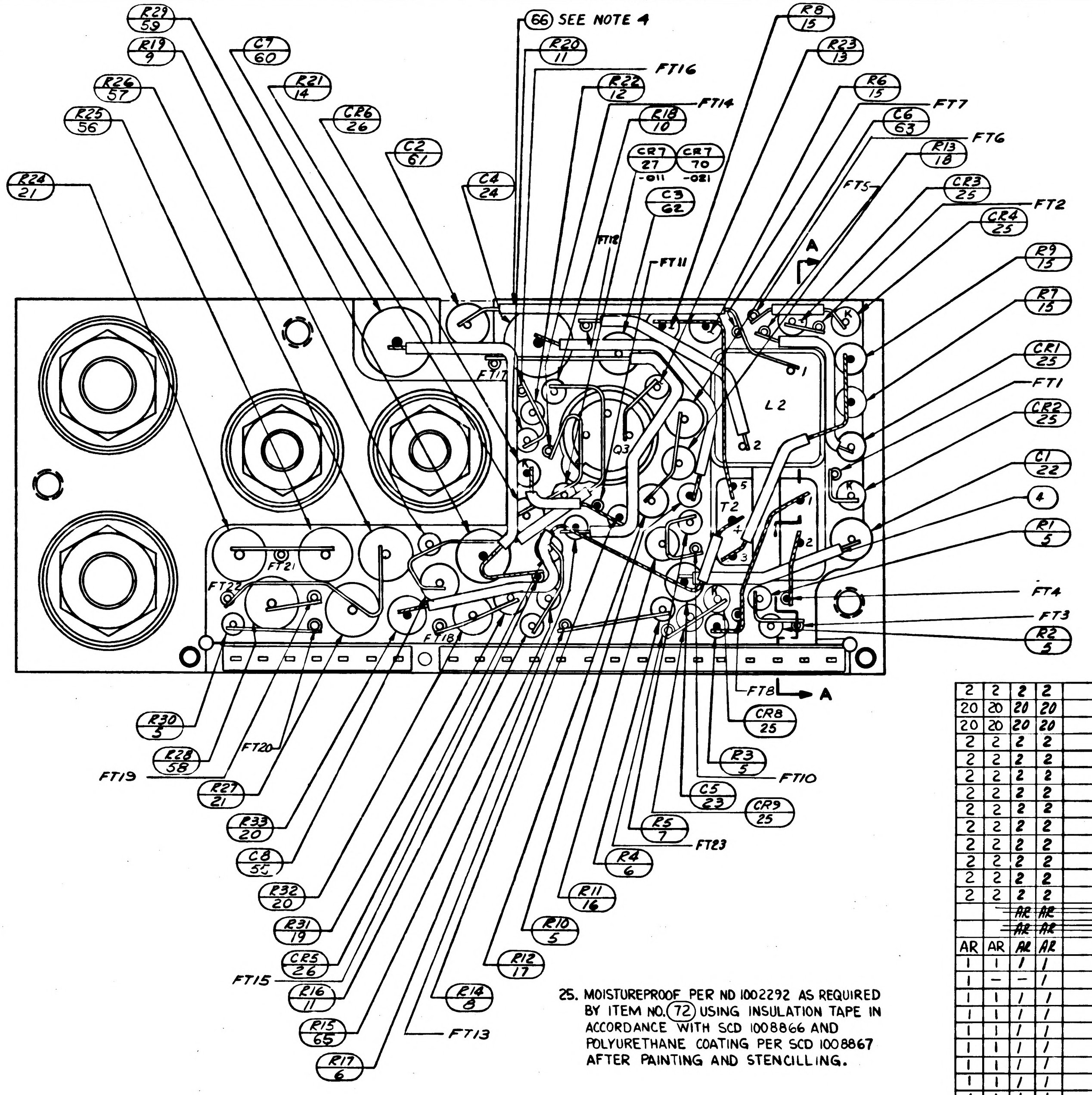
PARTIAL SECTION C-C

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± — DECIMALS ± — ANGLES ± —	MIT INSTRUMENTATION LAB Cambridge Mass	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN Slagne DATE 24 SEP 64 CHECKED 26 SEP 64 APPROVAL APPROVAL	GIMBAL SERVO AMPLIFIER MODULE ASSY
MATERIAL	NASA APPROVAL	CODE IDENT NO 80230 · SIZE E · 1007540
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 4:1 · SHEET 2 OF 2

1007540 H

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A	C-6	REVISED PER TDRR17354		12-MAR-65	M CF
B		REVISED PER TDRR 17610		25 MAR 65	HTC
C		REVISED PER TDRR 19453		3-JUN-65	EF
D		REVISED PER TDRR 19506		9 JUN 65	
E		REVISED PER TDRR 20143		19 JUN 65	
F		REVISED PER TDRR 22942		20 OCT 65	LK AU
G		REVISED PER TDRR 23888		3 JUL 65	
H		REVISED PER TDRR 26397		22 FEB 66	RLP
J		REVISED PER TDRR 26375		28 FEB 66	JMP





NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTION TO BE MADE BY WELDING PER ND 1002005.
3. SOLDER PER ND 1002071.
4. USE MIL-I-631, TYPE F, FORM U, GRADE C, CLASS I, CATEGORY I, IN 2 PLACES ONLY - SECURE IN PLACE PER ND 1002004. TYPE I
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND IT'S RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .005. REMOVE ALL FLASHING.
7. ASSEMBLE PER ND1002136.
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD J.
10. MOUNTING TORQUE FOR ITEM (50) 12 IN-LBS ± 2 IN-LBS.
11. MOUNTING TORQUE FOR ITEM (51) 24 IN-LBS ± 2 IN-LBS.
12. BROKEN PATHS ON ITEMS ② AND ③ INDICATES SLEEVING.
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
14. ~~BOND ITEM 67 TO ITEM 58 PER ND 1002297.~~
15. ON ITEMS 2 & 3:
    - A. FT( ) INDICATES FEEDTHRU
    - B. K INDICATES CATHODE SIDE OF DIODE
    - C. C INDICATES COLLECTOR LEAD OF TRANSISTOR
    - D. B INDICATES BASE LEAD OF TRANSISTOR
    - E. E INDICATES EMITTER LEAD OF TRANSISTOR
    - F. C( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR
    - G. B( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
    - H. E( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR
16. AT FINAL TEST C2 TO BE SELECTED FROM CHART PER ATP 1007040
17. PROCURE PER PS 1007040.
18. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN
19. FILL PER ND1002117
20. AR DENOTES AS REQUIRED
21. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP & BOTTOM INSULATORS TO THE HEATSINK & COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
22. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATINGS AS INDICATED IN TABLE I.~~
23. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
24. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
25. MOISTUREPROOF PER ND 1002292 AS REQUIRED BY ITEM NO. (72) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.

C2 SEE NOTE 16	
PART NO.	VALUE UF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
1010264-6	.0027

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 041	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
AR	AR	—	—		72	SEE NOTE 25	MOISTUREPROOFING
AR	AR	AR	AR		71	1010848-2	WIRE-ELECTRICAL, NICKEL
-	1	1	-		70	1010830-9	SEMICONDUCTOR DEVICE, DIODE
1	1	1	1		69	1008540-7	GASKET, CONNECTOR MINIATURE
-	1	1	-		68	1010710	TRANSFORMER
-	☒	☒	-		REF	1009534	SCHEMATIC, ELECTRICAL
1	1	1	1		67	1008540-15	GASKET, CONNECTOR-MINIATURE
☒	—	—	☒		REF	1010024	SCHEMATIC, ELECTRICAL
AR	AR	AR	AR		66	SEE NOTE 4	INSULATION SLEEVING NO.22
1	1	1	1		65	1006750-75	RESISTOR
AR	AR	AR	AR		64	1006776-20	INSULATION SLEEVING, ELECTRICAL
1	1	1	1		63	1010279-9	CAPACITOR
1	1	1	1		62	1010264-12	CAPACITOR
1	1	1	1		61	SEE NOTE 16	CAPACITOR
1	1	1	1		60	1010320-6	CAPACITOR
1	1	1	1		59	1010389-94	RESISTOR, FIXED
1	1	1	1		58	1010399-16	RESISTOR, FIXED
1	1	1	1		57	1010389-47	RESISTOR, FIXED
1	1	1	1		56	1010399-31	RESISTOR, FIXED
1	1	1	1		55	1010279-228	CAPACITOR
2	2	2	2		54	1008024-2	WASHER, INSULATOR
20	20	20	20		53	1006775	INSULATOR
20	20	20	20		52	1006782-5	CONTACT
2	2	2	2		51	MS20341-416B	NUT
2	2	2	2		50	MS20341-10B	NUT
2	2	2	2		49	1008025-2	BUSHING, INSULATOR
2	2	2	2		48	1008021-1	BUSHING, INSULATOR
2	2	2	2		47	1008021-2	BUSHING, INSULATOR
2	2	2	2		46	1008024-3	WASHER, INSULATOR
2	2	2	2		45	1008024-4	WASHER, INSULATOR
2	2	2	2		44	1008071-5	WASHER, FLAT
2	2	2	2		43	1008024-1	WASHER, INSULATOR
2	2	2	2		42	1008071-2	WASHER, FLAT
		~~AR~~	~~AR~~		~~41~~	~~1006757-8~~	~~WIRE, ELECTRICAL~~
		~~AR~~	~~AR~~		~~40~~	~~1006776-22~~	~~INSULATION SLEEVING, ELECTRICAL~~
AR	AR	AR	AR		39	1006757-1	WIRE, ELECTRICAL
1	1	1	1		38	1010328	TRANSFORMER
1	—	—	1		37	1010327	TRANSFORMER
1	1	1	1		36	1010277-9	REACTOR
1	1	1	1		35	1010277-8	REACTOR
1	1	1	1		34	1010273-1	TRANSISTOR
1	1	1	1		33	1010437	TRANSISTOR
1	1	1	1		32	1010271	TRANSISTOR
1	1	1	1		31	1010269-1	TRANSISTOR
1	1	1	1		30	1010270	TRANSISTOR
1	1	1	1		29	1010345-1	TRANSISTOR
1	1	1	1		28	1010252-1	TRANSISTOR
1	—	~~1~~ —	1		27	1010286-9	SEMICONDUCTOR DEVICE, DIODE
2	2	2	2		26	1010372-15	SEMICONDUCTOR DEVICE, DIODE
6	6	6	6		25	1010392-1	SEMICONDUCTOR DEVICE, DIODE
1	1	1	1		24	1010320-11	CAPACITOR, FIXED
1	1	1	1		23	1010279-220	CAPACITOR, FIXED
1	1	1	1		22	1010264-9	CAPACITOR, FIXED
2	2	2	2		21	1010278-39	RESISTOR, FIXED
2	2	2	2		20	1010377-66	RESISTOR, FIXED
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1	1	1	1		16	1010364-635	RESISTOR, FIXED
4	4	4	4		15	1010364-443	RESISTOR, FIXED
1	1	1	1		14	1006760-35	RESISTOR, FIXED
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1	1	1	1		9	1006750-44	RESISTOR, FIXED
1	1	1	1		8	1006750-60	RESISTOR, FIXED
1	1	1	1		7	1006750-48	RESISTOR, FIXED
2	2	2	2		6	1006750-80	RESISTOR, FIXED
5	5	5	5		5	1006750-73	RESISTOR, FIXED
AR	AR	AR	AR		4	1006776-21	INSULATION SLEEVING, ELECTRICAL
1	1	1	1		3	1015687	INSULATOR
1	1	1	1		2	1015686	INSULATOR
1	1	1	1		1	1015685	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ XXX ± .005 +
- XX ± .02 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN S. Agne DATE 24 SEP 64
CHECKED A. Uesevich 26 SEP 64
APPROVAL
APPROVAL
NASA APPROVAL 10-20-64
MIT APPROVAL

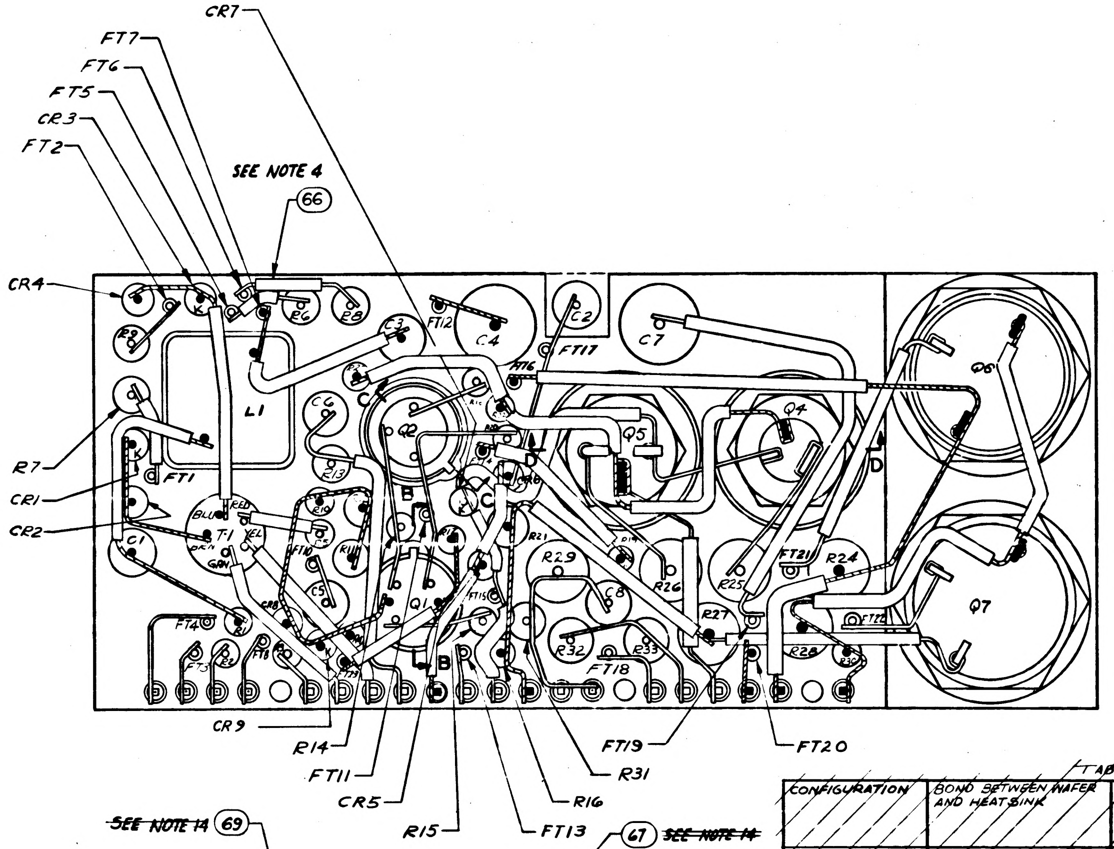
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL SERVO AMPLIFIER
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007540
SCALE 4:1
SHEET 1 OF 2

1007540 J

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
A		REVISED PER TDRR-17354		12-MAR 65	MG CP
B		REVISED PER TDRR 17610		25 MAR 65	HTC
C		REVISED PER TDRR 19453			JM EF
D		REVISED PER TDRR 19506		65	WJK
E		REVISED PER TDRR 20149		19	DKD
F		REVISED PER TDRR 22942		65	K
G		REVISION STATUS CHANGED			VP
H		REVISION STATUS CHANGED		23 FEB 66	RP
J		REVISION STATUS CHANGED		28 FEB 66	JWP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R24
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C8
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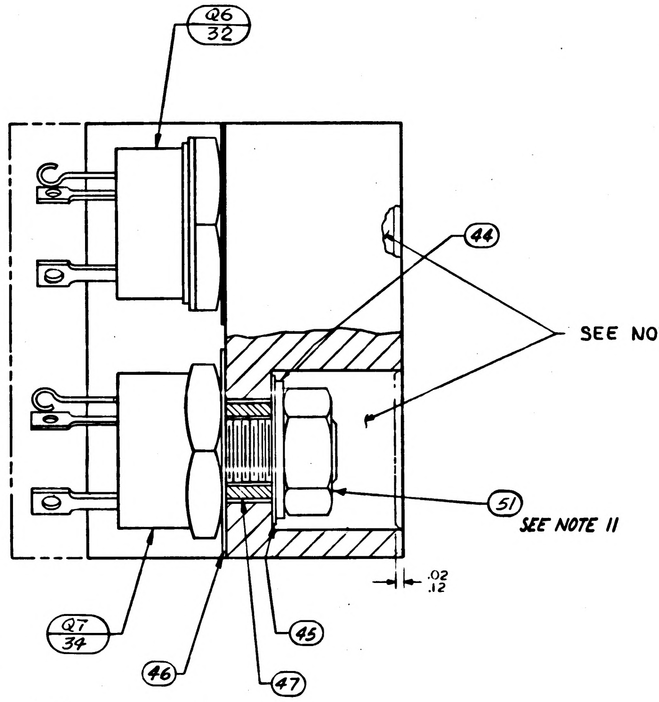
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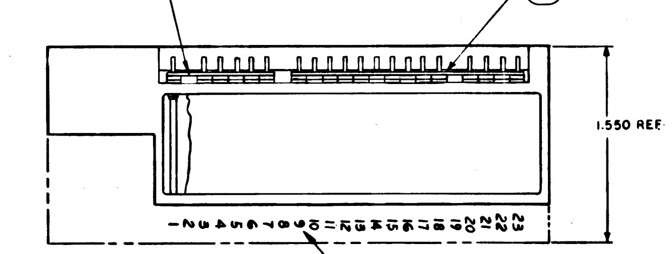
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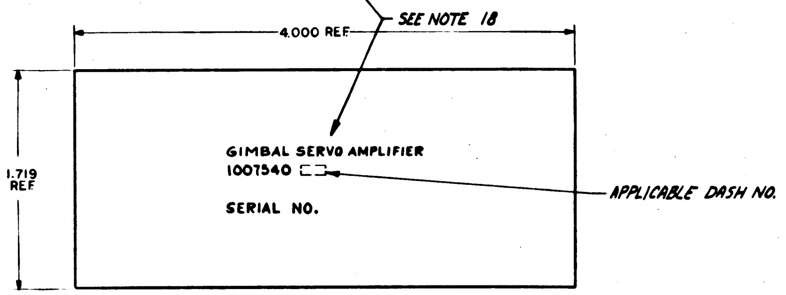
TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE


SEE NOTE 18
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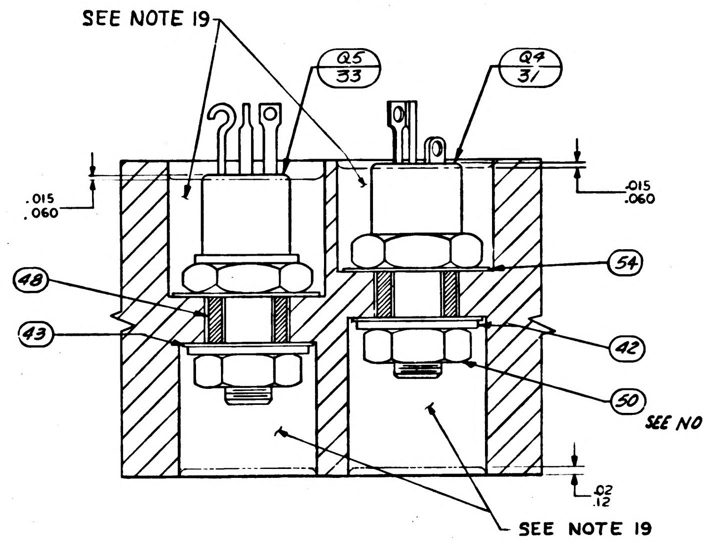
1.719 REF
GIMBAL SERVO AMPLIFIER
1007540 ▭
SERIAL NO.
APPLICABLE DASH NO.

MARKING VIEW
SCALE - 2:1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43
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42
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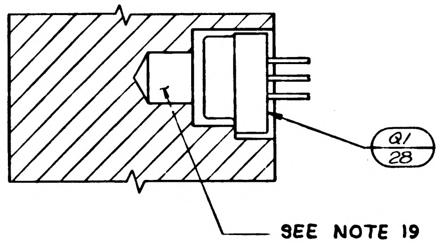
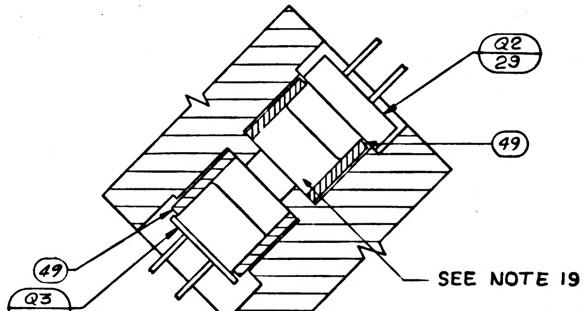
SEE NOTE 10
.02
.12
SEE NOTE 19

PARTIAL SECTION D-D


Q1
28
SEE NOTE 19

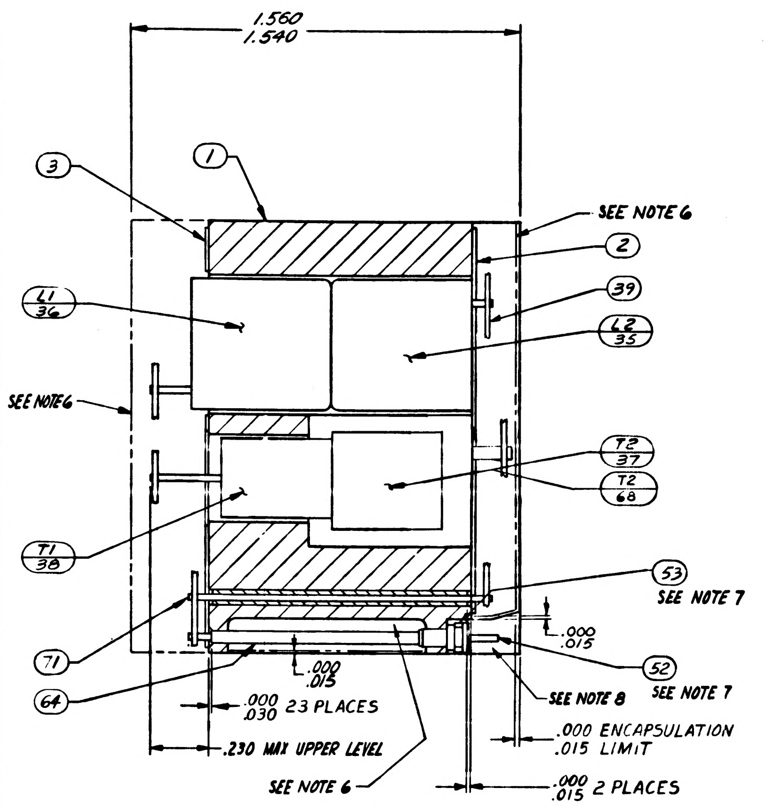
PARTIAL SECTION B-B

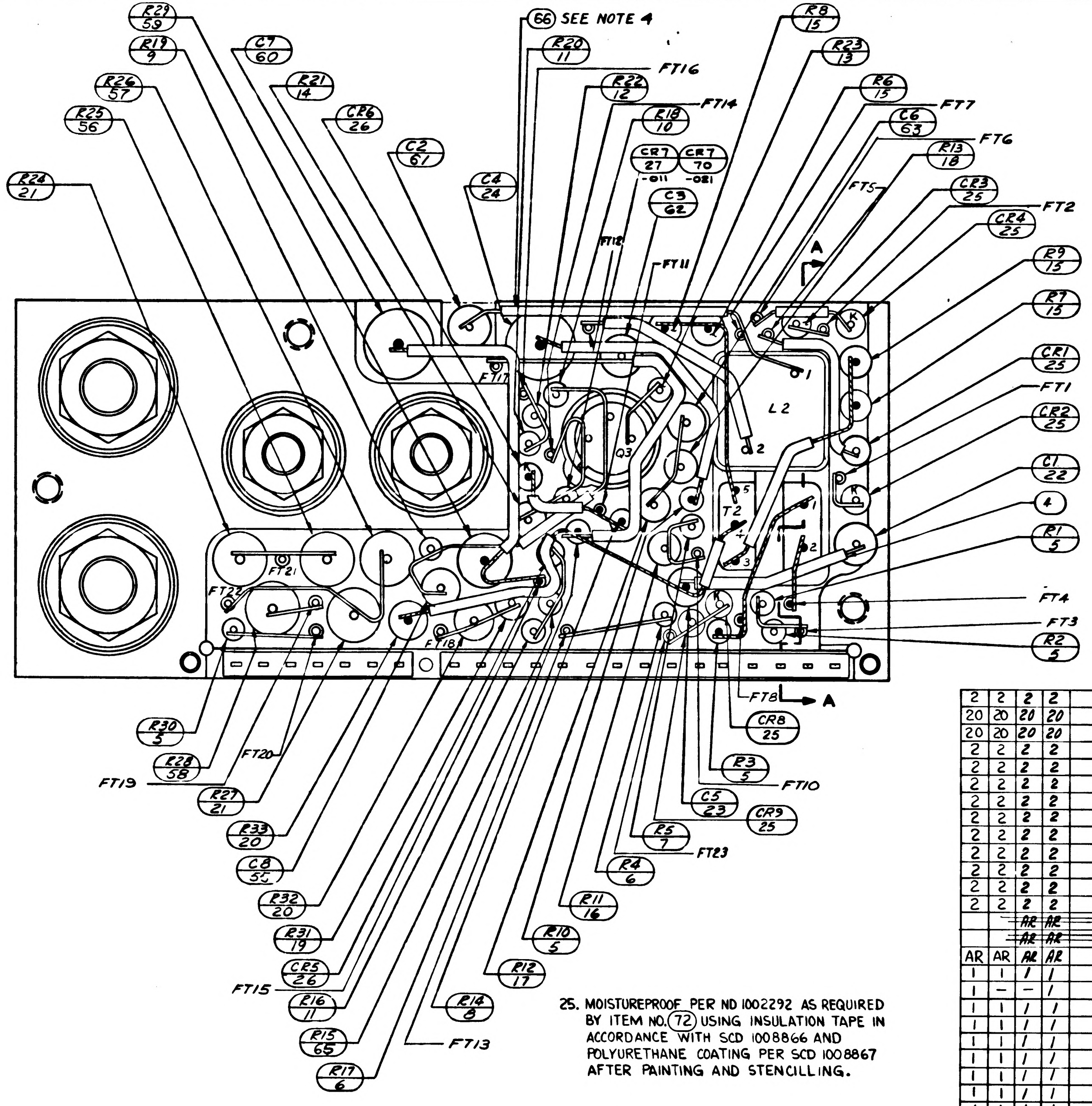

Q2
29
49
49
Q3
30
SEE NOTE 19

PARTIAL SECTION C-C

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± — ± — ± —	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN Sloane DATE 24 SEP 64 CHECKED C. Udomich 26 SEP 64 APPROVAL APPROVAL	GIMBAL SERVO AMPLIFIER MODULE ASSY
MATERIAL	NASA APPROVAL 10-23-64	CODE IDENT NO. 80230 · SIZE E · 1007540
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 4:1 · SHEET 2 OF 2

SYM	ZONE	REVISIONS DESCRIPTION	CHG NO.	DATE	APPD.
A	C-6	REVISED PER TDRR 17354		12-MAR-65	M.G. CP
B		REVISED PER TDRR 17610		25 MAR 65	HTC
C		REVISED PER TDRR 19453		3-JUN-65	EF
D		REVISED PER TDRR 19506		9-JUN 65	
E		REVISED PER TDRR 20143		19 JUN 65	
F		REVISED PER TDRR 22942		30 -65	AU
G		REVISED PER TDRR 23888			
H		REVISED PER TDRR 26397		22 FEB 66	RLP
J		REVISED PER TDRR 26375		28 FEB 66	JIM
K		REVISION STATUS CHANGED			





NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTION TO BE MADE BY WELDING PER ND 1002005.
3. SOLDER PER ND 1002071.
4. USE MIL-I-631, TYPE F, FORM U, GRADE C, CLASS I, CATEGORY I, IN 2 PLACES ONLY - SECURE IN PLACE PER ND 1002004. TYPE I
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND IT'S RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .005. REMOVE ALL FLASHING.
7. ASSEMBLE PER ND1002136.
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD J.
10. MOUNTING TORQUE FOR ITEM (50) 12 IN-LBS ± 2 IN-LBS.
11. MOUNTING TORQUE FOR ITEM (51) 24 IN-LBS ± 2 IN-LBS.
12. BROKEN PATHS ON ITEMS ② AND ③ INDICATES SLEEVING.
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
14. ~~BOND ITEM 67 TO ITEM 58 PER ND 1002237.~~
15. ON ITEMS 2 & 3:
    - A. FT( ) INDICATES FEEDTHRU
    - B. K INDICATES CATHODE SIDE OF DIODE
    - C. C INDICATES COLLECTOR LEAD OF TRANSISTOR
    - D. B INDICATES BASE LEAD OF TRANSISTOR
    - E. E INDICATES EMITTER LEAD OF TRANSISTOR
    - F. C( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR
    - G. B( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
    - H. E( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR
16. AT FINAL TEST C2 TO BE SELECTED FROM CHART PER ATP 1007040
17. PROCURE PER PS 1007040.
18. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN
19. FILL PER ND1002117
20. AR DENOTES AS REQUIRED
21. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP & BOTTOM INSULATORS TO THE HEATSINK & COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
22. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
23. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
24. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
25. MOISTUREPROOF PER ND 1002292 AS REQUIRED BY ITEM NO. (72) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.

C2 SEE NOTE 16	
PART NO.	VALUE UF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
1010264-6	.0027

QUANTITY REQUIRED 041	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
AR	AR	—	—		72	SEE NOTE 25	MOISTUREPROOFING
AR	AR	AR	AR		71	1010848-2	WIRE-ELECTRICAL, NICKEL
-	1	1	-		70	1010830-9	SEMICONDUCTOR DEVICE, DIODE
1	1	1	1		69	1008540-7	GASKET, CONNECTOR MINIATURE
-	1	1	-		68	1010710	TRANSFORMER
-	☒	☒	-		REF	1009534	SCHEMATIC, ELECTRICAL
1	1	1	1		67	1008540-15	GASKET, CONNECTOR-MINIATURE
☒	—	—	☒		REF	1010024	SCHEMATIC, ELECTRICAL
AR	AR	AR	AR		66	SEE NOTE 4	INSULATION SLEEVING NO. 22
1	1	1	1		65	1006750-75	RESISTOR
AR	AR	AR	AR		64	1006776-20	INSULATION SLEEVING, ELECTRICAL
1	1	1	1		63	1010279-9	CAPACITOR
1	1	1	1		62	1010264-12	CAPACITOR
1	1	1	1		61	SEE NOTE 16	CAPACITOR
1	1	1	1		60	1010320-6	CAPACITOR
1	1	1	1		59	1010389-94	RESISTOR, FIXED
1	1	1	1		58	1010399-16	RESISTOR, FIXED
1	1	1	1		57	1010389-47	RESISTOR, FIXED
1	1	1	1		56	1010399-31	RESISTOR, FIXED
1	1	1	1		55	1010279-228	CAPACITOR

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 041	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	2	2		54	1008024-2	WASHER, INSULATOR
20	20	20	20		53	1006775	INSULATOR
20	20	20	20		52	1006782-5	CONTACT
2	2	2	2		51	MS20341-416B	NUT
2	2	2	2		50	MS20341-10B	NUT
2	2	2	2		49	1008025-2	BUSHING, INSULATOR
2	2	2	2		48	1008021-1	BUSHING, INSULATOR
2	2	2	2		47	1008021-2	BUSHING, INSULATOR
2	2	2	2		46	1008024-3	WASHER, INSULATOR
2	2	2	2		45	1008024-4	WASHER, INSULATOR
2	2	2	2		44	1008071-5	WASHER, FLAT
2	2	2	2		43	1008024-1	WASHER, INSULATOR
2	2	2	2		42	1008071-2	WASHER, FLAT
		~~AR~~	~~AR~~		~~41~~	~~1006757-8~~	~~WIRE, ELECTRICAL~~
		~~AR~~	~~AR~~		~~40~~	~~1006776-22~~	~~INSULATION SLEEVING, ELECTRICAL~~
AR	AR	AR	AR		39	1006757-1	WIRE, ELECTRICAL
1	1	1	1		38	1010328	TRANSFORMER
1	—	—	1		37	1010327	TRANSFORMER
1	1	1	1		36	1010277-9	REACTOR
1	1	1	1		35	1010277-8	REACTOR
1	1	1	1		34	1010273-1	TRANSISTOR
1	1	1	1		33	1010437	TRANSISTOR
1	1	1	1		32	1010271	TRANSISTOR
1	1	1	1		31	1010269-1	TRANSISTOR
1	1	1	1		30	1010270	TRANSISTOR
1	1	1	1		29	1010345-1	TRANSISTOR
1	1	1	1		28	1010252-1	TRANSISTOR
1	—	~~—~~	1		27	1010286-9	SEMICONDUCTOR DEVICE, DIODE
2	2	2	2		26	1010372-15	SEMICONDUCTOR DEVICE, DIODE
6	6	6	6		25	1010392-1	SEMICONDUCTOR DEVICE, DIODE
1	1	1	1		24	1010320-11	CAPACITOR, FIXED
1	1	1	1		23	1010279-220	CAPACITOR, FIXED
1	1	1	1		22	1010264-9	CAPACITOR, FIXED
2	2	2	2		21	1010278-39	RESISTOR, FIXED
2	2	2	2		20	1010377-66	RESISTOR, FIXED
1	1	1	1		19	1010364-43	RESISTOR, FIXED
1	1	1	1		18	1010364-719	RESISTOR, FIXED
1	1	1	1		17	1010364-465	RESISTOR, FIXED
1	1	1	1		16	1010364-635	RESISTOR, FIXED
4	4	4	4		15	1010364-443	RESISTOR, FIXED
1	1	1	1		14	1006760-35	RESISTOR, FIXED
1	1	1	1		13	1006750-40	RESISTOR, FIXED
1	1	1	1		12	1006750-53	RESISTOR, FIXED
2	2	2	2		11	1006750-51	RESISTOR, FIXED
1	1	1	1		10	1006750-70	RESISTOR, FIXED
1	1	1	1		9	1006750-44	RESISTOR, FIXED
1	1	1	1		8	1006750-60	RESISTOR, FIXED
1	1	1	1		7	1006750-48	RESISTOR, FIXED
2	2	2	2		6	1006750-80	RESISTOR, FIXED
5	5	5	5		5	1006750-73	RESISTOR, FIXED
AR	AR	AR	AR		4	1006776-21	INSULATION SLEEVING, ELECTR.AL
1	1	1	1		3	1015687	INSULATOR
1	1	1	1		2	1015686	INSULATOR
1	1	1	1		1	1015685	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + - DECIMALS XXX ± .005 XX ± .02 ANGLES + -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN S. Agna DATE 24 SEP 64
CHECKED A. Ulrich 26 SEP 64
APPROVAL
APPROVAL
NASA APPROVAL 10-20-64
MIT APPROVAL

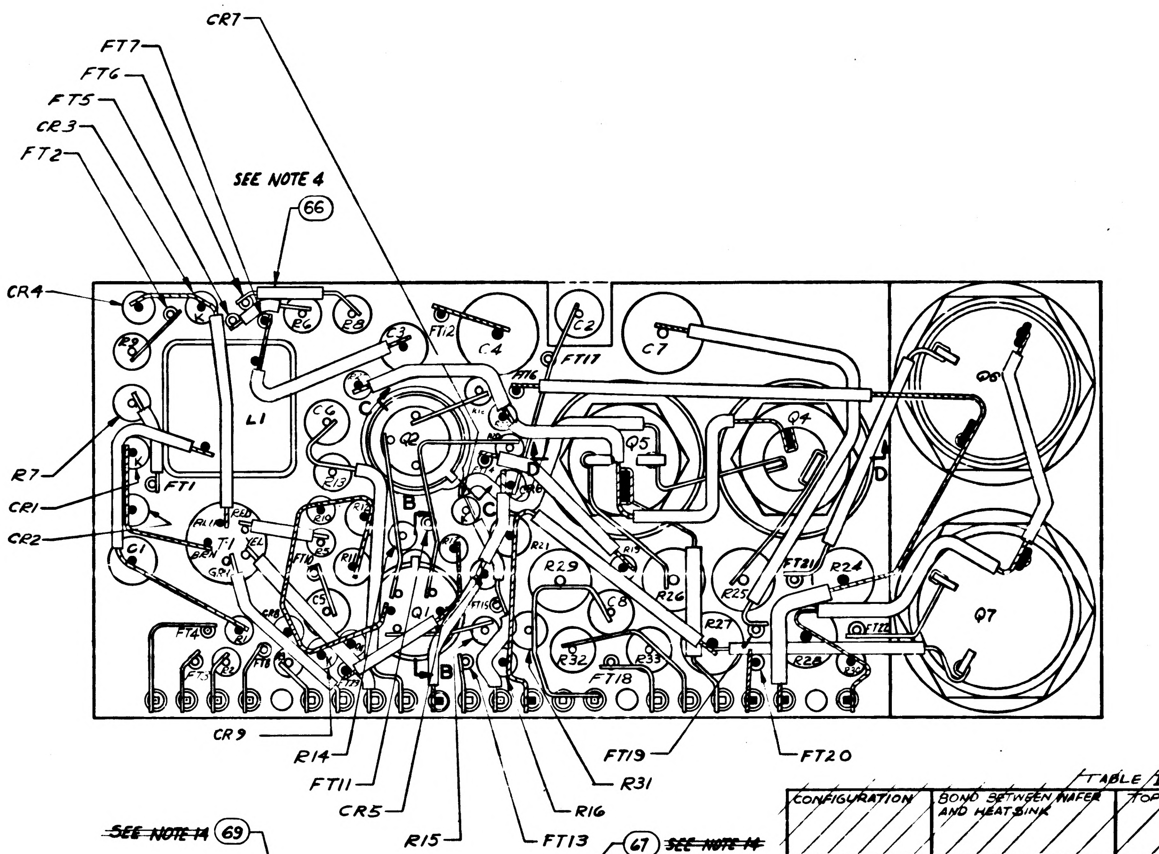
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL SERVO AMPLIFIER
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007540
SCALE 4:1
SHEET 1 OF 2

1007540

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
REVISIONS					
A		REVISED PER TDRR-17354		MAR 65	CP
B		REVISED PER TDRR 17610		25 MAR 65	HTD
C		REVISED PER TDRR 19253			
D		REVISED PER TDRR 19506		65	
E		REVISED PER TDRR 20143			DCD
F		REVISED PER TDRR 22942		65	
G		REVISION STATUS CHANGED			UP
H		REVISION STATUS CHANGED		23 FEB 66	
J		REVISION STATUS CHANGED		FEB 66	WP
K		REVISED PER TDRR 27430		66	


CR7
FT7
FT6
FT5
CR3
FT2
SEE NOTE 4
66
CR4
R7
CR1
CR2
L1
C1
T1
C2
C4
C7
FT12
FT16
FT17
Q2
Q4
Q5
Q6
Q7
B
FT1
FT14
FT15
FT18
FT21
R24
R25
R26
R27
R28
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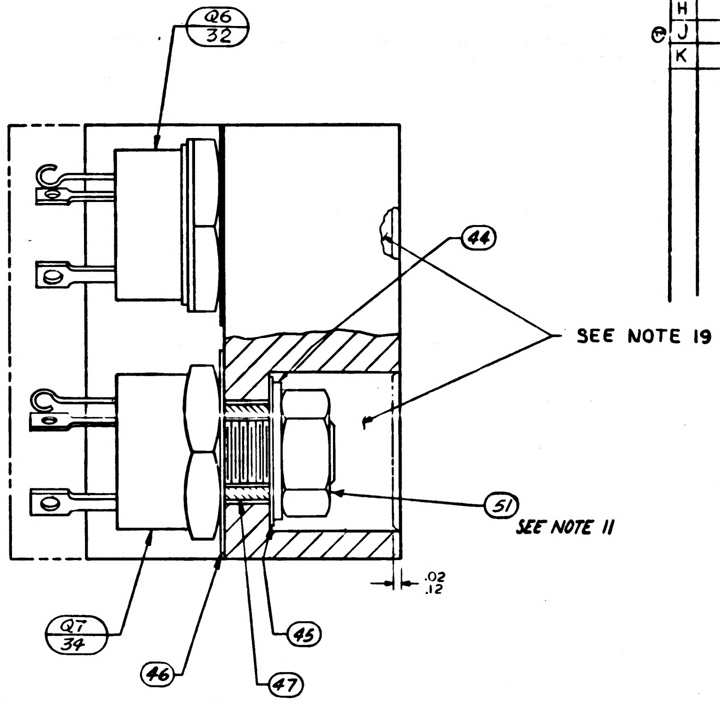
FT13
R16
R31
FT19
FT20


Q6
32
44
SEE NOTE 19
51
SEE NOTE 11
.02
.12
Q7
34
46
47
45

~~SEE NOTE 14~~ 69

67 ~~SEE NOTE 14~~

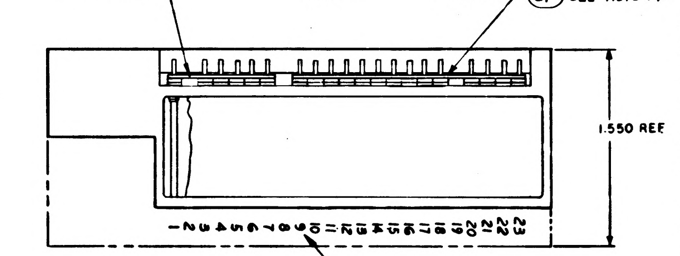
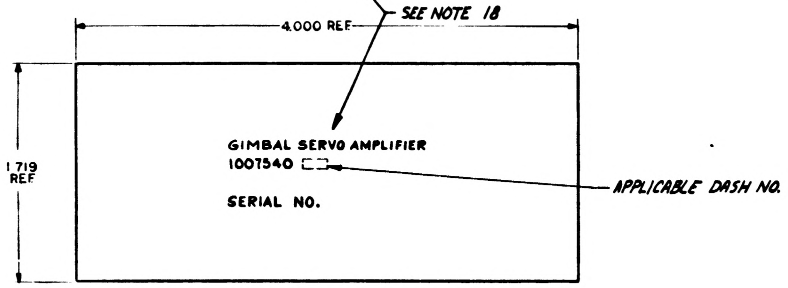

1.550 REF
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

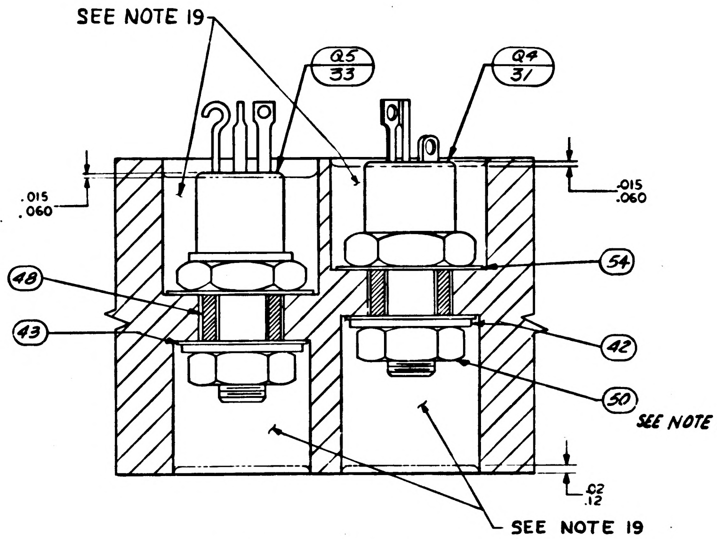
TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

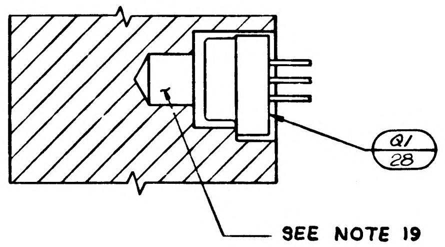
SEE NOTE 18


4.000 REF
1.719 REF
GIMBAL SERVO AMPLIFIER
1007540 ▭
SERIAL NO.
APPLICABLE DASH NO.

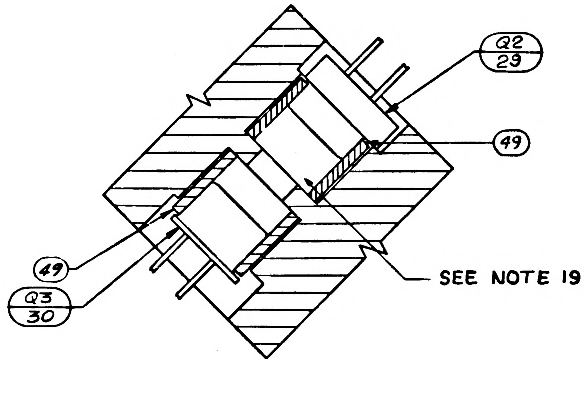
MARKING VIEW
SCALE - 2:1


SEE NOTE 19
Q5
33
Q4
31
.015
.060
.015
.060
48
43
54
42
50
SEE NOTE 10
.02
.12
SEE NOTE 19

PARTIAL SECTION D-D


Q1
28
SEE NOTE 19

PARTIAL SECTION B-B


Q2
29
49
49
Q3
30
SEE NOTE 19

PARTIAL SECTION C-C

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	MIT INSTRUMENTATION LAB CAMBRIDGE MASS DRAWN S Agne DATE 24 SEP 64 CHECKED A. Udonich 26 SEP 64 APPROVAL APPROVAL	MANNED SPACECRAFT CENTER HOUSTON, TEXAS GIMBAL SERVO AMPLIFIER MODULE ASSY
DO NOT SCALE THIS DRAWING MATERIAL	NASA APPROVAL	CODE IDENT NO. 80230 · SIZE E · 1007540
CONTRACT NAS9-497	MIT APPROVAL	SCALE 4:1 · SHEET 2 OF 2

1007540 K

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
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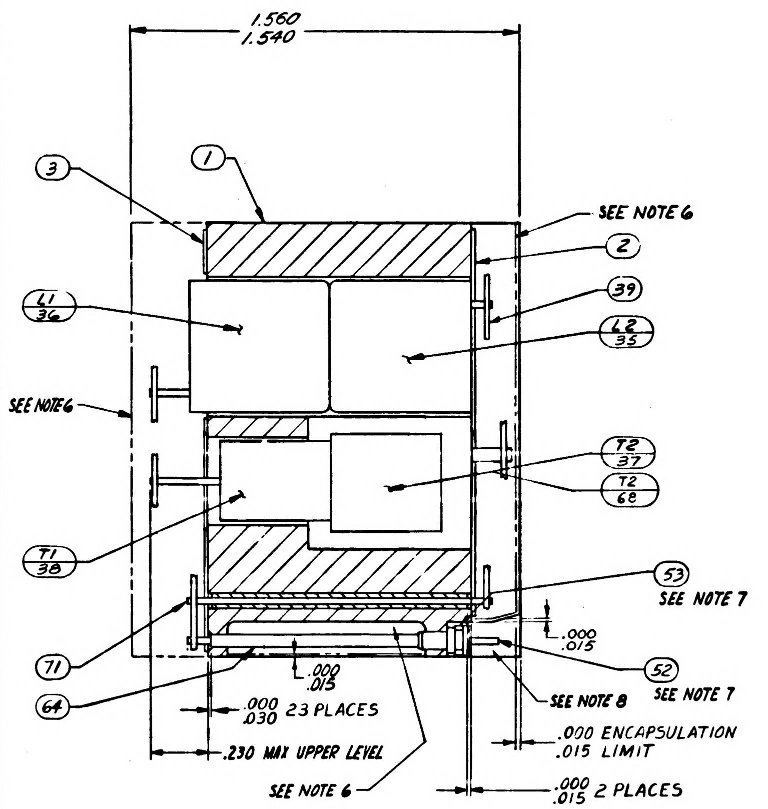
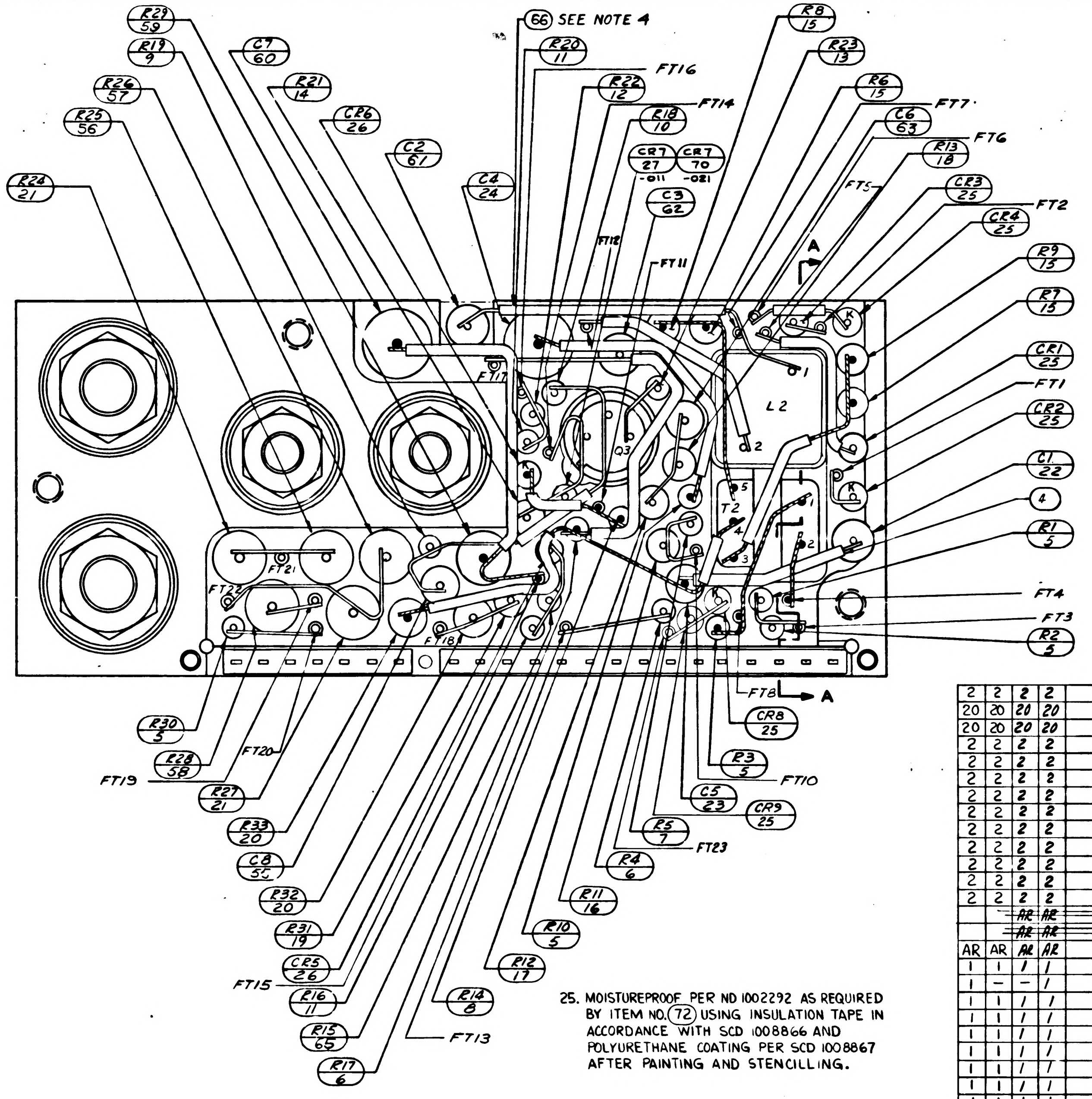
F		REVISED PER TDRR 22942		12 OCT 65	LK AU
G		REVISED PER TDRR 23888		16 NOV 65	JWP
H		REVISED PER TDRR 26397		22 FEB 66	RJP
J		REVISED PER TDRR 26375		28 FEB 66	JMP
K		REVISION STATUS CHANGED		1 APR 66	JJJ
L		REVISED PER TDRR29752		28-JUN 66	W.G. RWH





NOTES:

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3. SOLDER PER ND 1002071.
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13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
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    - B. K INDICATES CATHODE SIDE OF DIODE
    - C. C INDICATES COLLECTOR LEAD OF TRANSISTOR
    - D. B INDICATES BASE LEAD OF TRANSISTOR
    - E. E INDICATES EMITTER LEAD OF TRANSISTOR
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    - G. B( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
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18. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN
19. FILL PER ND1002117
20. AR DENOTES AS REQUIRED
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C2 SEE NOTE 16	
PART NO.	VALUE UF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
1010264-6	.0027

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 041	031	021	011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
AR	AR	—	—		72	SEE NOTE 25	MOISTUREPROOFING
AR	AR	AR	AR		71	1010848-2	WIRE-ELECTRICAL, NICKEL
-	1	1	-		70	1010830-9	SEMICONDUCTOR DEVICE, DIODE
1	1	1	1		69	1008540-7	GASKET, CONNECTOR MINIATURE
-	1	1	-		68	1010710	TRANSFORMER
-	X	X	-		REF	1009534	SCHEMATIC, ELECTRICAL
1	1	1	1		67	1008540-15	GASKET, CONNECTOR-MINIATURE
X	-	-	X		REF	1010024	SCHEMATIC, ELECTRICAL
AR	AR	AR	AR		66	SEE NOTE 4	INSULATION SLEEVING NO.22
1	1	1	1		65	1006750-75	RESISTOR
AR	AR	AR	AR		64	1006776-20	INSULATION SLEEVING, ELECTRICAL
1	1	1	1		63	1010279-9	CAPACITOR
1	1	1	1		62	1010264-12	CAPACITOR
1	1	1	1		61	SEE NOTE 16	CAPACITOR
1	1	1	1		60	1010320-6	CAPACITOR
1	1	1	1		59	1010389-94	RESISTOR, FIXED
1	1	1	1		58	1010399-16	RESISTOR, FIXED
1	1	1	1		57	1010389-47	RESISTOR, FIXED
1	1	1	1		56	1010399-31	RESISTOR, FIXED
1	1	1	1		55	1010279-228	CAPACITOR
2	2	2	2		54	1008024-2	WASHER, INSULATOR
20	20	20	20		53	1006775	INSULATOR
20	20	20	20		52	1006782-5	CONTACT
2	2	2	2		51	MS20341-416B	NUT
2	2	2	2		50	MS20341-10B	NUT
2	2	2	2		49	1008025-2	BUSHING, INSULATOR
2	2	2	2		48	1008021-1	BUSHING, INSULATOR
2	2	2	2		47	1008021-2	BUSHING, INSULATOR
2	2	2	2		46	1008024-3	WASHER, INSULATOR
2	2	2	2		45	1008024-4	WASHER, INSULATOR
2	2	2	2		44	1008071-5	WASHER, FLAT
2	2	2	2		43	1008024-1	WASHER, INSULATOR
2	2	2	2		42	1008071-2	WASHER, FLAT
		~~AR~~	~~AR~~		~~41~~	~~1006757-8~~	~~WIRE, ELECTRICAL~~
		~~AR~~	~~AR~~		~~40~~	~~1006776-22~~	~~INSULATION SLEEVING, ELECTRICAL~~
AR	AR	AR	AR		39	1006757-1	WIRE, ELECTRICAL
1	1	1	1		38	1010328	TRANSFORMER
1	—	—	1		37	1010327	TRANSFORMER
1	1	1	1		36	1010277-9	REACTOR
1	1	1	1		35	1010277-8	REACTOR
1	1	1	1		34	1010273-1	TRANSISTOR
1	1	1	1		33	1010437	TRANSISTOR
1	1	1	1		32	1010271	TRANSISTOR
1	1	1	1		31	1010269-1	TRANSISTOR
1	1	1	1		30	1010270	TRANSISTOR
1	1	1	1		29	1008813-1	TRANSISTOR
1	1	1	1		28	1010252-1	TRANSISTOR
1	—	≠	1		27	1010286-9	SEMICONDUCTOR DEVICE, DIODE
2	2	2	2		26	1010372-15	SEMICONDUCTOR DEVICE, DIODE
6	6	6	6		25	1010392-1	SEMICONDUCTOR DEVICE, DIODE
1	1	1	1		24	1010320-11	CAPACITOR, FIXED
1	1	1	1		23	1010279-220	CAPACITOR, FIXED
1	1	1	1		22	1010264-9	CAPACITOR, FIXED
2	2	2	2		21	1010278-39	RESISTOR, FIXED
2	2	2	2		20	1010377-66	RESISTOR, FIXED
1	1	1	1		19	1010364-43	RESISTOR, FIXED
1	1	1	1		18	1010364-719	RESISTOR, FIXED
1	1	1	1		17	1010364-465	RESISTOR, FIXED
1	1	1	1		16	1010364-635	RESISTOR, FIXED
4	4	4	4		15	1010364-443	RESISTOR, FIXED
1	1	1	1		14	1006760-35	RESISTOR, FIXED
1	1	1	1		13	1006750-40	RESISTOR, FIXED
1	1	1	1		12	1006750-53	RESISTOR, FIXED
2	2	2	2		11	1006750-51	RESISTOR, FIXED
1	1	1	1		10	1006750-70	RESISTOR, FIXED
1	1	1	1		9	1006750-44	RESISTOR, FIXED
1	1	1	1		8	1006750-60	RESISTOR, FIXED
1	1	1	1		7	1006750-48	RESISTOR, FIXED
2	2	2	2		6	1006750-80	RESISTOR, FIXED
5	5	5	5		5	1006750-73	RESISTOR, FIXED
AR	AR	AR	AR		4	1006776-21	INSULATION SLEEVING, ELECTRICAL
1	1	1	1		3	1015687	INSULATOR
1	1	1	1		2	1015686	INSULATOR
1	1	1	1		1	1015685	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ±.005 XX ±.02 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN S. Agne DATE 24 SEP 64
CHECKED A. Ulrich 26 SEP 64
APPROVAL
APPROVAL
NASA APPROVAL 10-20-64
MIT APPROVAL

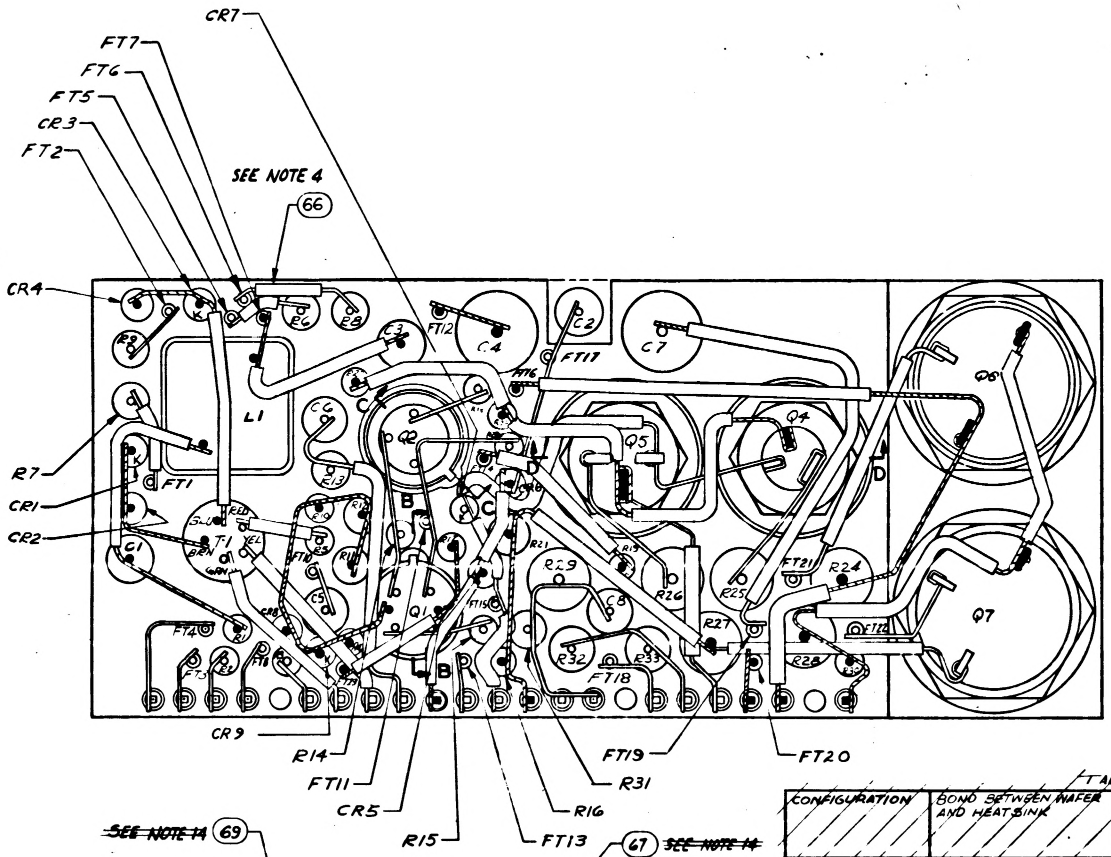
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL SERVO AMPLIFIER
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007540
SCALE 4:1
SHEET 1 OF 2

1007540

REVISIONS 13638					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR-17354		12-MAR 65	N.G. / CP
B		REVISED PER TDRR 17610		25 MAR 65	HTO / CP
C		REVISED PER TDRR 19453		2 Jun 65	[illegible]
D		REVISED PER TDRR 19506		9 JUN 65	WJK / RWH
E		REVISED PER TDRR 20149		19 JUN 65	DKD / PJ
F		REVISED PER TDRR 22942		12 OCT 65	LK / AU
G		REVISION STATUS CHANGED		16 NOV. 65	JWP
H		REVISION STATUS CHANGED		23 FEB 66	RP
J		REVISION STATUS CHANGED		28 FEB 66	JWP
K		REVISED PER TDRR 27490		1 APR 66	JJJ / PJ
L		REVISION STATUS CHANGED		28 JUN 66	RWH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FT5
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FT2
SEE NOTE 4
66
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CR2
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C1
C2
C3
C4
C5
C6
C7
C8
C9
Q1
Q2
Q4
Q5
Q6
Q7
FT12
FT16
FT17
FT14
FT18
R24
R25
R26
R27
R28
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R31
FT19
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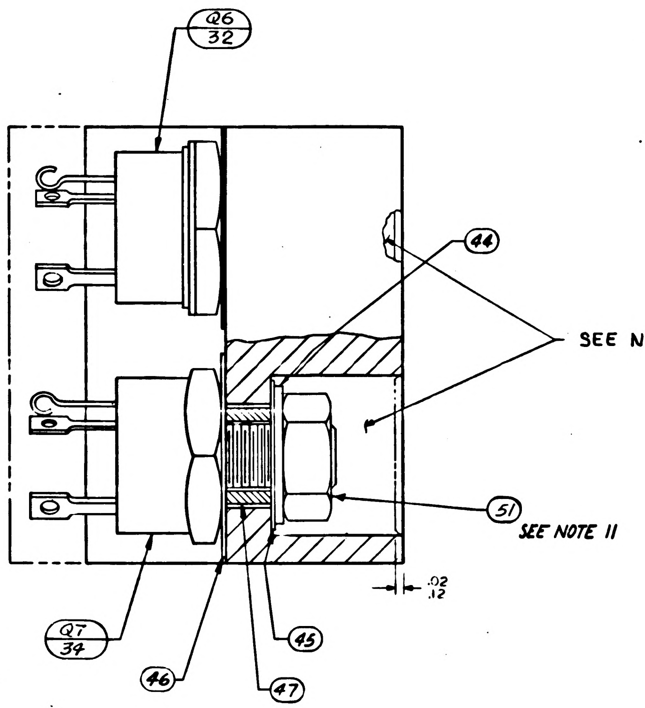
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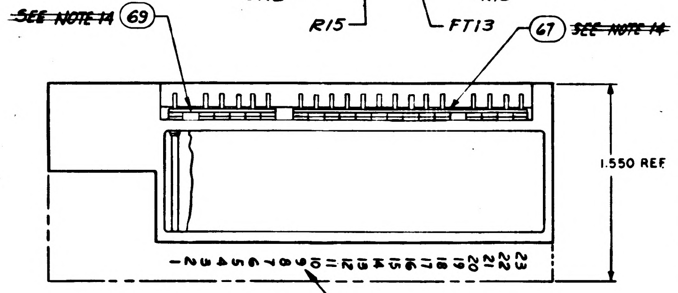
32
44
SEE NOTE 19
51
SEE NOTE 11
.02
.12
Q7
34
46
47
45

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	.00% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE


~~SEE NOTE 14~~ 69
67 ~~SEE NOTE 14~~
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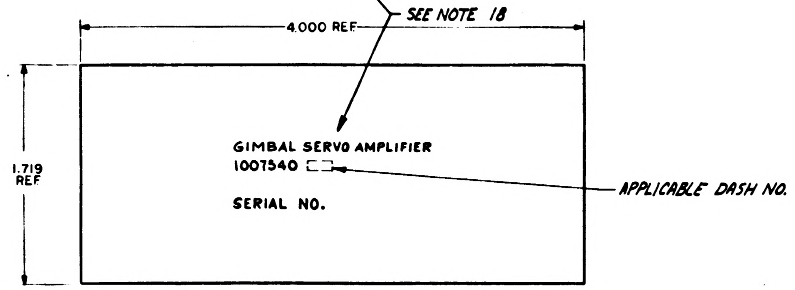
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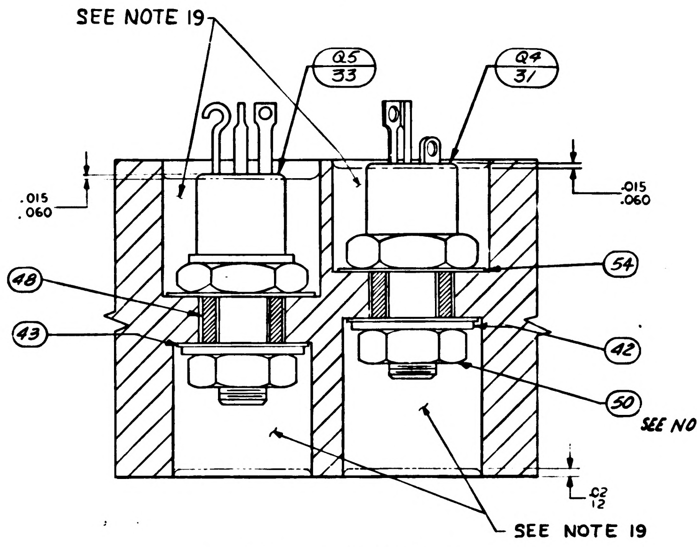
SEE NOTE 18
1.719 REF
GIMBAL SERVO AMPLIFIER
1007540 ☐
SERIAL NO.
APPLICABLE DASH NO.

MARKING VIEW
SCALE - 2:1


SEE NOTE 19
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Q4
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.060
.015
.060
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43
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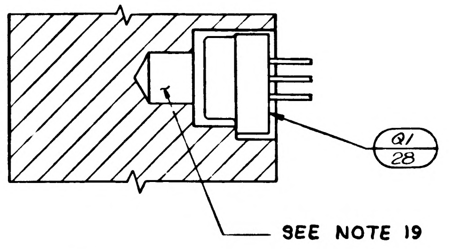
42
50
SEE NOTE 10
.02
.12
SEE NOTE 19

PARTIAL SECTION D-D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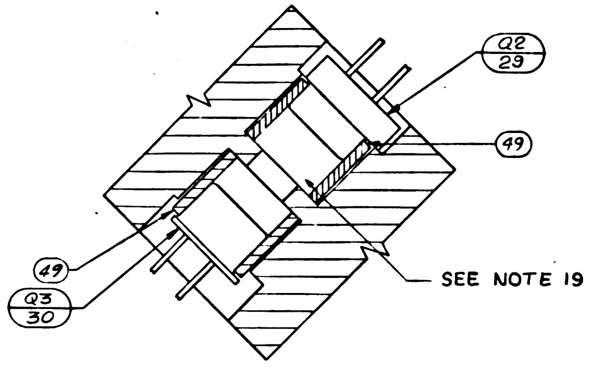
SEE NOTE 19

PARTIAL SECTION B-B


Q2
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49
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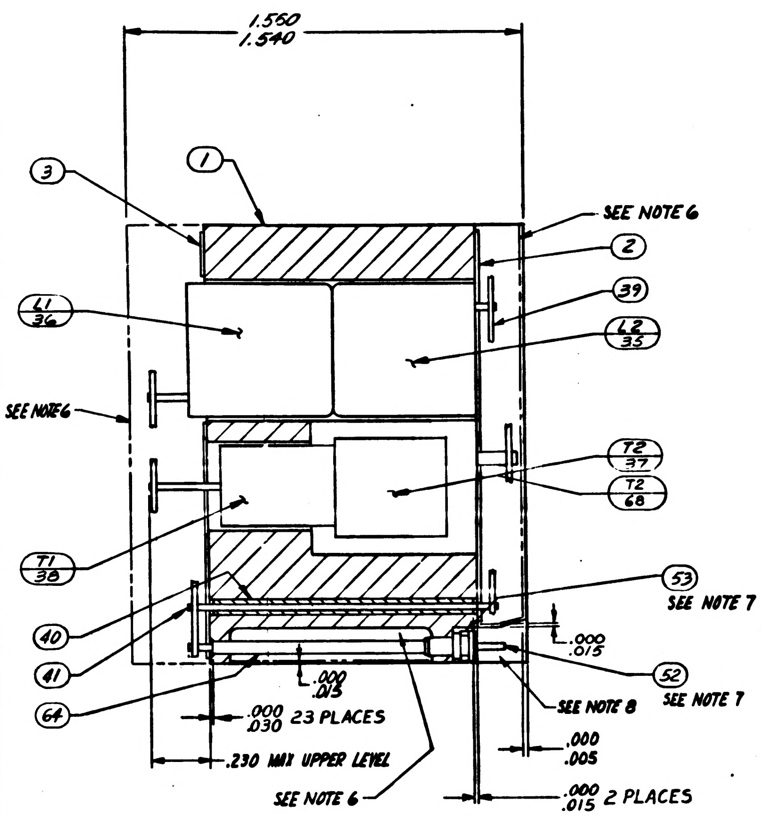
Q3
30
SEE NOTE 19

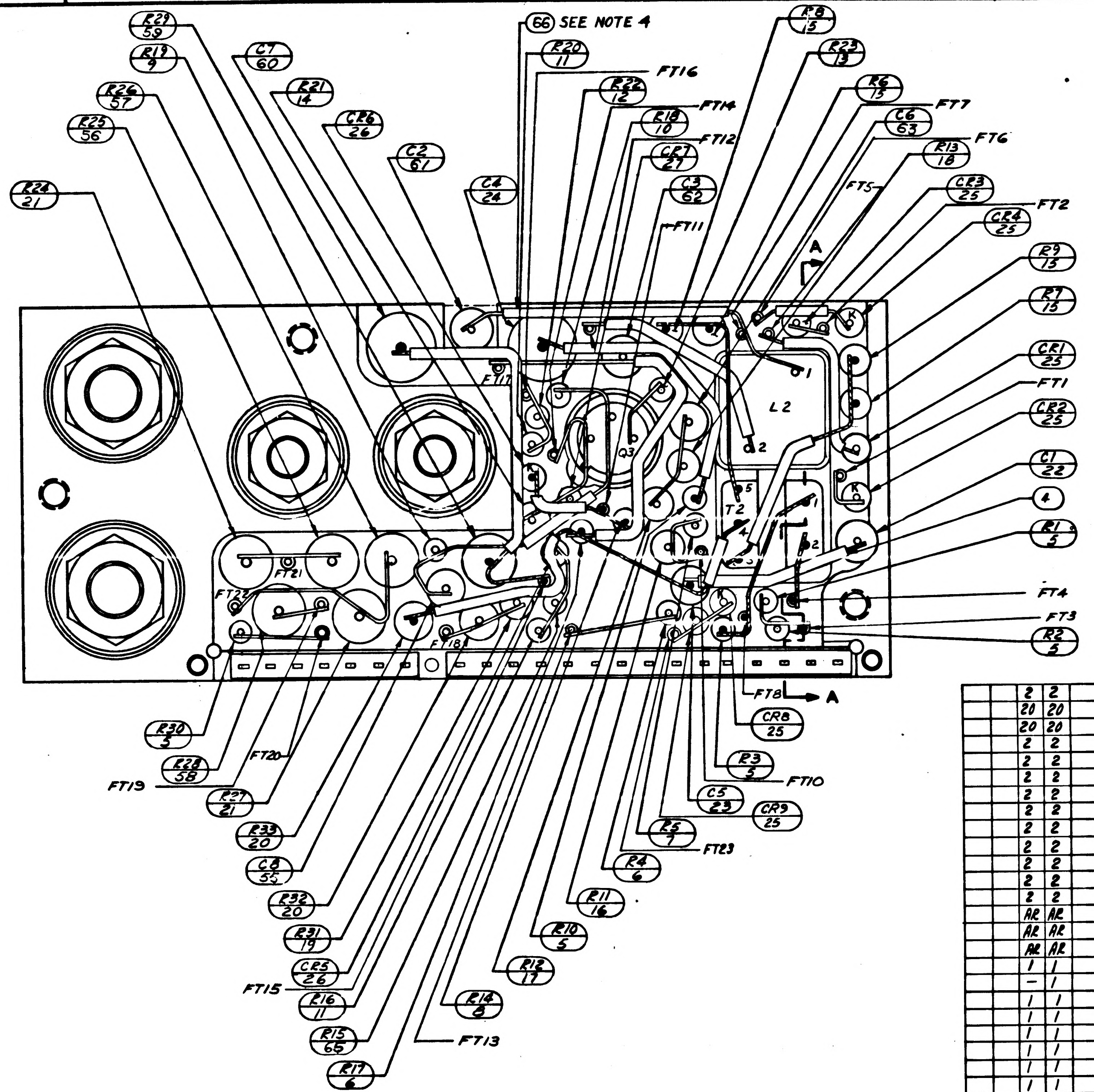
PARTIAL SECTION C-C

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
FRACTIONS + — − — DECIMALS + — − — ANGLES + — − —	DRAWN Sloane DATE 24 SEP 64 CHECKED 26 SEP 64 APPROVAL APPROVAL 10/13/64	GIMBAL SERVO AMPLIFIER MODULE ASSY		
DO NOT SCALE THIS DRAWING				
MATERIAL	NASA APPROVAL 12-20-64	CODE IDENT NO. 80230	SIZE E	1007540
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 4:1		SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	DATE	APPD.
		REVISIONS 13698		
		CHG NO.		



1.560
1.540
3
1
SEE NOTE 6
2
39
L1 36
L2 35
SEE NOTE6
T2 37
T2 68
T1 38
40
41
64
53
SEE NOTE 7
.000
.015
52
SEE NOTE 7
SEE NOTE 8
.000
.013
.000
.030 23 PLACES
.000
.005
.230 MAX UPPER LEVEL
SEE NOTE 6
.000
.015 2 PLACES



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C7 60
R21 14
R26 57
R25 56
CR6 26
C2 61
R24 21
C4 24
66 SEE NOTE 4
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FT16
R22 12
FT14
R18 10
FT12
CR7 27
C3 62
FT11
R8 15
R23 13
R6 15
FT7
C6 63
FT6
R13 18
FT5
CR3 25
FT2
CR4 25
A
R9 15
R7 15
CR1 25
FT1
CR2 25
C1 22
4
R1 5
FT4
FT3
R2 5
L2
T2
FT17
FT21
FT22
FT18
FT8
A
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R3 5
FT10
C5 23
CR9 25
R5 7
FT23
R4 6
R11 16
R10 5
R12 17
R14 8
FT13
R17 6
R15 65
R16 11
FT15
CR5 26
R31 19
R32 20
C8 55
R33 20
R27 21
FT19
R28 58
FT20
R30 3

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL CONNECTION TO BE MADE BY WELDING PER ND 1002005.
3. SOLDER PER ND 1002071.
4. USE MIL-I-631, TYPE F, FORM U, GRADE C, CLASS I, CATEGORY I, IN 2 PLACES ONLY - SECURE IN PLACE PER ND 1002004. TYPE I
5. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND IT'S RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .005. REMOVE ALL FLASHING.
7. ASSEMBLE PER ND1002136.
8. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
9. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD C
10. MOUNTING TORQUE FOR ITEM ㊿ 12 IN-LBS ± 2 IN-LBS.
11. MOUNTING TORQUE FOR ITEM (51) 24 IN-LBS ± 2 IN-LBS.
12. BROKEN PATHS ON ITEMS ② AND ③ INDICATES SLEEVING.
13. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
14. BOND ITEM 67 TO ITEM 53 PER ND 1002237.
15. ON ITEMS 2 & 3:
    - A. FT( ) INDICATES FEEDTHRU
    - B. K INDICATES CATHODE SIDE OF DIODE
    - C. C INDICATES COLLECTOR LEAD OF TRANSISTOR
    - D. B INDICATES BASE LEAD OF TRANSISTOR
    - E. E INDICATES EMITTER LEAD OF TRANSISTOR
    - F. C( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR
    - G. B( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
    - H. E( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR
16. AT FINAL TEST C2 TO BE SELECTED FROM CHART PER ATP 1007040
17. PROCURE PER PS 1007040.
18. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN
19. FILL PER ND1002117
20. AR DENOTES AS REQUIRED

C2 SEE NOTE 16	
PART NO.	VALUE UF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
1010264-6	.0027

		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		1	1		69	1008540-7	GASKET, CONNECTOR MINIATURE
		1	–		68	1010710	TRANSFORMER
		X	–		REF	1009534	SCHEMATIC, ELECTRICAL
		1	1		67	1008540-15	GASKET, CONNECTOR-MINIATURE
		–	X		REF	1010024	SCHEMATIC, ELECTRICAL
		AR	AR		66	SEE NOTE 4	INSULATION SLEEVING NO. 22
		1	1		65	1006750-75	RESISTOR
		AR	AR		64	1006776-20	INSULATION SLEEVING, ELECTRICAL
		1	1		63	1010279-9	CAPACITOR
		1	1		62	1010264-12	CAPACITOR
		1	1		61	SEE NOTE 16	CAPACITOR
		1	1		60	1010320-6	CAPACITOR
		1	1		59	1010389-94	RESISTOR, FIXED
		1	1		58	1010399-16	RESISTOR, FIXED
		1	1		57	1010389-47	RESISTOR, FIXED
		1	1		56	1010399-31	RESISTOR, FIXED
		1	1		55	1010279-228	CAPACITOR

QUANTITY REQUIRED
LIST OF PARTS AND MATERIALS

		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		2	2		54	1008024-2	WASHER, INSULATOR
		20	20		53	1006775	INSULATOR
		20	20		52	1006782-5	CONTACT
		2	2		51	MS20341-416B	NUT
		2	2		50	MS20341-10B	NUT
		2	2		49	1008025-2	BUSHING, INSULATOR
		2	2		48	1008021-1	BUSHING, INSULATOR
		2	2		47	1008021-2	BUSHING, INSULATOR
		2	2		46	1008024-3	WASHER, INSULATOR
		2	2		45	1008024-4	WASHER, INSULATOR
		2	2		44	1008071-5	WASHER, FLAT
		2	2		43	1008024-1	WASHER, INSULATOR
		2	2		42	1008071-2	WASHER, FLAT
		AR	AR		41	1006757-8	WIRE, ELECTRICAL
		AR	AR		40	1006776-22	INSULATION SLEEVING, ELECTRICAL
		AR	AR		39	1006757-1	WIRE, ELECTRICAL
		1	1		38	1010328	TRANSFORMER
		–	1		37	1010327	TRANSFORMER
		1	1		36	1010277-9	REACTOR
		1	1		35	1010277-8	REACTOR
		1	1		34	1010273-1	TRANSISTOR
		1	1		33	1010437	TRANSISTOR
		1	1		32	1010271	TRANSISTOR
		1	1		31	1010269-1	TRANSISTOR
		1	1		30	1010270	TRANSISTOR
		1	1		29	1010345-1	TRANSISTOR
		1	1		28	1010252-1	TRANSISTOR
		1	1		27	1010286-9	SEMICONDUCTOR DEVICE, DIODE
		2	2		26	1010372-15	SEMICONDUCTOR DEVICE, DIODE
		6	6		25	1010392-1	SEMICONDUCTOR DEVICE, DIODE
		1	1		24	1010320-11	CAPACITOR, FIXED
		1	1		23	1010279-220	CAPACITOR, FIXED
		1	1		22	1010264-9	CAPACITOR, FIXED
		2	2		21	1010278-39	RESISTOR, FIXED
		2	2		20	1010377-66	RESISTOR, FIXED
		1	1		19	1010364-43	RESISTOR, FIXED
		1	1		18	1010364-719	RESISTOR, FIXED
		1	1		17	1010364-465	RESISTOR, FIXED
		1	1		16	1010364-635	RESISTOR, FIXED
		4	4		15	1010364-443	RESISTOR, FIXED
		1	1		14	1006760-35	RESISTOR, FIXED
		1	1		13	1006750-40	RESISTOR, FIXED
		1	1		12	1006750-53	RESISTOR, FIXED
		2	2		11	1006750-51	RESISTOR, FIXED
		1	1		10	1006750-70	RESISTOR, FIXED
		1	1		9	1006750-44	RESISTOR, FIXED
		1	1		8	1006750-60	RESISTOR, FIXED
		1	1		7	1006750-48	RESISTOR, FIXED
		2	2		6	1006750-80	RESISTOR, FIXED
		5	5		5	1006750-73	RESISTOR, FIXED
		AR	AR		4	1006776-21	INSULATION SLEEVING, ELECTRICAL
		1	1		3	1015687	INSULATOR
		1	1		2	1015686	INSULATOR
		1	1		1	1015685	HEATSINK

QUANTITY REQUIRED
LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ .XXX ± .005 +
– .XX ± .02 –
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN S. Agna DATE 9-8-64
CHECKED 26 SEP 64
APPROVAL
APPROVAL 10/13/64
NASA APPROVAL 10-28-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

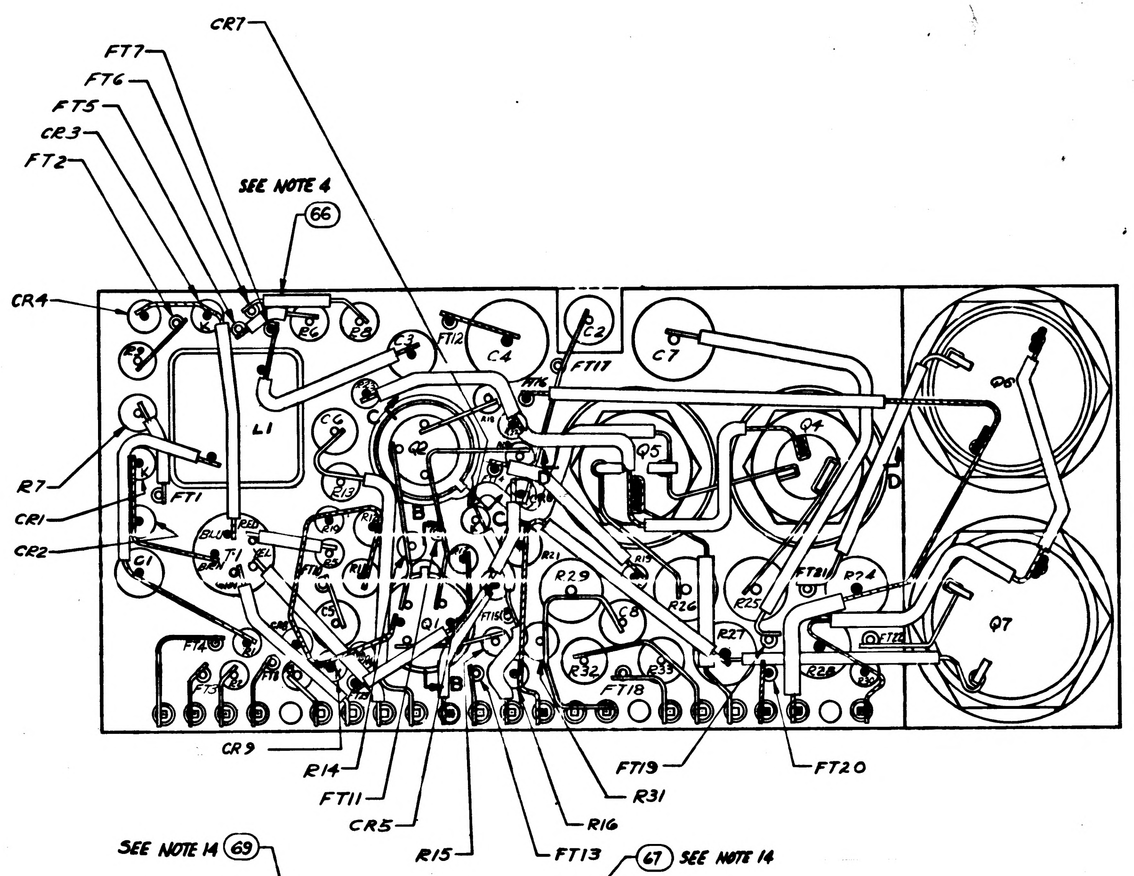
GIMBAL SERVO AMPLIFIER
MODULE ASSY

CODE IDENT NO.
SIZE E
1007540
SCALE 4:1
SHEET 1 OF 2

1007540

MASTER

REVISIONS 13638				
SYM	ZONE	DESCRIPTION	DATE	APPD.
		CHG NO.		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Q4
Q5
Q6
Q7
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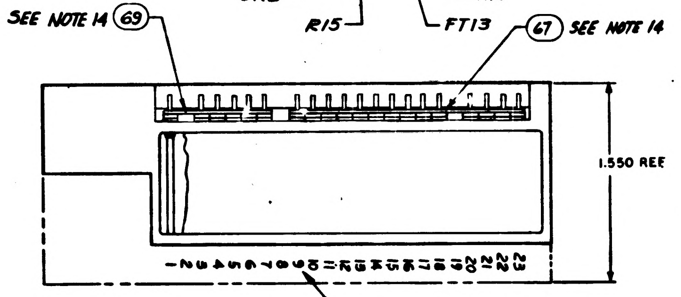
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67 SEE NOTE 14
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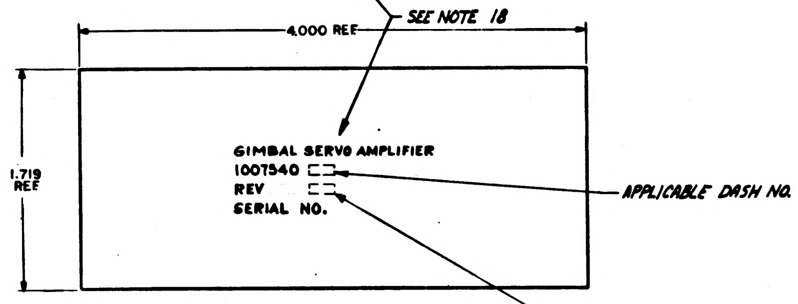
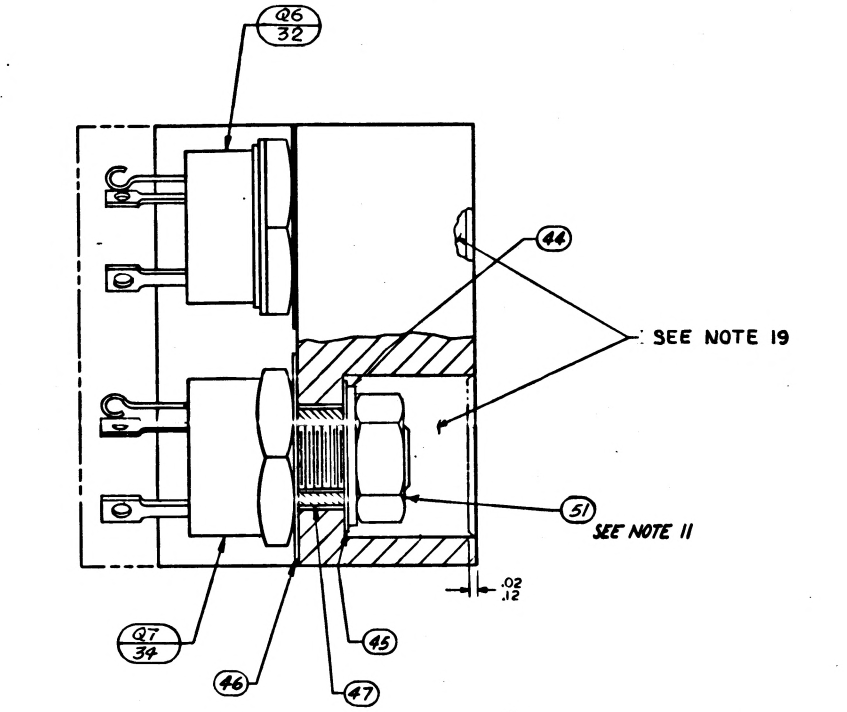

4.000 REF
SEE NOTE 18
1.719 REF
GIMBAL SERVO AMPLIFIER
1007540 ☐
REV ☐
SERIAL NO.
APPLICABLE DASH NO.
DWG REV LETTER

MARKING VIEW
SCALE - 2:1


Q6
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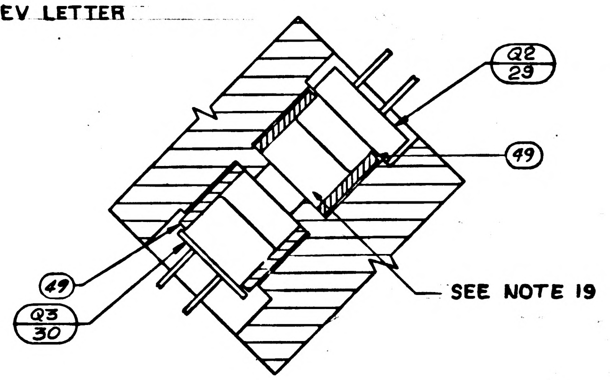
SEE NOTE 19
51
SEE NOTE 11
.02
.12
Q7
34
46
47
45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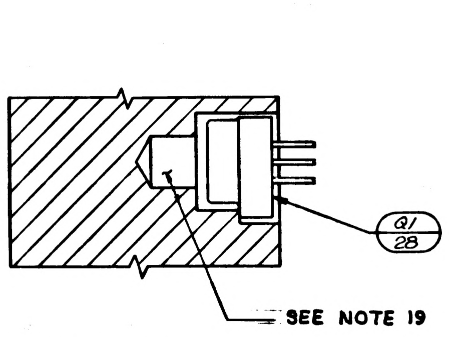
Q3
30
SEE NOTE 19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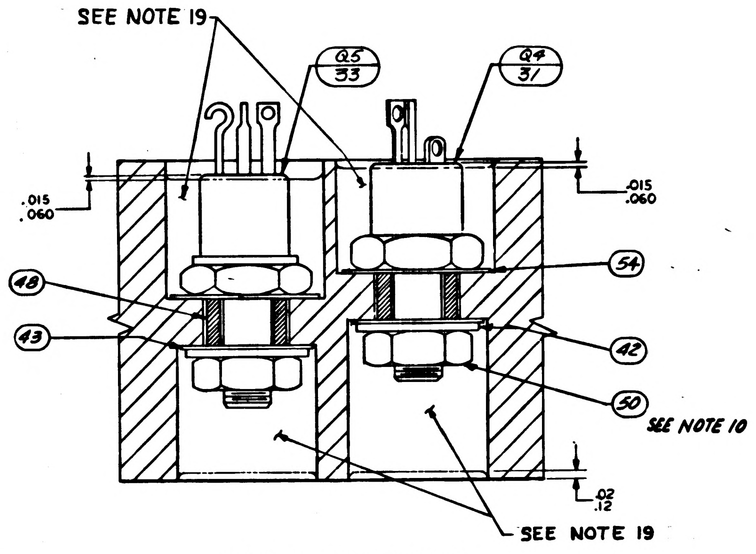
SEE NOTE 19

PARTIAL SECTION B-B

PARTIAL SECTION C-C


SEE NOTE 19
Q5
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Q4
31
.015
.060
.015
.060
48
43
54
42
50
SEE NOTE 10
.02
.12
SEE NOTE 19

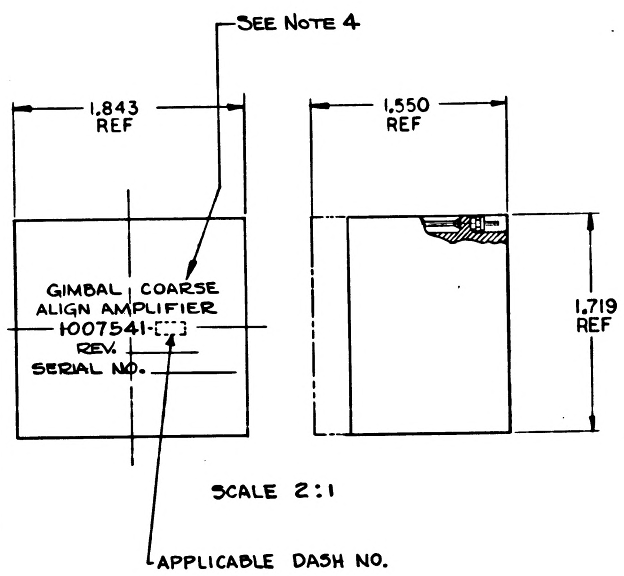
PARTIAL SECTION D-D

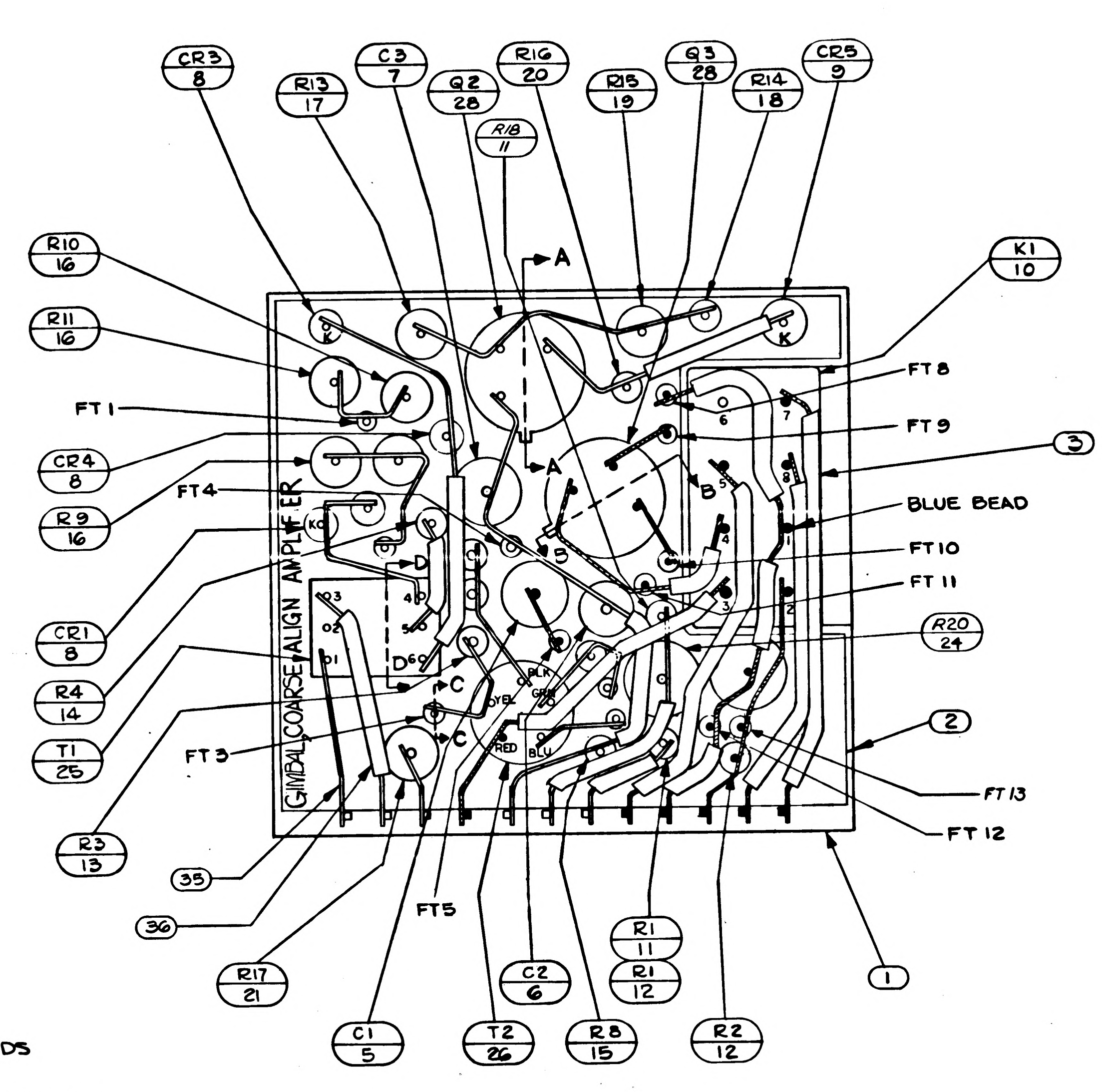
MASTER

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± — ± — ± —	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN S. Ayne DATE 26 SEP 64 CHECKED L. Wlemick 26 SEP 64 APPROVAL APPROVAL D. B. Fst 10/19/64	GIMBAL SERVO AMPLIFIER MODULE ASSY
MATERIAL	NASA APPROVAL W. J. Rhine 10-20-64	CODE IDENT NO. | SIZE E | 1007540
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 4:1 | SHEET 2 OF 2

1007540

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17351		12-MAR-65	GM / EF


SEE NOTE 4
1.843 REF
1.550 REF
1.719 REF
GIMBAL COARSE
ALIGN AMPLIFIER
1007541-[ ]
REV.
SERIAL NO.
SCALE 2:1
APPLICABLE DASH NO.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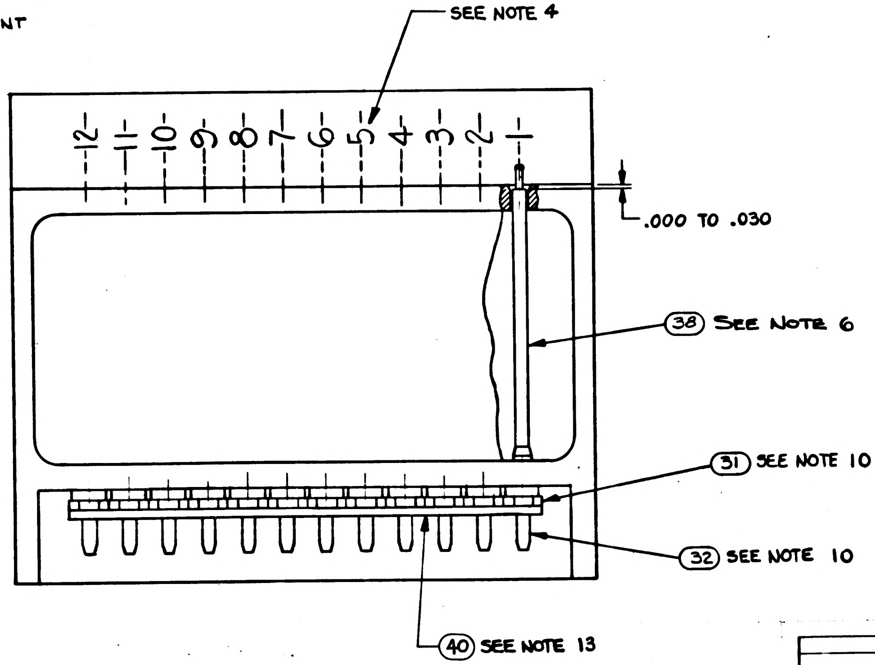
R13 17
C3 7
Q2 28
R18 11
R16 20
R15 19
Q3 28
R14 18
CR5 9
R10 16
R11 16
FT 1
CR4 8
R9 16
FT4
CR1 8
R4 14
T1 25
FT 3
R3 13
35
36
R17 21
C1 5
FT5
T2 26
C2 6
R1 11
R1 12
R8 15
R2 12
1
2
3
K1 10
FT 8
FT 9
BLUE BEAD
FT10
FT 11
R20 24
FT 13
FT 12
A
GIMBAL COARSE ALIGN AMPLIFIER
K
BLK
YEL
GRN
RED
BLU


SEE NOTE 4
12 11 10 9 8 7 6 5 4 3 2 1
.000 TO .030
38 SEE NOTE 6
31 SEE NOTE 10
32 SEE NOTE 10
40 SEE NOTE 13

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
4. MARK PIN NUMBERS $^{.100}_{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $^{.140}_{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. AREA TO BE FREE OF ENCAPSULATING COMPOUND
6. USE AS REQUIRED
7. ON ITEMS ②, ③ AND ④:
   "K" INDICATES CATHODE SIDE OF DIODE
   FT ( ) INDICATES FEED THRU
   "C" INDICATES COLLECTOR LEAD OF TRANSISTOR
   B " " BASE " "
   E " " EMITTER " "
   C( ) " " COLLECTOR " " MULTI-STAGE TRANSISTOR
   B( ) " " BASE " "
   E( ) " " EMITTER " "
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. TYPICAL SLEEVING FOR CR1 THRU CR4, R1 THRU R8, R14, R16 AND R18
10. MUST MEET REQUIREMENTS OF ND1002136
11. TORQUE TO 4 ±1 IN-LB FOR ASSY OF ITEM 10
12. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
13. BOND ITEM ㊵ TO ITEM ㉛ PER ND 1002237.
14. COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009 METHOD C AND CENTRALIZED
15. USE MIL-I-631 TYPE F, FORM U, GRADE C, CLASS I, CATAGORY I, ONE PLACE ONLY. BOND IN PLACE PER ND1002004, TYPE I
16. PROCURE PER PS 1007041.
17. FILL PER ND 1002117
18. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		021	011				
					REF	1010023	SCHEMATIC
					REF	1009524	SCHEMATIC
		1	1		40	1008540-12	GASKET, CONNECTOR MINIATURE
		AR	AR		39	MIL-I-631	INSULATION, SLEEVING 22 GA
		AR	AR		38	1006776-20	INSULATION SLEEVING
		AR	AR		37	1006757-8	WIRE, ELEC.
		AR	AR		36	1006776-21	INSULATION SLEEVING
		AR	AR		35	1006757-1	WIRE, ELEC.
		2	2		34	1008070-5	WASHER-FLAT
		2	2		33	MS20341-4A	NUT-HEX
		12	12		32	1006782-5	CONTACT, WRAPOST MALE MINAT.
		12	12		31	1006775	INSULATOR, WRAPOST MALE MINAT
		3	3		30	1008025-2	INSULATOR, BUSHING
		AR	AR		29	1006776-22	INSULATION SLEEVING
		2	2		28	1010270	TRANSISTOR
		1	1		27	1010252-1	TRANSISTOR
		1	1		26	1010326	TRANSFORMER
		2	2		25	1010329-1	TRANSFORMER
		2	2		24	1010278-71	RESISTOR, FIXED
		1	1		23	1010345-1	TRANSISTOR
		2	2		22	MS35338-78	WASHER, LOCK
		1	1		21	1010364-543	RESISTOR, FIXED
		1	1		20	1006750-56	RESISTOR
		1	1		19	1010364-765	RESISTOR, FIXED
		1	1		18	1010369-105	RESISTOR, FIXED
		1	1		17	1010364-579	RESISTOR, FIXED
		4	4		16	1010364-443	RESISTOR, FIXED
		1	1		15	1006750-43	RESISTOR
		1	1		14	1006750-48	RESISTOR
		2	2		13	1010369-97	RESISTOR, FIXED
		4	3		12	1006750-73	RESISTOR
		1	2		11	1006750-80	RESISTOR
		1	1		10	1010353-1	RELAY, ELECTROMAGNETIC,
		1	1		9	1010372-22	DIODE, SEMICONDUCTOR DEVICE
		4	4		8	1010392-1	DIODE, SEMICONDUCTOR DEVICE
		1	1		7	1010279-232	CAPACITOR, FIXED
		1	1		6	1010279-228	CAPACITOR, FIXED
		1	1		5	1010264-15	CAPACITOR, FIXED
		1	1		4	1015692	INSULATOR
		1	1		3	1015690	INSULATOR
		1	1		2	1015691	INSULATOR
		1	1		1	1015689	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + -
DECIMALS XXX ±.005 XX ±.02
ANGLES + -
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orzel DATE 14 AUG 64
CHECKED A. Udovich 27 AUG 64
APPROVAL
APPROVAL
10-20-64
NASA APPROVAL
MIT APPROVAL 10/20/64

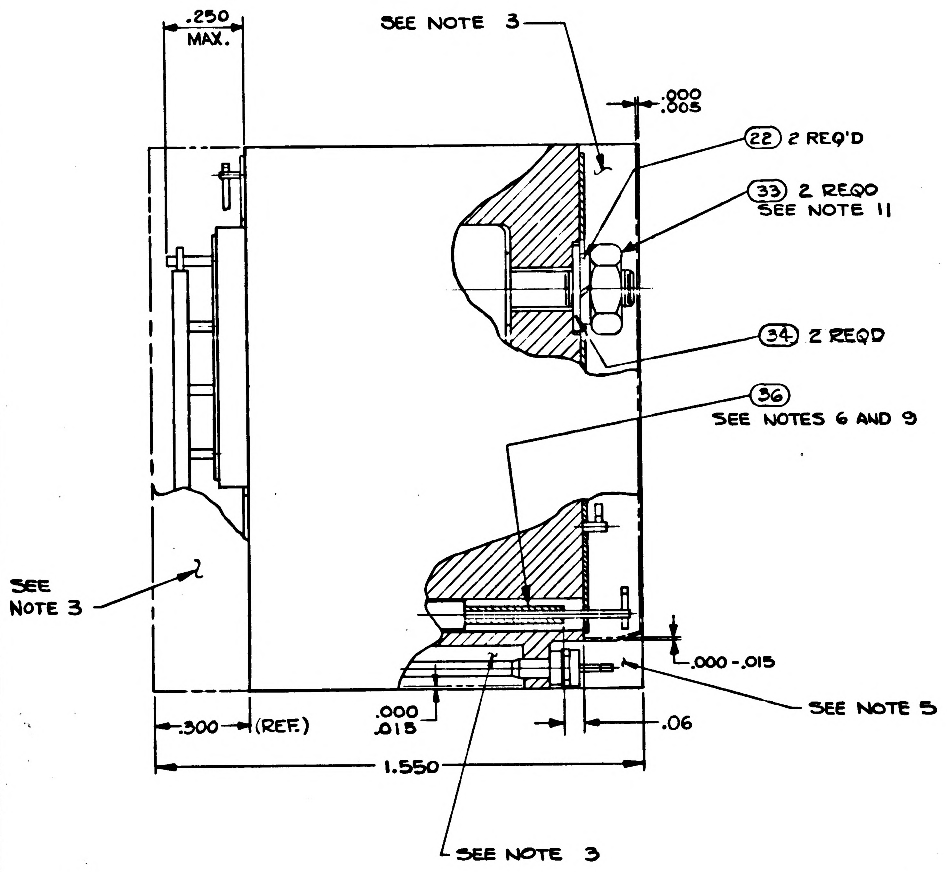
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL COARSE ALIGN
AMPLIFIER MODULE ASSY

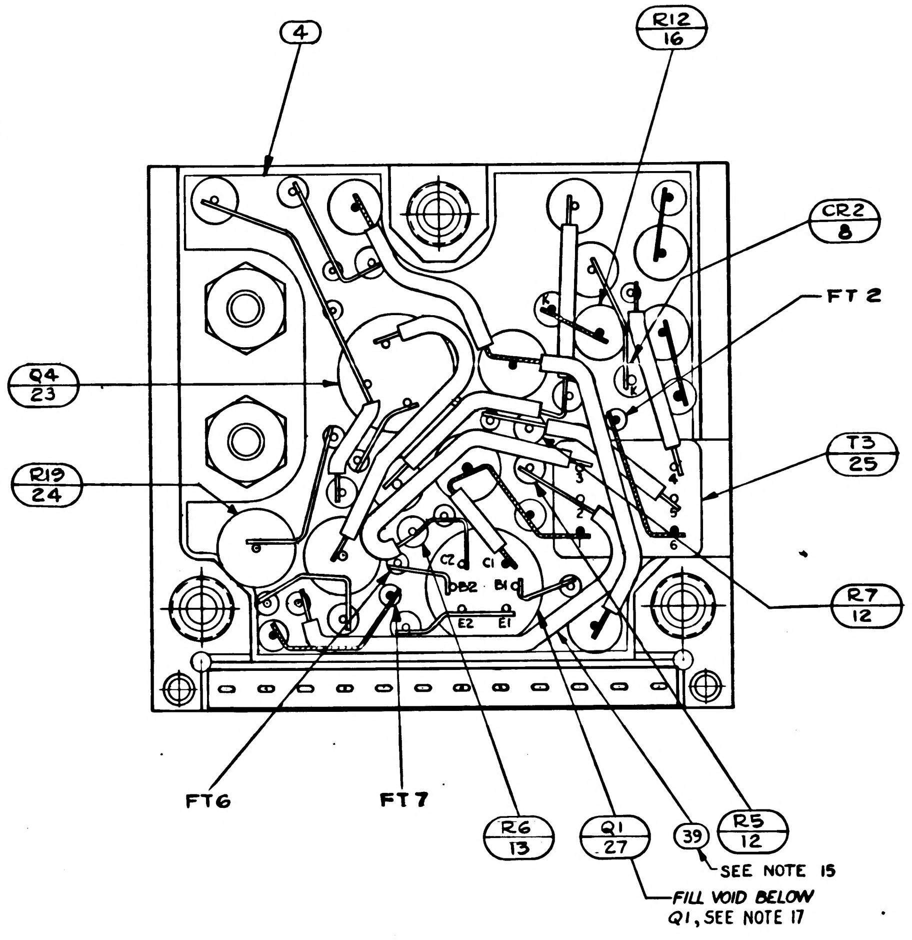
CODE IDENT NO.
SIZE E
1007541
SCALE 3:1
SHEET 1 OF 2

1007541A

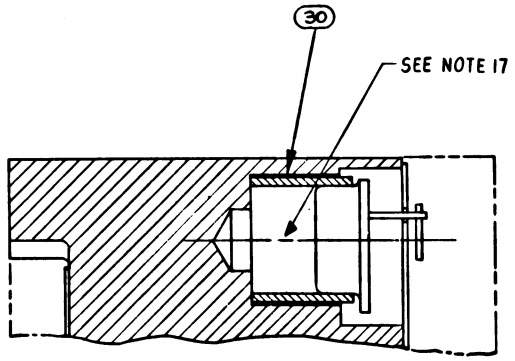
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
△		REVISED PER TDRR 17331		2-MAR 65	GM



.250 MAX.
SEE NOTE 3
.000 .005
(22) 2 REQ'D
(33) 2 REQD SEE NOTE 11
(34) 2 REQD
(36) SEE NOTES 6 AND 9
SEE NOTE 3
.000-.015
SEE NOTE 5
.300 (REF.)
.000 .015
.06
1.550
SEE NOTE 3



(4)
(R12 16)
(CR2 8)
FT 2
(Q4 23)
(R19 24)
(T3 25)
(R7 12)
C2
C1
DB2
B1
E2
E1
FT6
FT7
(R6 13)
(Q1 27)
(39)
(R5 12)
SEE NOTE 15
FILL VOID BELOW Q1, SEE NOTE 17



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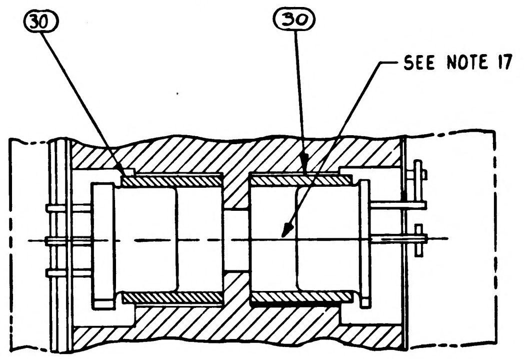
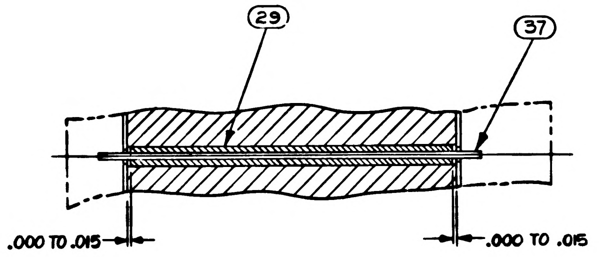
SEE NOTE 17

PARTIAL SECTION A-A



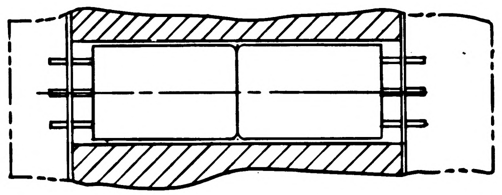
(30)
(30)
SEE NOTE 17

PARTIAL SECTION B-B



(29)
(37)
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C



PARTIAL SECTION D-D

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

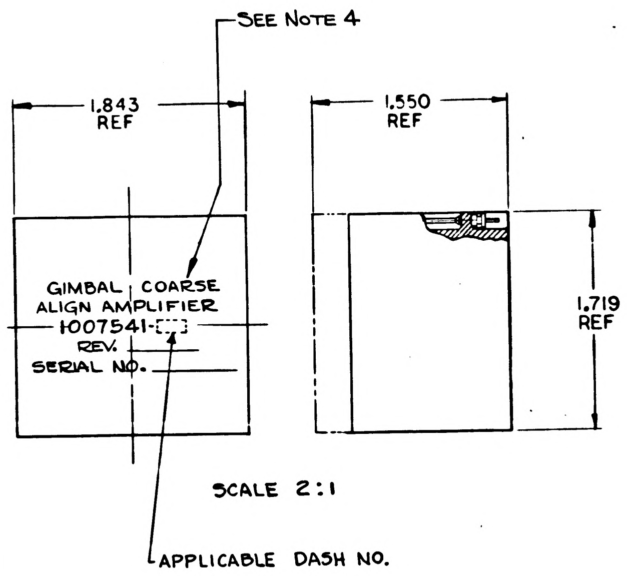
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orgel DATE 14 Aug 64
CHECKED C. Udmich 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL W. J. Kling 10-20-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL COARSE ALIGN
AMPLIFIER MODULE ASSY

CODE IDENT NO.
SIZE E
1007541
SCALE 5:1
SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17331		12-MAR-65	GM / EF
B		REVISED PER TDRR 19403		2 JUN 65	EF



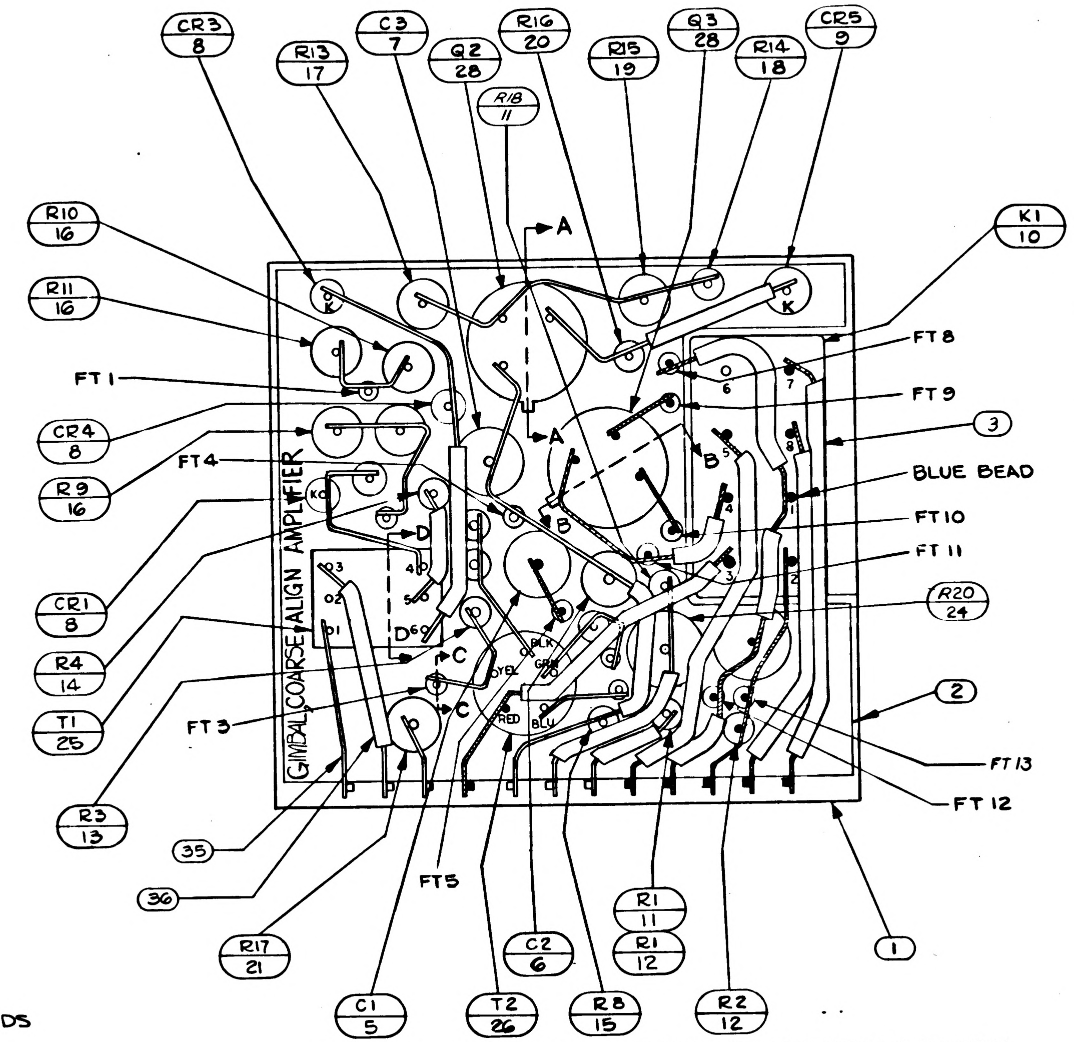
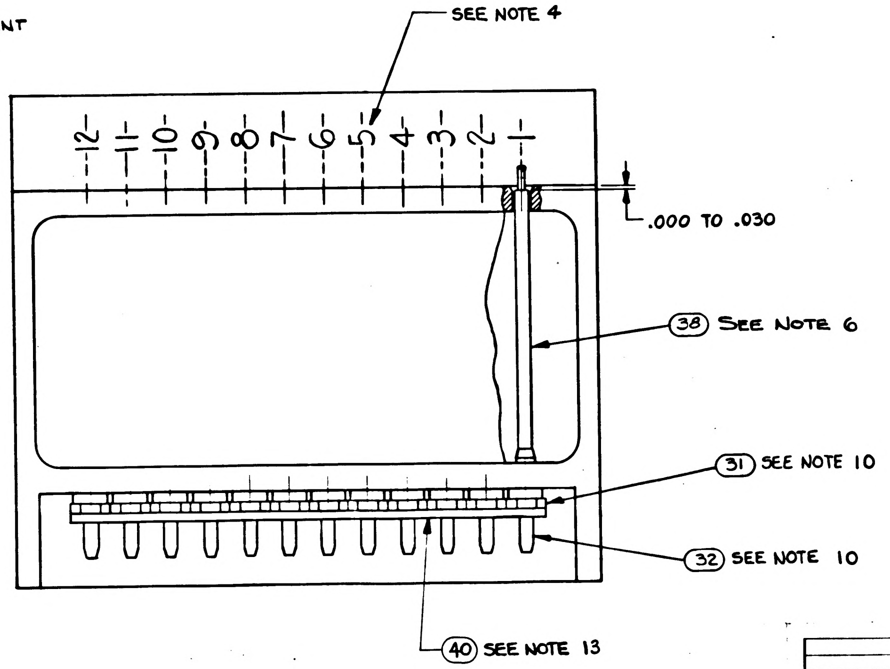


TABLE I

CONFIGURATION	MAT	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER AT PERIMETER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	ADHESIVE	.12 MIN 100% OF PERIMETER .25 MIN 80% OF PERIMETER	.25 MIN 100% OF PERIMETER	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	ADHESIVE	CORNER FILLET & VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	.25 MIN 100% OF PERIMETER	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	PRIMER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 TO .06 OF EXTERNAL EDGE

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
4. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. AREA TO BE FREE OF ENCAPSULATING COMPOUND
6. USE AS REQUIRED
7. ON ITEMS ② , ③ AND ④ :
   "K" INDICATES CATHODE SIDE OF DIODE
   FT ( ) INDICATES FEED THRU
   "C" INDICATES COLLECTOR LEAD OF TRANSISTOR
   B " " BASE " "
   E " " EMITTER " "
   C( ) " " COLLECTOR " " MULTI-STAGE TRANSISTOR
   B( ) " " BASE " "
   E( ) " " EMITTER " "
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. TYPICAL SLEEVING FOR CR1 THRU CR4 R1 THRU R8, R14, R16 AND R18
10. MUST MEET REQUIREMENTS OF ND1002136
11. TORQUE TO 4 ±1 IN-LB FOR ASSY OF ITEM 10
12. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
13. BOND ITEM ㊵ TO ITEM ㉛ PER ND1002237.
14. COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009 METHOD C AND CENTRALIZED
15. USE MIL-I-631 TYPE F, FORM U, GRADE C, CLASS I, CATAGORY I, ONE PLACE ONLY. BOND IN PLACE PER ND1002004, TYPE I
16. PROCURE PER PS 1007041.
17. FILL ~~PER~~ ND 1002117
18. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
19. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF PRIMER BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE I. PRIMER TO CONSIST OF SIX PARTS BY VOLUME OF 1012504-1 AND ONE PART BY VOLUME OF 1012504-2. APPLY MATERIAL AND PRIMER AS INDICATED IN TABLE I.



QUANTITY REQUIRED							
		021	011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			☒		REF	1010023	SCHEMATIC
		☒			REF	1009524	SCHEMATIC
		1	1		40	1008540-12	GASKET, CONNECTOR MINIATURE
		AR	AR		39	MIL-I-631	INSULATION, SLEEVING 22 GA
		AR	AR		38	1006776-20	INSULATION SLEEVING
		AR	AR		37	1006757-8	WIRE, ELEC.
		AR	AR		36	1006776-21	INSULATION SLEEVING
		AR	AR		35	1006757-1	WIRE, ELEC.
		2	2		34	1008070-5	WASHER- FLAT
		2	2		33	MS20341-4A	NUT-HEX
		12	12		32	1006782-5	CONTACT, WRAPOST MALE MINAT.
		12	12		31	1006775	INSULATOR, WRAPOST MALE MINAT
		3	3		30	1008025-2	INSULATOR, BUSHING
		AR	AR		29	1006776-22	INSULATION SLEEVING
		2	2		28	1010270	TRANSISTOR
		1	1		27	1010252-1	TRANSISTOR
		1	1		26	1010326	TRANSFORMER
		2	2		25	1010329-1	TRANSFORMER
		2	2		24	1010278-71	RESISTOR, FIXED
		1	1		23	1010345-1	TRANSISTOR
		2	2		22	MS35338-78	WASHER, LOCK
		1	1		21	1010364-543	RESISTOR, FIXED
		1	1		20	1006750-56	RESISTOR
		1	1		19	1010364-765	RESISTOR, FIXED
		1	1		18	1010369-105	RESISTOR, FIXED
		1	1		17	1010364-579	RESISTOR, FIXED
		4	4		16	1010364-443	RESISTOR, FIXED
		1	1		15	1006750-43	RESISTOR
		1	1		14	1006750-48	RESISTOR
		2	2		13	1010369-97	RESISTOR, FIXED
		4	3		12	1006750-73	RESISTOR
		1	2		11	1006750-80	RESISTOR
		1	1		10	1010353-1	RELAY, ELECTROMAGNETIC,
		1	1		9	1010372-22	DIODE, SEMICONDUCTOR DEVICE
		4	4		8	1010392-1	DIODE, SEMICONDUCTOR DEVICE
		1	1		7	1010279-232	CAPACITOR, FIXED
		1	1		6	1010279-228	CAPACITOR, FIXED
		1	1		5	1010264-15	CAPACITOR, FIXED
		1	1		4	1015692	INSULATOR
		1	1		3	1015690	INSULATOR
		1	1		2	1015691	INSULATOR
		1	1		1	1015689	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± - XXX ±.005 ± -
- - XX ±.02 - -
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orgel DATE 14 AUG 64
CHECKED W. Adcock 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

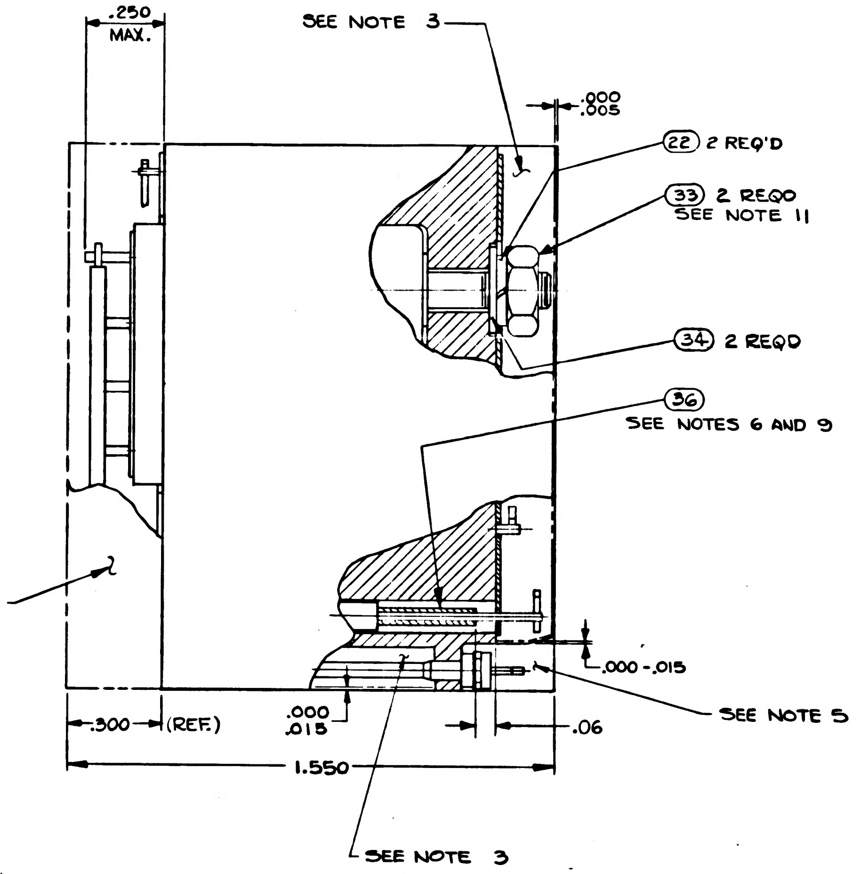
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL COARSE ALIGN
AMPLIFIER MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007541
SCALE 5:1
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17331		2-MAR 65	GM / EF
B		REVISED PER TDRR 19403		2 JUN 65	JSM / EF

(M) (M)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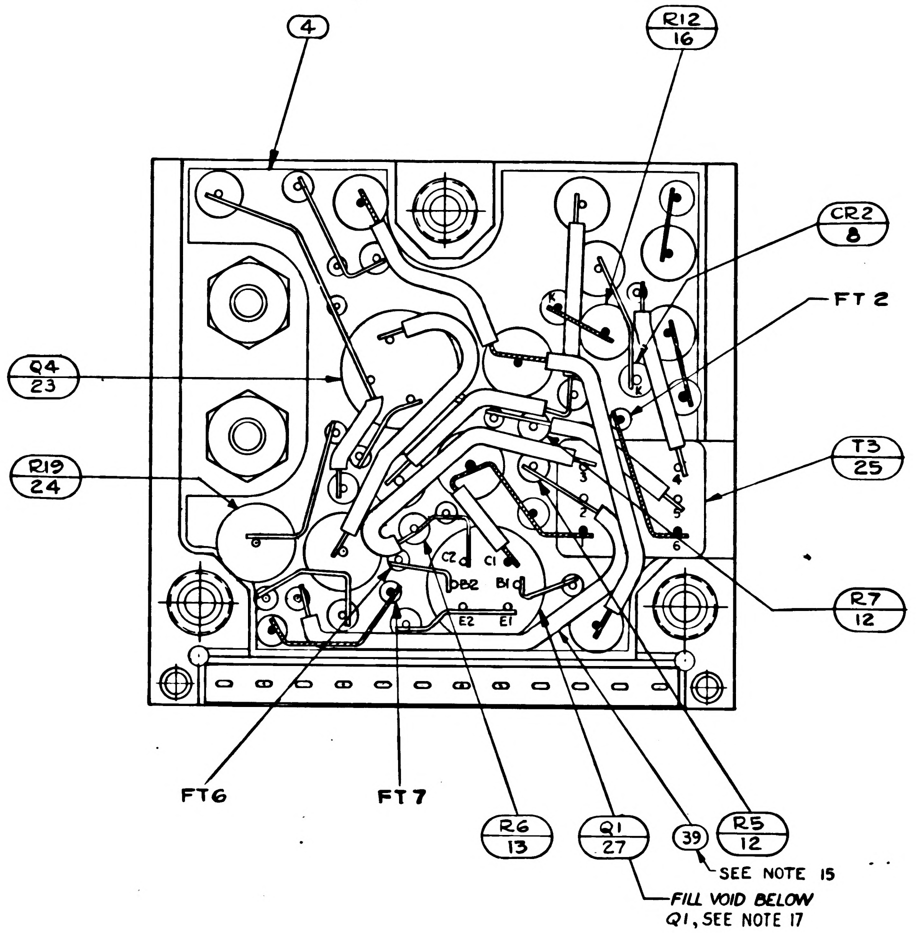
MAX.
SEE NOTE 3
.000
.005
22 2 REQ'D
33 2 REQD
SEE NOTE 11
34 2 REQD
36
SEE NOTES 6 AND 9
SEE
NOTE 3
.000-.015
SEE NOTE 5
.300
(REF.)
.000
.015
.06
1.550
SEE NOTE 3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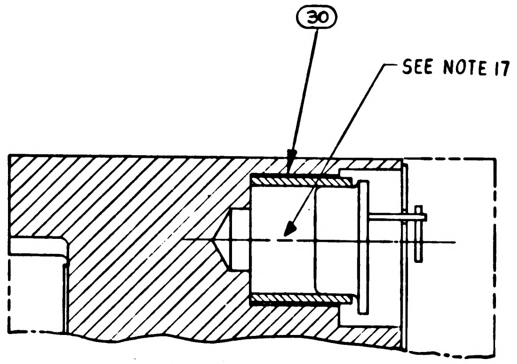
R12
16
CR2
8
FT 2
Q4
23
R19
24
T3
25
R7
12
C2
C1
B2
B1
E2
E1
FT6
FT7
R6
13
Q1
27
39
R5
12
SEE NOTE 15
FILL VOID BELOW
Q1, SEE NOTE 17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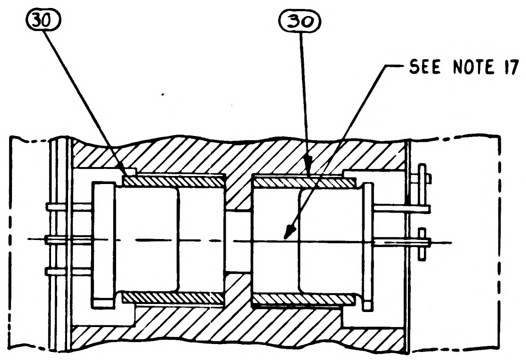
SEE NOTE 17

PARTIAL SECTION A-A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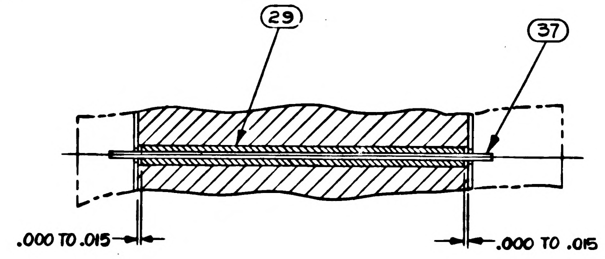
SEE NOTE 17

PARTIAL SECTION B-B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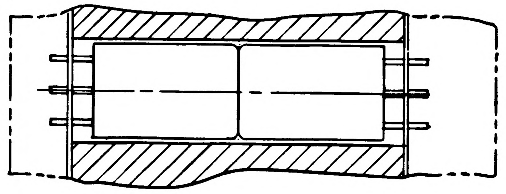
37
.000 TO .015
.000 TO .015

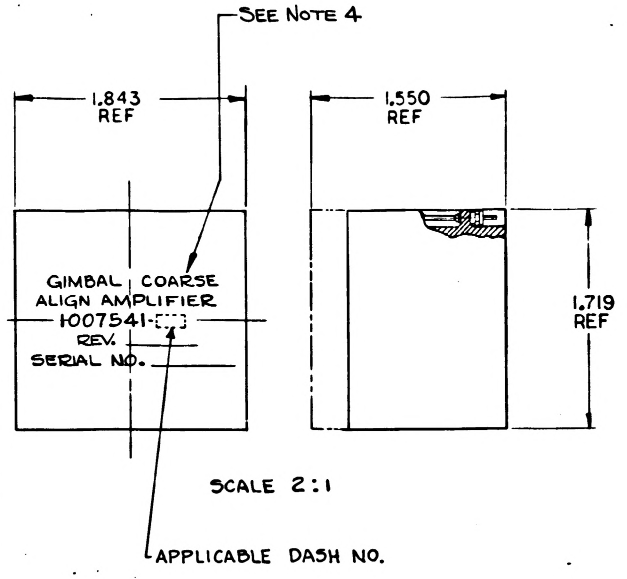
PARTIAL SECTION C-C

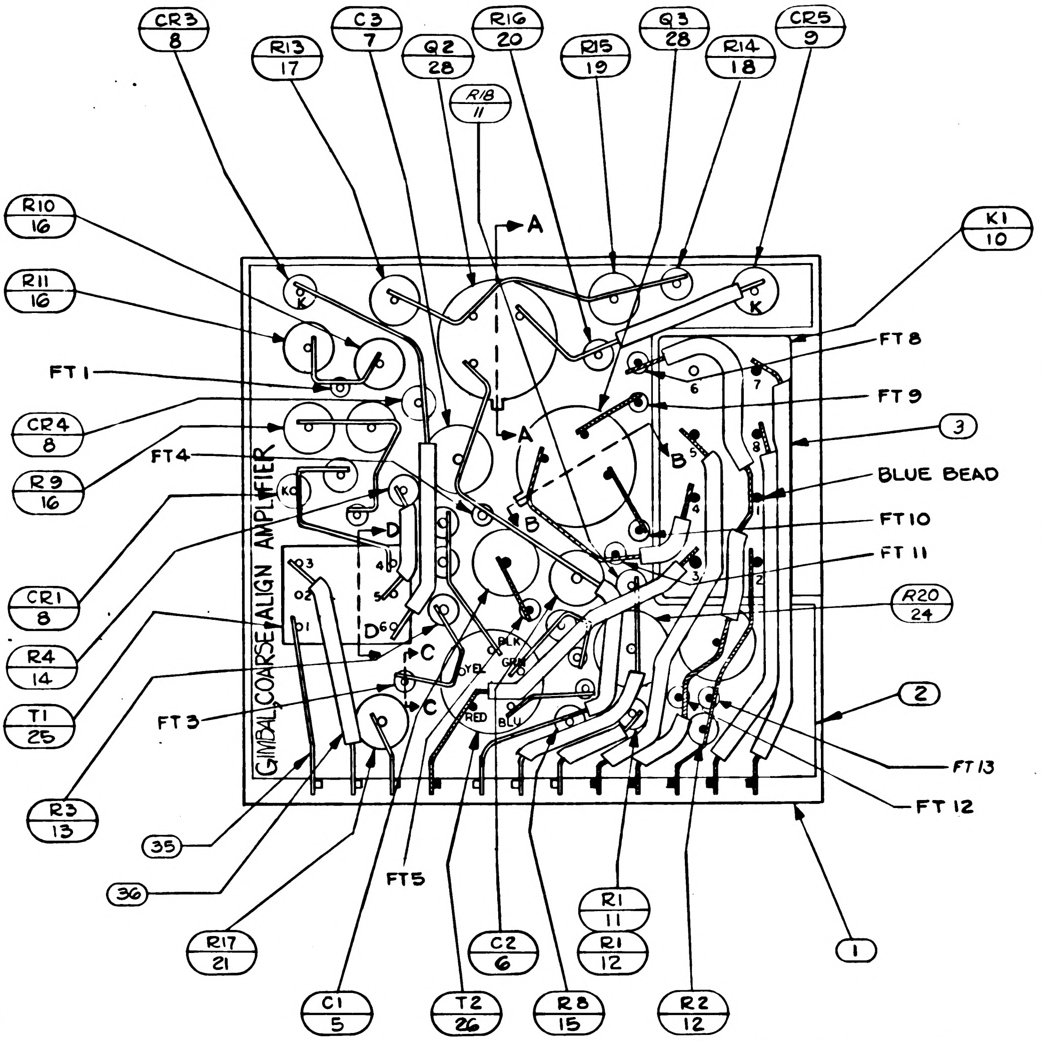


PARTIAL SECTION D-D

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES + − + − + − − − − − − −	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DO NOT SCALE THIS DRAWING	DRAWN Orgel 14 Aug 64 DATE CHECKED A. Udovich 27 AUG 64 APPROVAL APPROVAL	GIMBAL COARSE ALIGN AMPLIFIER MODULE ASSY	
MATERIAL	NASA APPROVAL 10-23-64	CODE IDENT NO. 80230	SIZE E · 1007541
CONTRACT NAS 9-497	MIT APPROVAL 10/21/64	SCALE 5:1	SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 17331		12-MAR-65	GM / EF
B		REVISED PER TDRR 19403		2 JUN 65	JSM / EF
C		REVISED PER TDRR 19429		3 JUN 65	/ EF



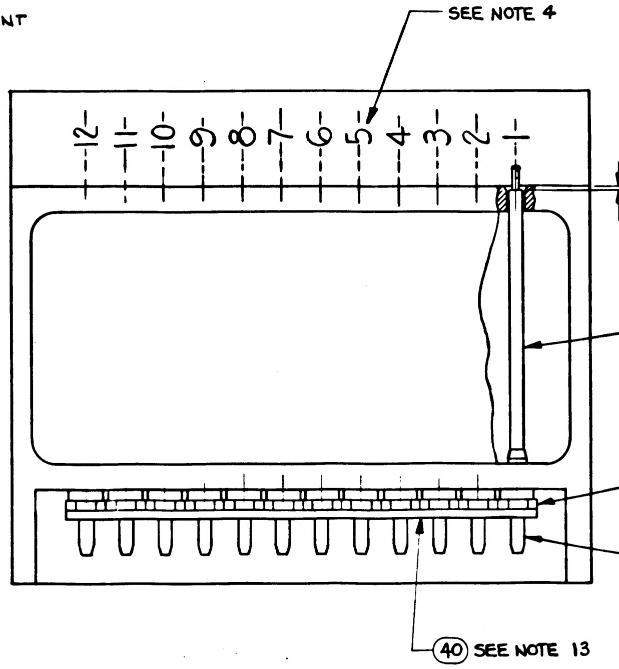


19. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03±.03 OF EXTERNAL EDGE

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
4. MARK PIN NUMBERS $^{.100}_{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $^{.140}_{.100}$ HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
5. AREA TO BE FREE OF ENCAPSULATING COMPOUND
6. USE AS REQUIRED
7. ON ITEMS ②, ③ AND ④:
   "K" INDICATES CATHODE SIDE OF DIODE
   FT ( ) INDICATES FEED THRU
   "C" INDICATES COLLECTOR LEAD OF TRANSISTOR
   B " " BASE " "
   E " " EMITTER " "
   C( ) " " COLLECTOR " " MULTI-STAGE TRANSISTOR
   B( ) " " BASE " "
   E( ) " " EMITTER " "
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. TYPICAL SLEEVING FOR CR1 THRU CR4 R1 THRU R8, R14, R16 AND R18
10. MUST MEET REQUIREMENTS OF ND1002136
11. TORQUE TO 4±1 IN-LB FOR ASSY OF ITEM 10
12. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
13. BOND ITEM ㊵ TO ITEM ㉛ PER ND1002237.
14. COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009 METHOD C AND CENTRALIZED
15. USE MIL-I-631 TYPE F, FORM U, GRADE C, CLASS I, CATAGORY I, ONE PLACE ONLY. BOND IN PLACE PER ND1002004, TYPE I
16. PROCURE PER PS 1007041.
17. FILL ~~PER~~ ND 1002117
18. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~



QUANTITY REQUIRED				EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
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		☒			REF	1009524	SCHEMATIC
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		AR	AR		39	MIL-I-631	INSULATION, SLEEVING 22 GA
		AR	AR		38	1006776-20	INSULATION SLEEVING
		AR	AR		37	1006757-8	WIRE, ELEC.
		AR	AR		36	1006776-21	INSULATION SLEEVING
		AR	AR		35	1006757-1	WIRE, ELEC.
		2	2		34	1008070-5	WASHER- FLAT
		2	2		33	MS20341-4A	NUT-HEX
		12	12		32	1006782-5	CONTACT, WRAPOST MALE MINAT.
		12	12		31	1006775	INSULATOR, WRAPOST MALE MINAT
		3	3		30	1008025-2	INSULATOR, BUSHING
		AR	AR		29	1006776-22	INSULATION SLEEVING
		2	2		28	1010270	TRANSISTOR
		1	1		27	1010252-1	TRANSISTOR
		1	1		26	1010326	TRANSFORMER
		2	2		25	1010329-1	TRANSFORMER
		2	2		24	1010278-71	RESISTOR, FIXED
		1	1		23	1010345-1	TRANSISTOR
		2	2		22	MS35338-78	WASHER, LOCK
		1	1		21	1010364-543	RESISTOR, FIXED
		1	1		20	1006750-56	RESISTOR
		1	1		19	1010364-765	RESISTOR, FIXED
		1	1		18	1010369-105	RESISTOR, FIXED
		1	1		17	1010364-579	RESISTOR, FIXED
		4	4		16	1010364-443	RESISTOR, FIXED
		1	1		15	1006750-43	RESISTOR
		1	1		14	1006750-48	RESISTOR
		2	2		13	1010369-97	RESISTOR, FIXED
		4	3		12	1006750-73	RESISTOR
		1	2		11	1006750-80	RESISTOR
		1	1		10	1010353-1	RELAY, ELECTROMAGNETIC,
		1	1		9	1010372-22	DIODE, SEMICONDUCTOR DEVICE
		4	4		8	1010392-1	DIODE, SEMICONDUCTOR DEVICE
		1	1		7	1010279-232	CAPACITOR, FIXED
		1	1		6	1010279-228	CAPACITOR, FIXED
		1	1		5	1010264-15	CAPACITOR, FIXED
		1	1		4	1015692	INSULATOR
		1	1		3	1015690	INSULATOR
		1	1		2	1015691	INSULATOR
		1	1		1	1015689	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - XXX ±.005 + -
- - XX ±.02 - -
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS 9-497

M.I.T.
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orgel DATE 14 AUG 64
CHECKED Udorach 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

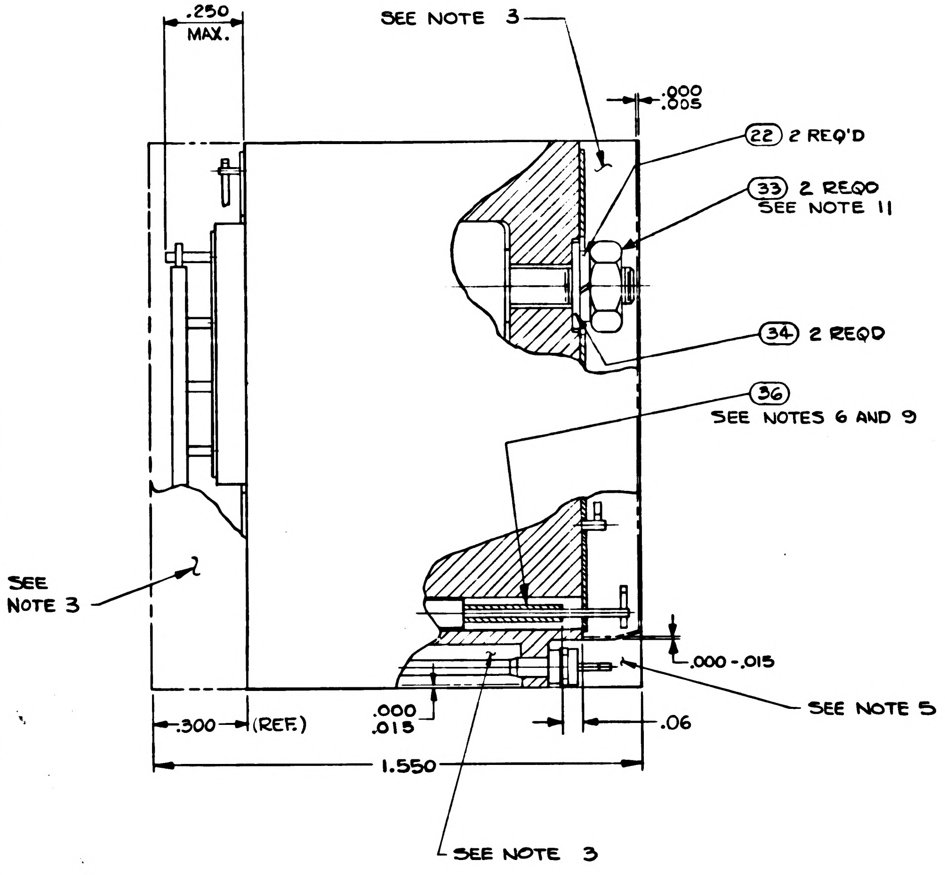
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL COARSE ALIGN
AMPLIFIER MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007541
SCALE 5:1
SHEET 1 OF 2

1007541 C

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17331		2-MAR-65	GM / EF
B		REVISED PER TDRR 19403		2 JUN 65	JSM
C		REVISED PER TDRR 19429		3 JUN 65	EF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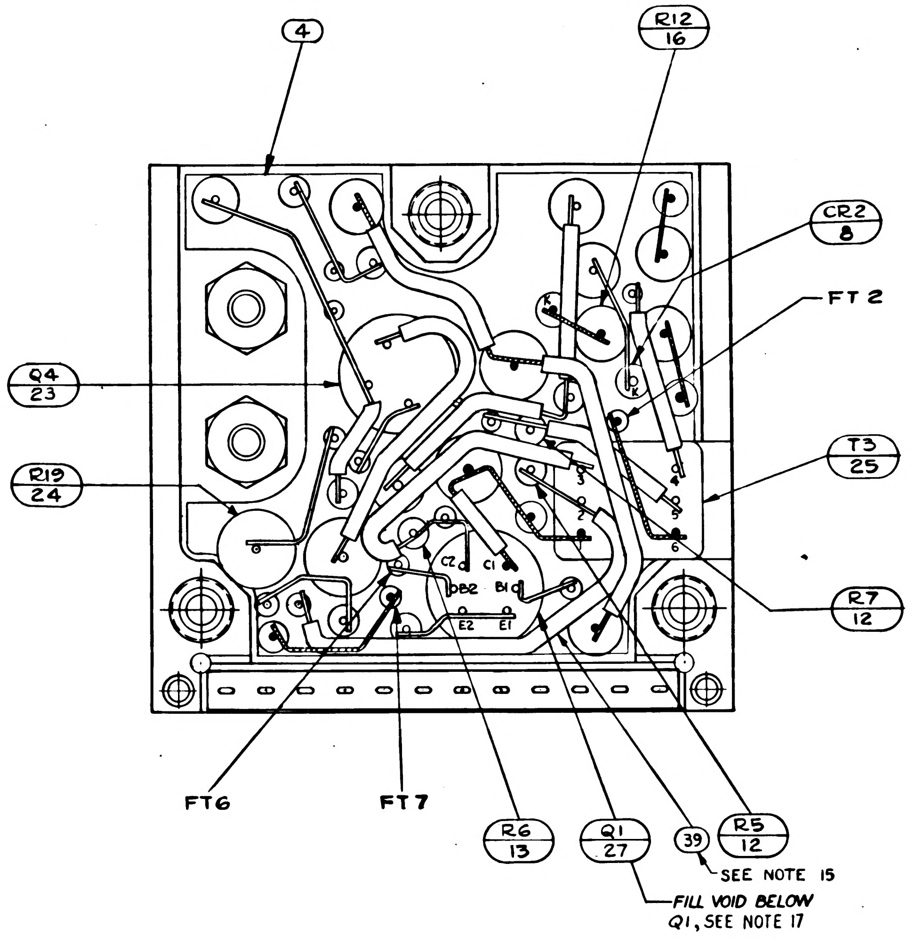
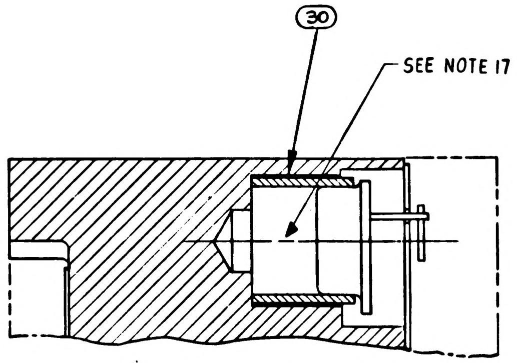
SEE NOTE 3
.000 .005
(22) 2 REQ'D
(33) 2 REQD SEE NOTE 11
(34) 2 REQD
(36) SEE NOTES 6 AND 9
SEE NOTE 3
.000-.015
.000 .015
SEE NOTE 5
.300
(REF.)
.06
1.550
SEE NOTE 3


(4)
(R12 / 16)
(CR2 / 8)
FT 2
(Q4 / 23)
(T3 / 25)
(R19 / 24)
(R7 / 12)
C2
C1
B2
B1
E2
E1
FT6
FT7
(R6 / 13)
(Q1 / 27)
(39) SEE NOTE 15
(R5 / 12)
FILL VOID BELOW Q1, SEE NOTE 17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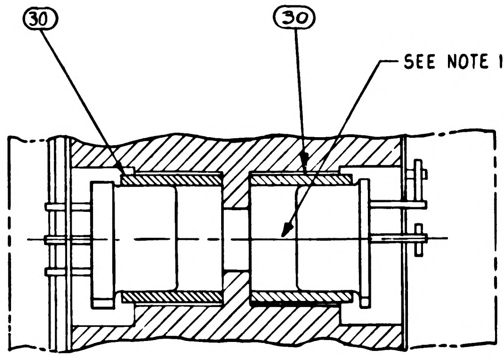
SEE NOTE 17

PARTIAL SECTION A-A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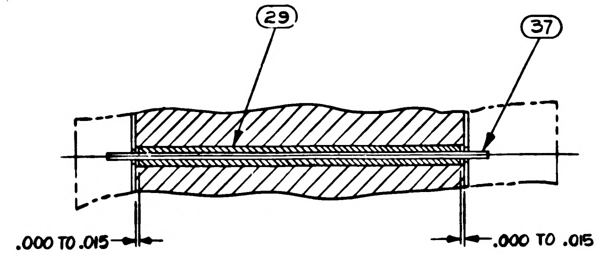
SEE NOTE 17

PARTIAL SECTION B-B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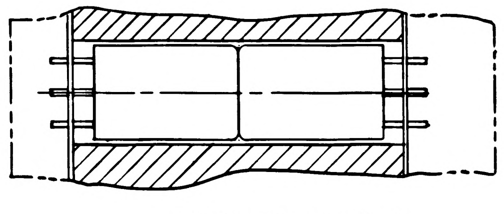
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C



PARTIAL SECTION D-D

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

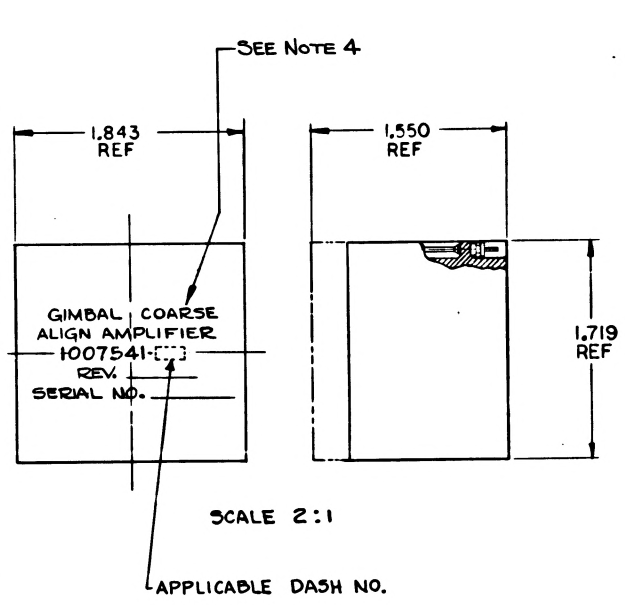
M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orgel DATE 14 Aug 64
CHECKED A Udovich 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL 5-20-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

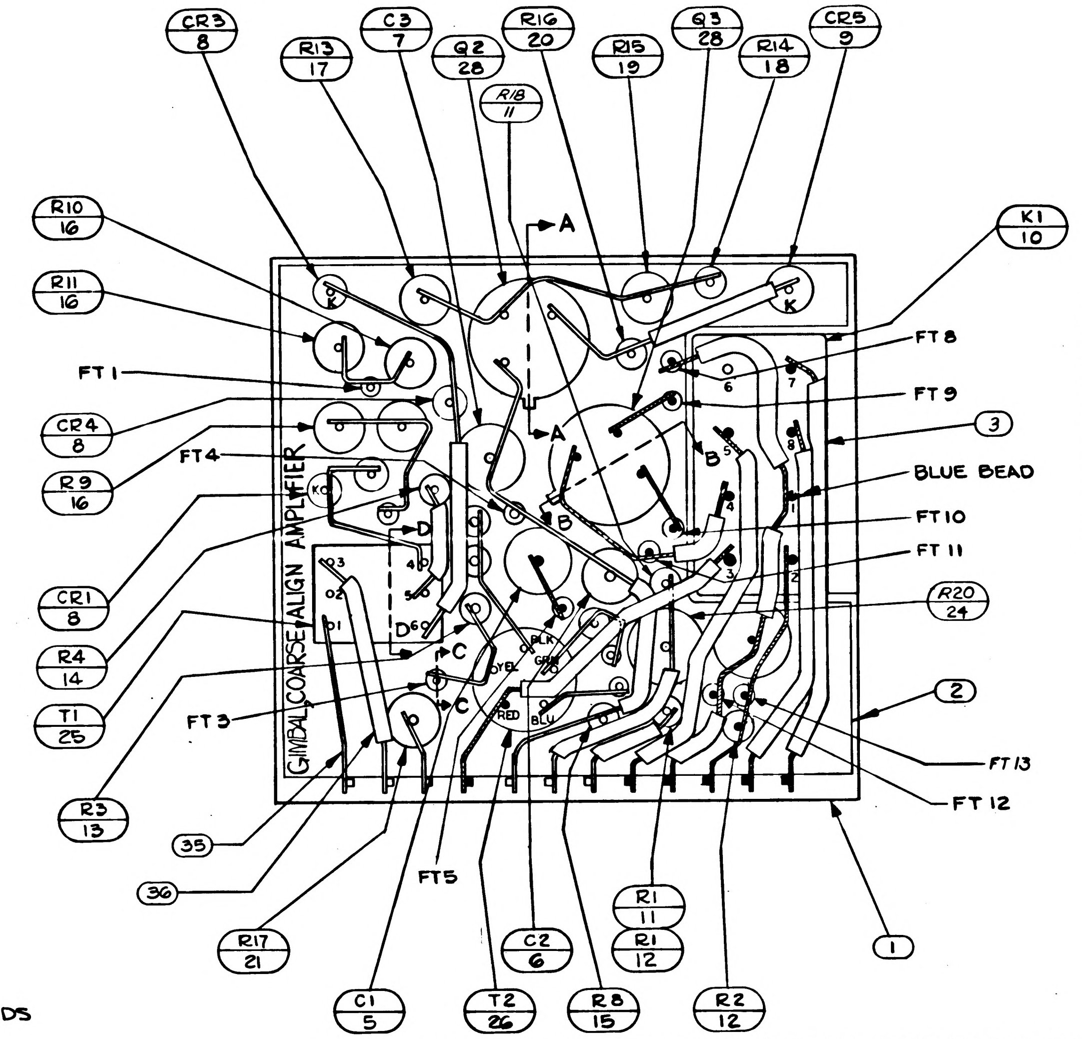
GIMBAL COARSE ALIGN
AMPLIFIER MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007541
SCALE 5:1
SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17331		12-MAR-65	GM EF
B		REVISED PER TDRR 19403		2 Jun 65	EF
C		REVISED PER TDRR 19429		[illegible]	EF
D		REVISED PER TDRR 19507		[illegible]	EF



SCALE 2:1

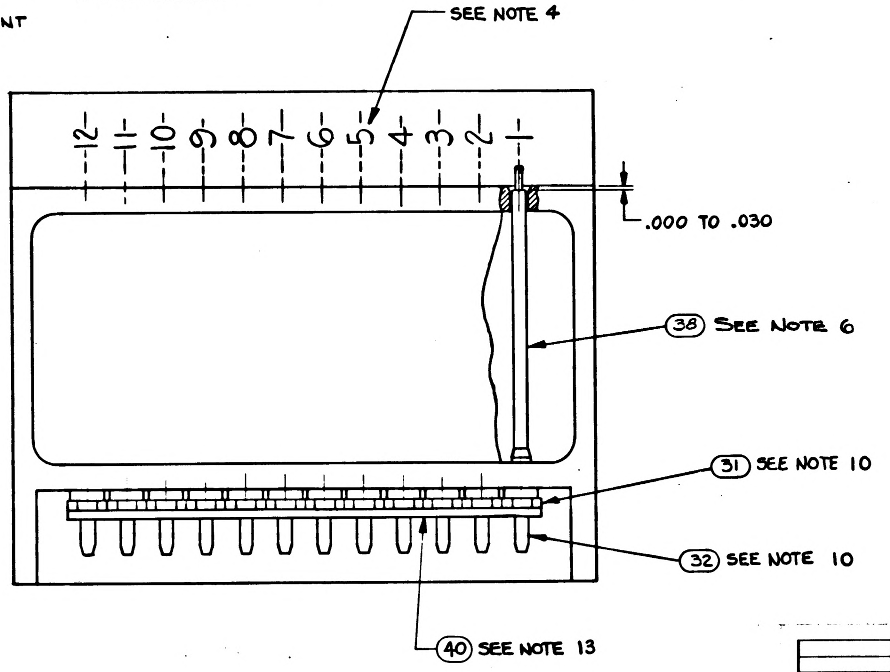


CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03±.03 OF EXTERNAL EDGE

TABLE I

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
4. MARK PIN NUMBERS $^{.100}_{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $^{.140}_{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. AREA TO BE FREE OF ENCAPSULATING COMPOUND
6. USE AS REQUIRED
7. ON ITEMS ②, ③ AND ④ :

   "K" INDICATES CATHODE SIDE OF DIODE
   FT ( ) INDICATES FEED THRU
   "C" INDICATES COLLECTOR LEAD OF TRANSISTOR
   B " " BASE " "
   E " " EMITTER " "
   C( ) " " COLLECTOR " " MULTI-STAGE TRANSISTOR
   B( ) " " BASE " "
   E( ) " " EMITTER " "
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. TYPICAL SLEEVING FOR CR1 THRU CR4, R1 THRU R8, R14, R16 AND R18
10. MUST MEET REQUIREMENTS OF ND1002136
11. TORQUE TO 4±1 IN-LB FOR ASSY OF ITEM 10
12. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
13. BOND ITEM ㊵ TO ITEM ㉛ PER ND 1002237.
14. COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009 METHOD H AND CENTRALIZED
15. USE MIL-I-631 TYPE F, FORM U, GRADE C, CLASS I, CATAGORY I, ONE PLACE ONLY. BOND IN PLACE PER ND1002004, TYPE I
16. PROCURE PER PS 1007041.
17. FILL PER ND 1002117
18. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
19. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
20. EXCEPT FOR HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140° F FOR EIGHT HOURS. CONNECTOR PIN BLADES & INSULATORS TO BE FREE FROM PAINT.
21. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON & ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.



		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
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		X			REF	1009524	SCHEMATIC
		1	1		40	1008540-12	GASKET, CONNECTOR MINIATURE
		AR	AR		39	MIL-I-631	INSULATION, SLEEVING 22 GA
		AR	AR		38	1006776-20	INSULATION SLEEVING
		AR	AR		37	1006757-8	WIRE, ELEC.
		AR	AR		36	1006776-21	INSULATION SLEEVING
		AR	AR		35	1006757-1	WIRE, ELEC.
		2	2		34	1008070-5	WASHER- FLAT
		2	2		33	MS20341-4A	NUT-HEX
		12	12		32	1006782-5	CONTACT, WRAPOST MALE MINAT.
		12	12		31	1006775	INSULATOR, WRAPOST MALE MINAT.
		3	3		30	1008025-2	INSULATOR, BUSHING
		AR	AR		29	1006776-22	INSULATION SLEEVING
		2	2		28	1010270	TRANSISTOR
		1	1		27	1010252-1	TRANSISTOR
		1	1		26	1010326	TRANSFORMER
		2	2		25	1010329-1	TRANSFORMER
		2	2		24	1010278-71	RESISTOR, FIXED
		1	1		23	1010345-1	TRANSISTOR
		2	2		22	MS35338-78	WASHER, LOCK
		1	1		21	1010364-543	RESISTOR, FIXED
		1	1		20	1006750-56	RESISTOR
		1	1		19	1010364-765	RESISTOR, FIXED
		1	1		18	1010369-105	RESISTOR, FIXED
		1	1		17	1010364-579	RESISTOR, FIXED
		4	4		16	1010364-443	RESISTOR, FIXED
		1	1		15	1006750-43	RESISTOR
		1	1		14	1006750-48	RESISTOR
		2	2		13	1010369-97	RESISTOR, FIXED
		4	3		12	1006750-73	RESISTOR
		1	2		11	1006750-80	RESISTOR
		1	1		10	1010353-1	RELAY, ELECTROMAGNETIC,
		1	1		9	1010372-22	DIODE, SEMICONDUCTOR DEVICE
		4	4		8	1010392-1	DIODE, SEMICONDUCTOR DEVICE
		1	1		7	1010279-232	CAPACITOR, FIXED
		1	1		6	1010279-228	CAPACITOR, FIXED
		1	1		5	1010264-15	CAPACITOR, FIXED
		1	1		4	1015692	INSULATOR
		1	1		3	1015690	INSULATOR
		1	1		2	1015691	INSULATOR
		1	1		1	1015689	HEATSINK

QUANTITY REQUIRED
LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + - DECIMALS XXX ±.005 XX ±.02 ANGLES + -
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

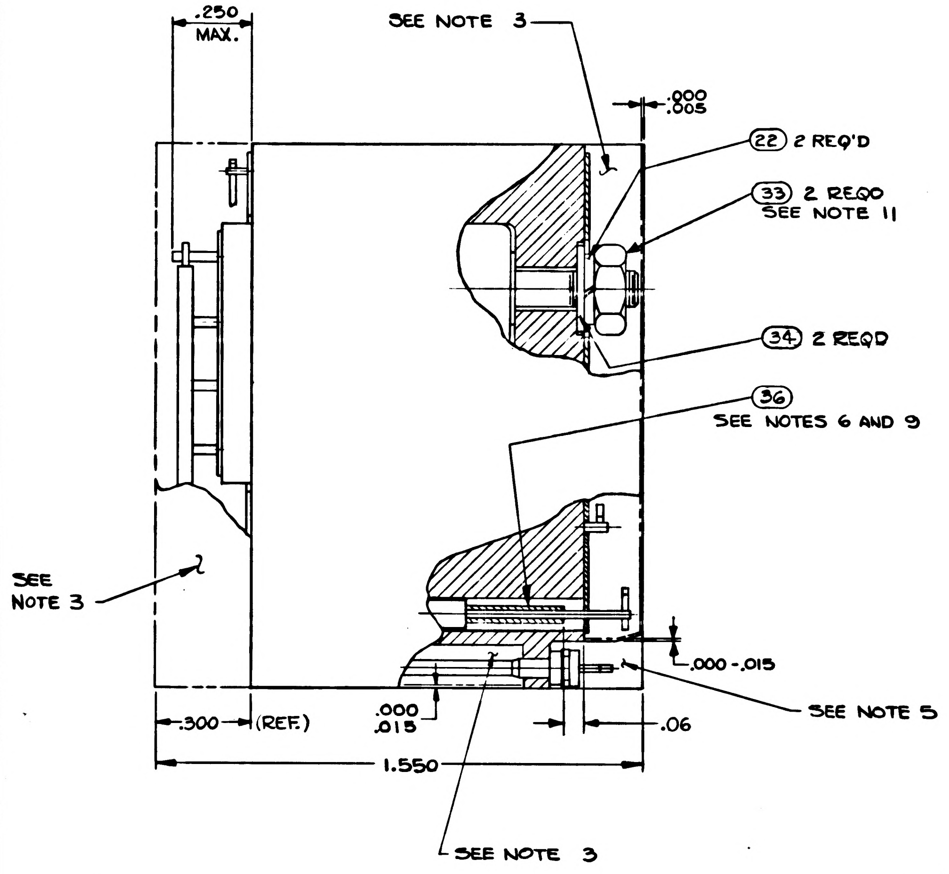
MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orgel DATE 14 AUG 64
CHECKED A. Udonich 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL COARSE ALIGN
AMPLIFIER MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007541
SCALE 3:1
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17331		12-MAR-65	GM
B		REVISED PER TDRR 19403		2 Jun 65	
C		REVISED PER TDRR 19429		[illegible]	
D		REVISION STATUS CHG PER TDRR 95CT		[illegible]	



.250 MAX.
SEE NOTE 3
.000 .005
22 2 REQ'D
33 2 REQD SEE NOTE 11
34 2 REQD
36 SEE NOTES 6 AND 9
SEE NOTE 3
.000-.015
SEE NOTE 5
.300
(REF.)
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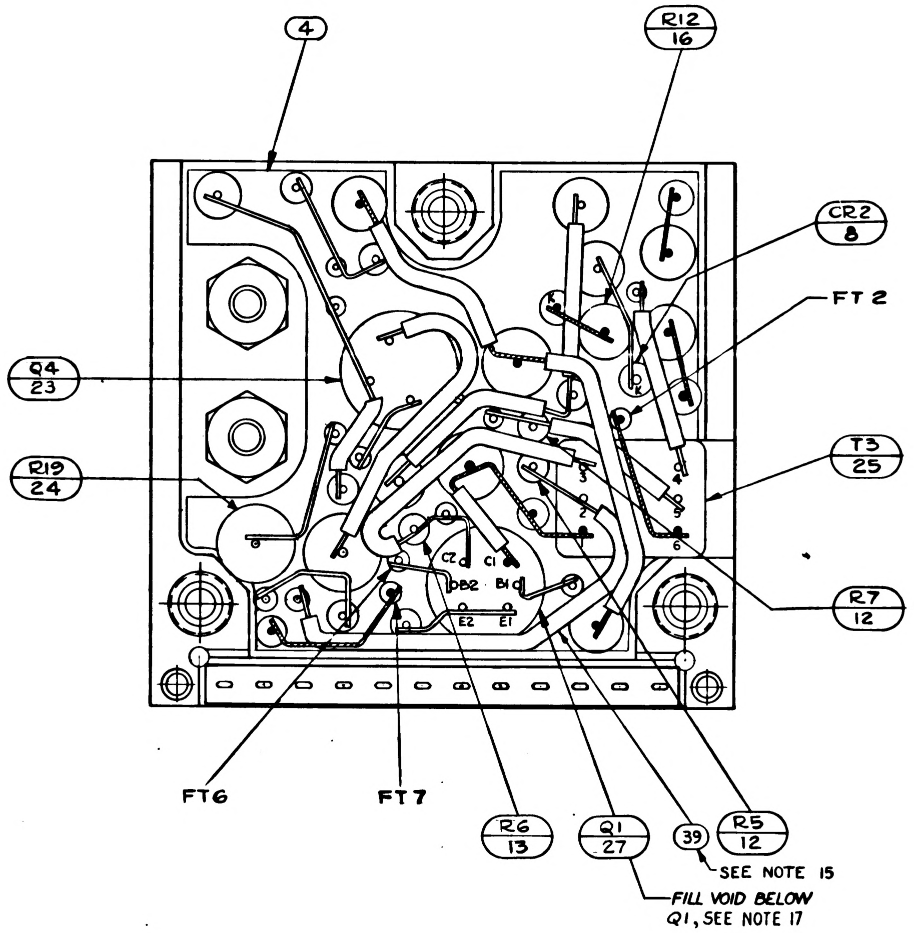
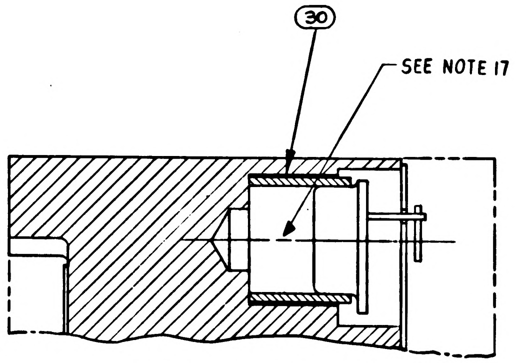
.06
1.550
SEE NOTE 3



4
R12 16
CR2 8
FT 2
Q4 23
R19 24
T3 25
R7 12
C2
C1
DB2
B1
E2
E1
FT6
FT7
R6 13
Q1 27
39
R5 12
SEE NOTE 15
FILL VOID BELOW Q1, SEE NOTE 17



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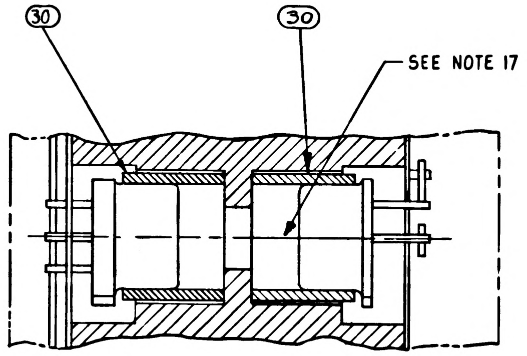
SEE NOTE 17

PARTIAL SECTION A-A



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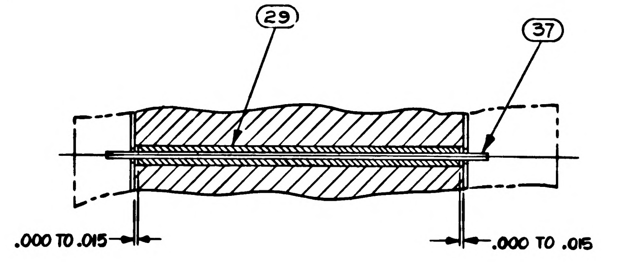
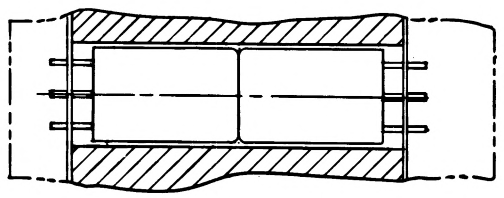
SEE NOTE 17

PARTIAL SECTION B-B



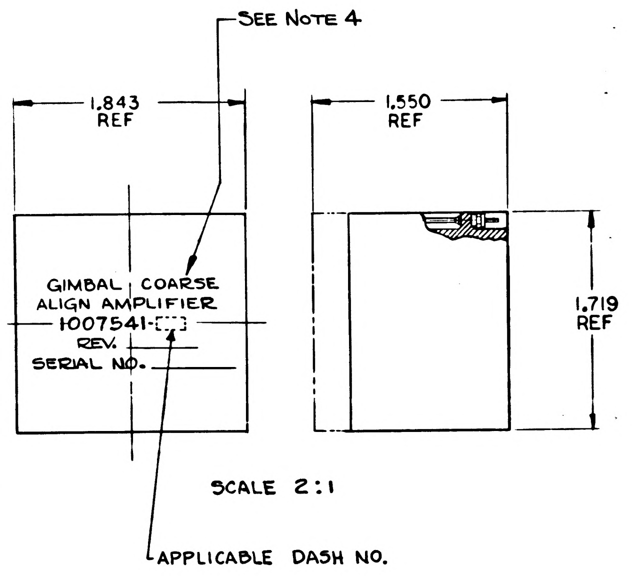
29
37
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C

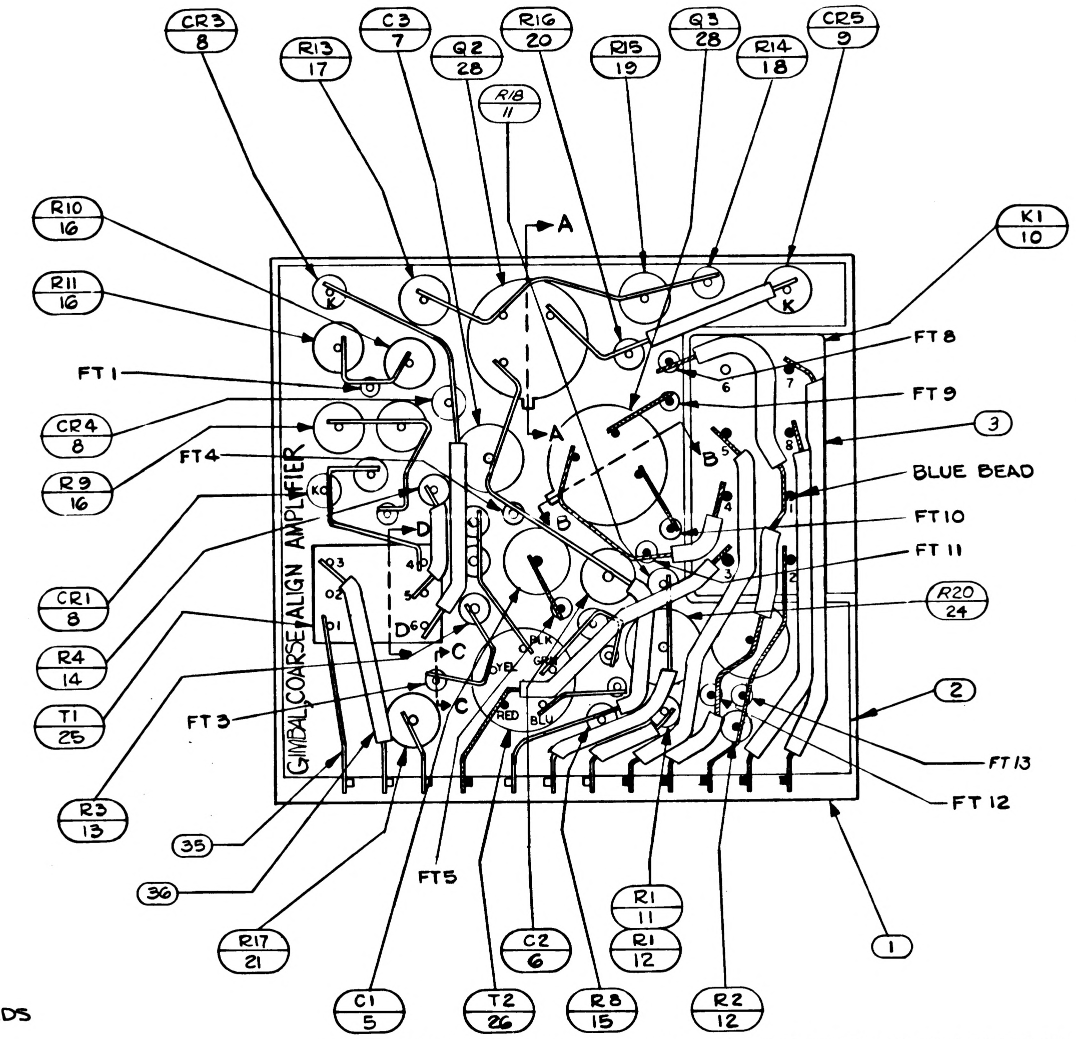


PARTIAL SECTION D-D

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES + − + − + − DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB CAMBRIDGE MASS DRAWN Orzel DATE 14 Aug 64 CHECKED A. Udovich 27 AUG 64 APPROVAL APPROVAL	MANNED SPACECRAFT CENTER HOUSTON, TEXAS GIMBAL COARSE ALIGN AMPLIFIER MODULE ASSY
MATERIAL	NASA APPROVAL 10-20-64	CODE IDENT NO. 80230 SIZE E 1007541
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 5:1 SHEET 2 OF 2



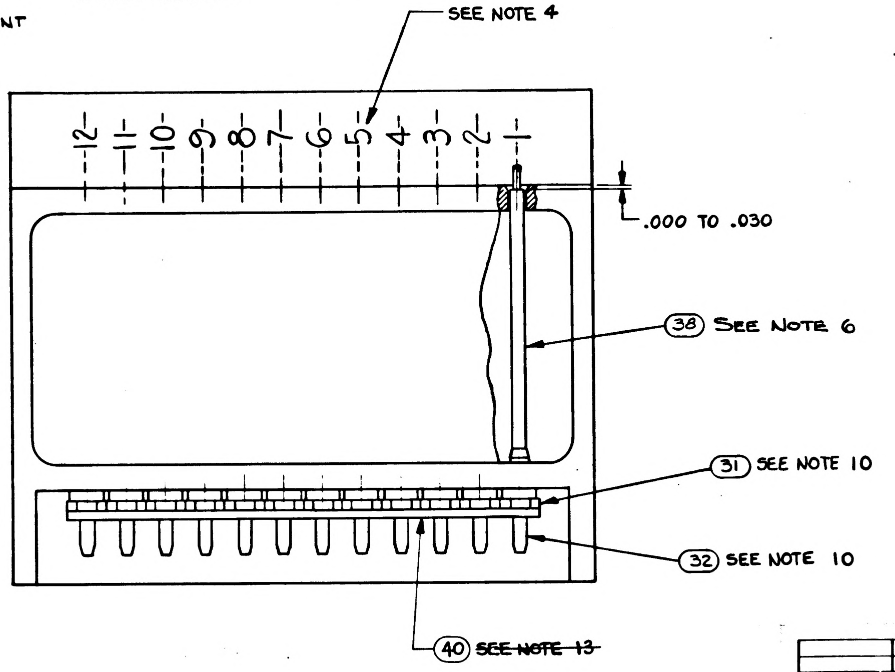
SCALE 2:1



CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SUR[illegible]E ADJACENT TO HEATSINK EXTER SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER [illegible] WITHIN .03±.03 OF EXTERNAL [illegible]

TABLE I

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
4. MARK PIN NUMBERS $^{.100}_{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $^{.140}_{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. AREA TO BE FREE OF ENCAPSULATING COMPOUND
6. USE AS REQUIRED
7. ON ITEMS ②, ③ AND ④:
   "K" INDICATES CATHODE SIDE OF DIODE
   FT ( ) INDICATES FEED THRU
   "C" INDICATES COLLECTOR LEAD OF TRANSISTOR
   B " " BASE " "
   E " " EMITTER " "
   C( ) " " COLLECTOR " " MULTI-STAGE TRANSISTOR
   B( ) " " BASE " "
   E( ) " " EMITTER " "
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. TYPICAL SLEEVING FOR CR1 THRU CR4, R1 THRU R8, R14, R16 AND R18
10. MUST MEET REQUIREMENTS OF ND1002136
11. TORQUE TO 4 ±1 IN-LB FOR ASSY OF ITEM 10
12. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
13. ~~BOND ITEM ㊵ TO ITEM ㉛ PER ND1002237.~~
14. COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009 METHOD H AND CENTRALIZED
15. USE MIL-I-631 TYPE F, FORM U, GRADE C, CLASS I, CATAGORY I, ONE PLACE ONLY. BOND IN PLACE PER ND1002004, TYPE I
16. PROCURE PER PS 1007041.
17. FILL PER ND 1002117
18. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
19. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
20. EXCEPT FOR HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140° F FOR EIGHT HOURS. CONNECTOR PIN BLADES & INSULATORS TO BE FREE FROM PAINT.
21. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON & ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.



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					REF	1009524	SCHEMATIC
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		AR	AR		39	MIL-I-631	INSULATION, SLEEVING 22 GA
		AR	AR		38	1006776-20	INSULATION SLEEVING
		AR	AR		37	1006757-8	WIRE, ELEC.
		AR	AR		36	1006776-21	INSULATION SLEEVING
		AR	AR		35	1006757-1	WIRE, ELEC.
		2	2		34	1008070-5	WASHER- FLAT
		2	2		33	MS20341-4A	NUT-HEX
		12	12		32	1006782-5	CONTACT, WRAPOST MALE MINAT.
		12	12		31	1006775	INSULATOR, WRAPOST MALE MINAT
		3	3		30	1008025-2	INSULATOR, BUSHING
		AR	AR		29	1006776-22	INSULATION SLEEVING
		2	2		28	1010270	TRANSISTOR
		1	1		27	1010252-1	TRANSISTOR
		1	1		26	1010326	TRANSFORMER
		2	2		25	1010329-1	TRANSFORMER
		2	2		24	1010278-71	RESISTOR, FIXED
		1	1		23	1010345-1	TRANSISTOR
		2	2		22	MS35338-78	WASHER, LOCK
		1	1		21	1010364-543	RESISTOR, FIXED
		1	1		20	1006750-56	RESISTOR
		1	1		19	1010364-765	RESISTOR, FIXED
		1	1		18	1010569-105	RESISTOR, FIXED
		1	1		17	1010364-579	RESISTOR, FIXED
		4	4		16	1010364-443	RESISTOR, FIXED
		1	1		15	1006750-43	RESISTOR
		1	1		14	1006750-48	RESISTOR
		2	2		13	1010369-97	RESISTOR, FIXED
		4	3		12	1006750-73	RESISTOR
		1	2		11	1006750-80	RESISTOR
		1	1		10	1010353-1	RELAY, ELECTROMAGNETIC,
		1	1		9	1010372-22	DIODE, SEMICONDUCTOR DEVICE
		4	4		8	1010392-1	DIODE, SEMICONDUCTOR DEVICE
		1	1		7	1010279-232	CAPACITOR, FIXED
		1	1		6	1010279-228	CAPACITOR, FIXED
		1	1		5	1010264-15	CAPACITOR, FIXED
		1	1		4	1015692	INSULATOR
		1	1		3	1015690	INSULATOR
		1	1		2	1015691	INSULATOR
		1	1		1	1015689	HEATSINK
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - XXX ±.005 + -
- - XX ±.02 - -
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orzel DATE 14 AUG 64
CHECKED A. Udovich 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

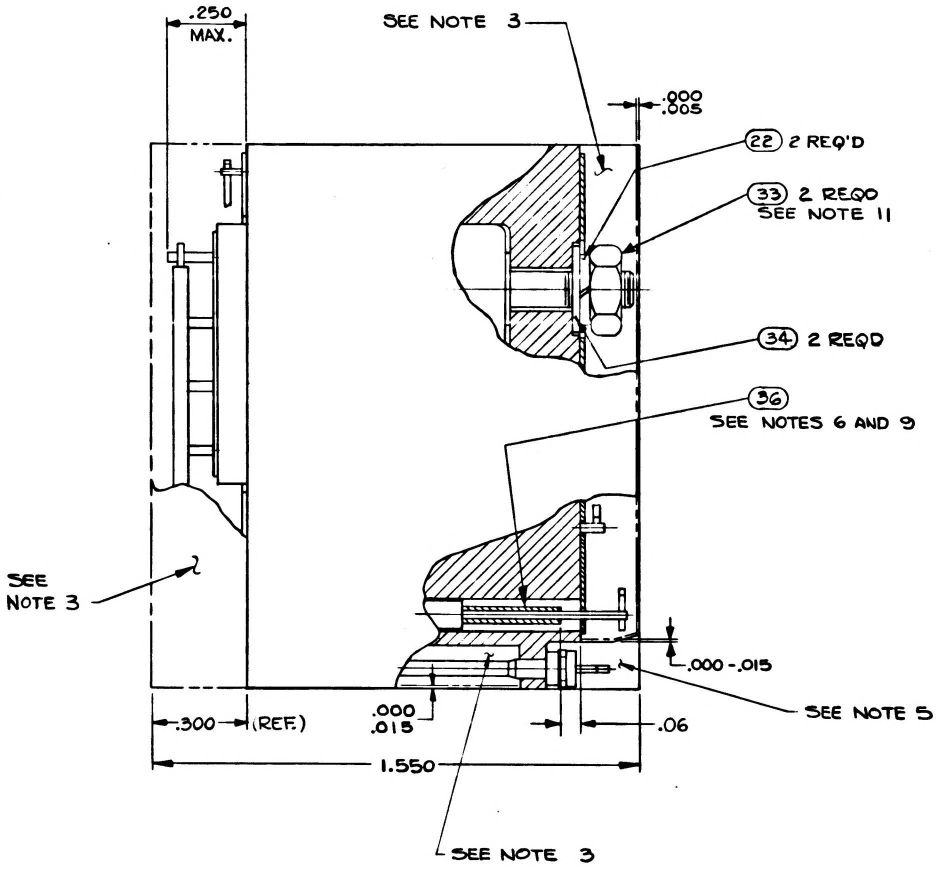
GIMBAL COARSE ALIGN
AMPLIFIER MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007541
SCALE 3:1
SHEET 1 OF 2

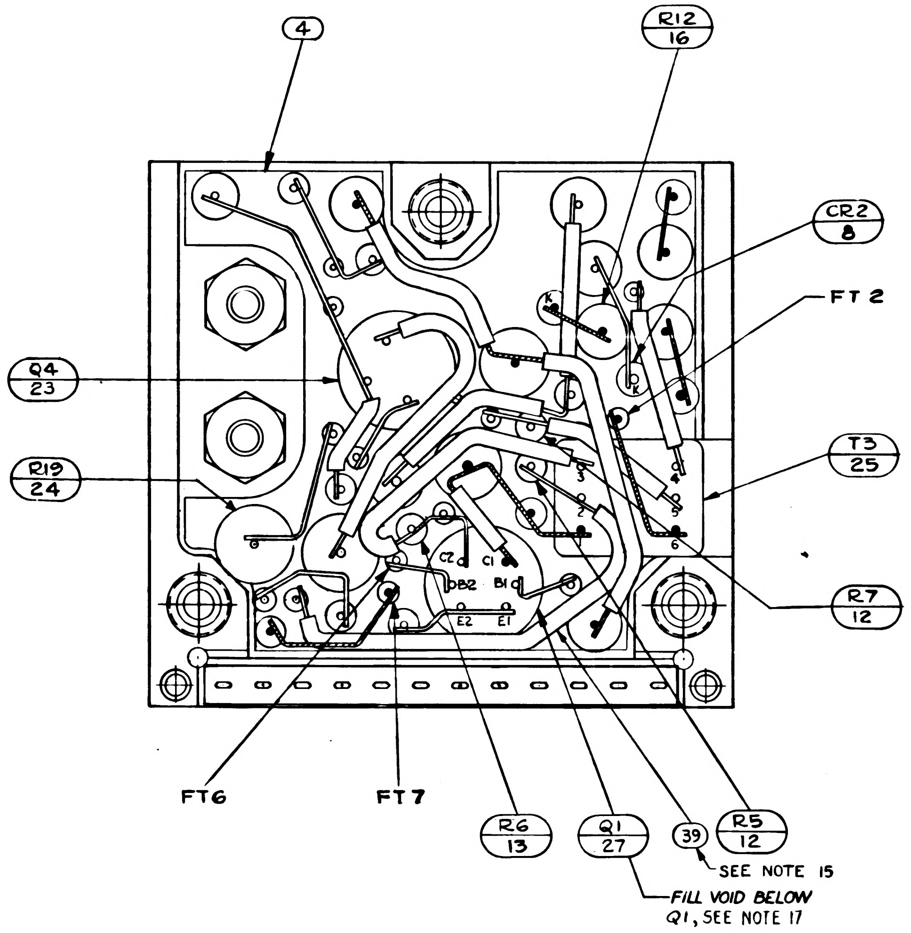
REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17331		MAR 65	M
B		REVISED PER TDRR 19403			
C		REVISED PER TDRR 19429			
D		REVISED PER TDRR 19507			
E		REVISED PER TDRR 20143			

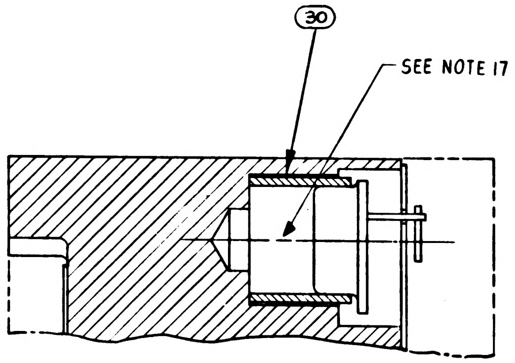
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17331		MAR 65	
B		REVISED PER TDRR 19403			
C		REVISED PER TDRR 9429			
D		REVISION STATUS CHG PER TDRR 950		7-44 65	
E		REVISION STATUS CHANGE			



.250 MAX.
SEE NOTE 3
.000 .005
22 2 REQ'D
33 2 REQD SEE NOTE 11
34 2 REQD
36 SEE NOTES 6 AND 9
SEE NOTE 3
.000-.015
SEE NOTE 5
.300 (REF.)
.000 .015
.06
1.550
SEE NOTE 3

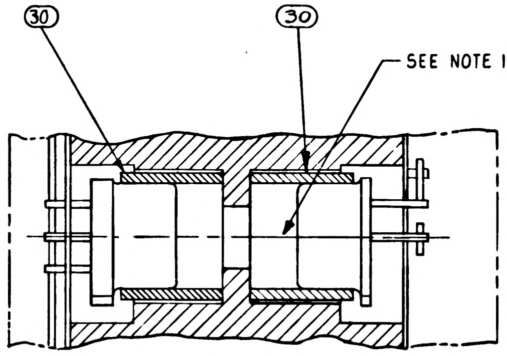


4
R12 16
CR2 8
FT 2
Q4 23
T3 25
R19 24
R7 12
C2
C1
B2
B1
E2
E1
FT6
FT7
R6 13
Q1 27
39
R5 12
SEE NOTE 15
FILL VOID BELOW Q1, SEE NOTE 17



30
SEE NOTE 17

PARTIAL SECTION A-A



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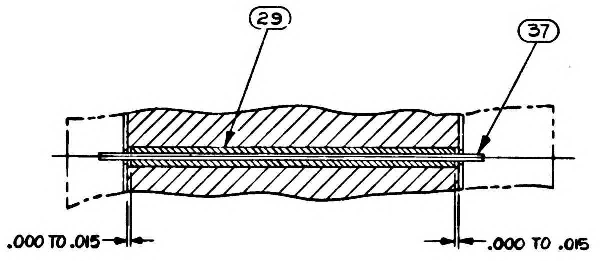
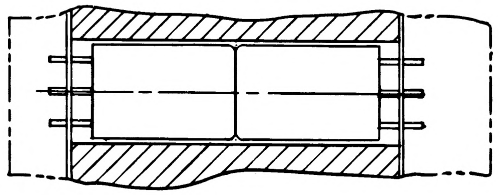
30
SEE NOTE 17

PARTIAL SECTION B-B



29
37
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C

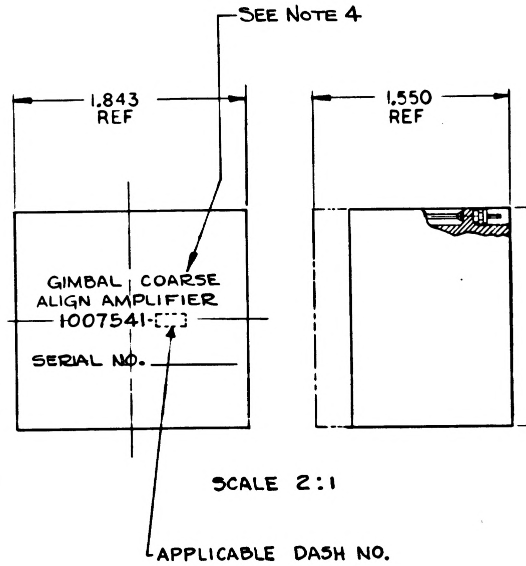


PARTIAL SECTION D-D

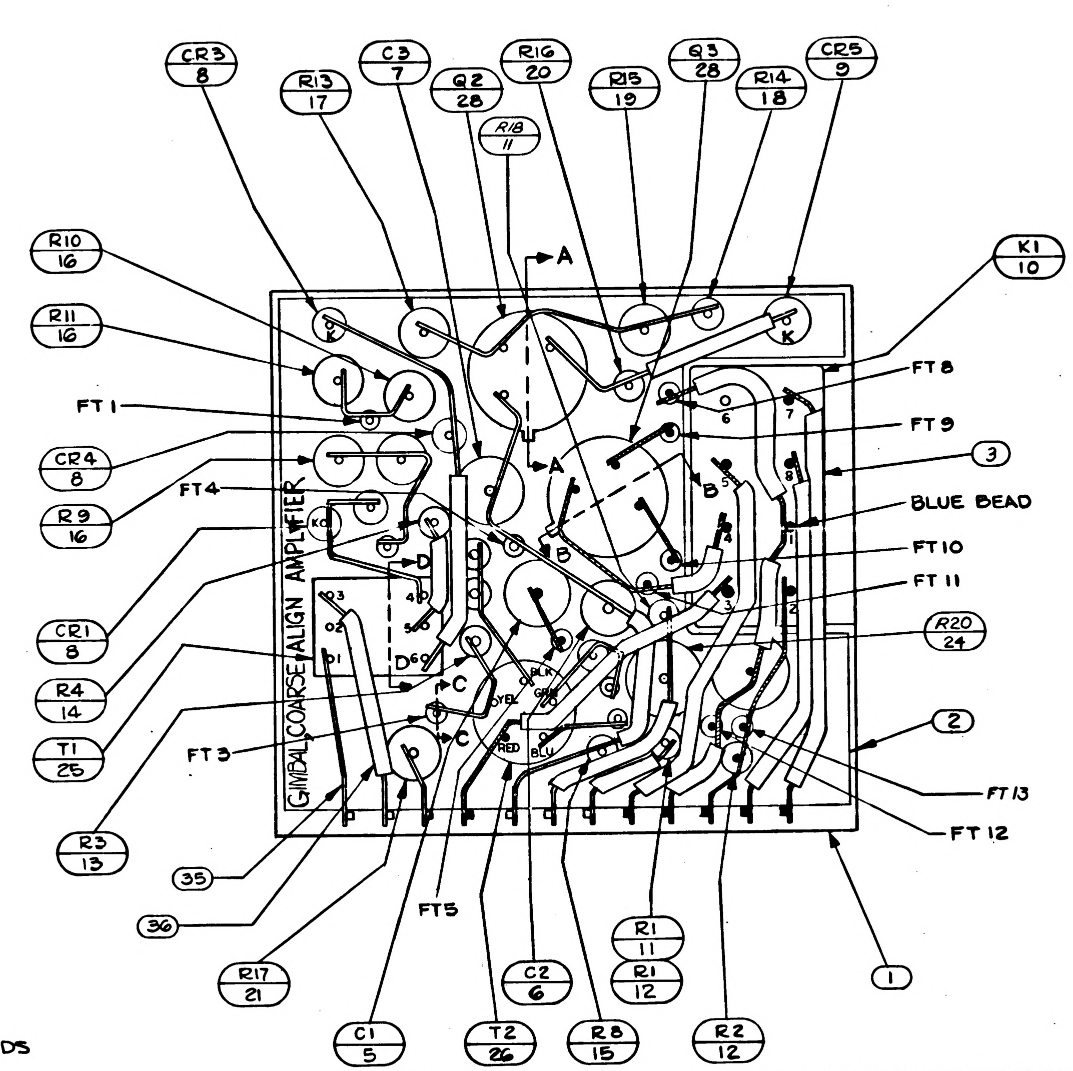
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± — ± — ± — DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB Cambridge Mass	MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
	DRAWN Orgel DATE 14 Aug 64 CHECKED A. Udovich 27 AUG 64 APPROVAL APPROVAL	GIMBAL COARSE ALIGN AMPLIFIER MODULE ASSY			
MATERIAL	NASA APPROVAL	CODE IDENT NO. 80230	SIZE E	1007541	
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 5:1			SHEET 2 OF 2

1007541

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17381		12-MAR-65	
B		REVISED PER TDRR 19403		2 JUN 65	
C		REVISED PER TDRR 19429		3 JUN [illegible]	
D		REVISED PER TDRR 19507		[illegible] JUN 65	
E		REVISED PER TDRR 20143		19 JUN 65	
F		REVISED PER TDRR 22949		12 OCT 65	



SCALE 2:1

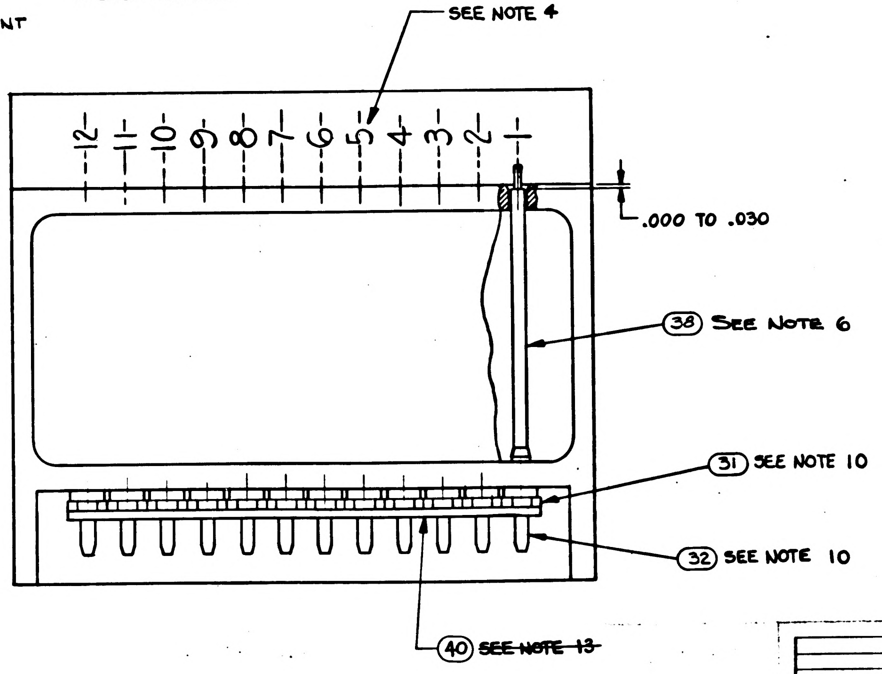


1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
4. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. AREA TO BE FREE OF ENCAPSULATING COMPOUND
6. USE AS REQUIRED
7. ON ITEMS ②, ③ AND ④:

   "K" INDICATES CATHODE SIDE OF DIODE
   FT ( ) INDICATES FEED THRU
   "C" INDICATES COLLECTOR LEAD OF TRANSISTOR
   B " " BASE " "
   E " " EMITTER " "
   C( ) " " COLLECTOR " " MULTI-STAGE TRANSISTOR
   B( ) " " BASE " "
   E( ) " " EMITTER " "
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. TYPICAL SLEEVING FOR CR1 THRU CR4, R1 THRU R8, R14, R16 AND R18
10. MUST MEET REQUIREMENTS OF ND1002136
11. TORQUE TO 4 ±1 IN-LB FOR ASSY OF ITEM 10
12. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
13. ~~BOND ITEM (40) TO ITEM (31) PER ND1002237.~~
14. COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009 METHOD J AND CENTRALIZED.
15. USE MIL-I-631 TYPE F, FORM U, GRADE C, CLASS I, CATAGORY I, ONE PLACE ONLY. BOND IN PLACE PER ND1002004, TYPE I
16. PROCURE PER PS 1007041.
17. FILL ~~PER~~ · ND 1002117
18. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
19. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
20. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
21. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON & ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SUR[illegible]E ADJACENT TO HEATSINK EXTER[illegible] SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE, 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETE[illegible] TO WITHIN .03 ±.03 OF EXTERNAL [illegible]E



					REF	1010023	SCHEMATIC
					REF	1009524	SCHEMATIC
		1	1		40	1008540-12	GASKET, CONNECTOR MINIATURE
		AR	AR		39	MIL-I-631	INSULATION, SLEEVING 22 GA
		AR	AR		38	1006776-20	INSULATION SLEEVING
		AR	AR		37	1006757-8	WIRE, ELEC.
		AR	AR		36	1006776-21	INSULATION SLEEVING
		AR	AR		35	1006757-1	WIRE, ELEC.
		2	2		34	1008070-5	WASHER- FLAT
		2	2		33	MS20341-4A	NUT-HEX
		12	12		32	1006782-5	CONTACT, WRAPOST MALE MINAT.
		12	12		31	1006775	INSULATOR, WRAPOST MALE MINAT.
		3	3		30	1008025-2	INSULATOR, BUSHING
		AR	AR		29	1006776-22	INSULATION SLEEVING
		2	2		28	1010270	TRANSISTOR
		1	1		27	1010252-1	TRANSISTOR
		1	1		26	1010326	TRANSFORMER
		2	2		25	1010329-1	TRANSFORMER
		2	2		24	1010278-71	RESISTOR, FIXED
		1	1		23	1010345-1	TRANSISTOR
		2	2		22	MS35338-78	WASHER, LOCK
		1	1		21	1010364-543	RESISTOR, FIXED
		1	1		20	1006750-56	RESISTOR
		1	1		19	1010364-765	RESISTOR, FIXED
		1	1		18	1010369-105	RESISTOR, FIXED
		1	1		17	1010364-579	RESISTOR, FIXED
		4	4		16	1010364-443	RESISTOR, FIXED
		1	1		15	1006750-43	RESISTOR
		1	1		14	1006750-48	RESISTOR
		2	2		13	1010369-97	RESISTOR, FIXED
		4	3		12	1006750-73	RESISTOR
		1	2		11	1006750-80	RESISTOR
		1	1		10	1010353-1	RELAY, ELECTROMAGNETIC,
		1	1		9	1010372-22	DIODE, SEMICONDUCTOR DEVICE
		4	4		8	1010392-1	DIODE, SEMICONDUCTOR DEVICE
		1	1		7	1010279-232	CAPACITOR, FIXED
		1	1		6	1010279-228	CAPACITOR, FIXED
		1	1		5	1010264-15	CAPACITOR, FIXED
		1	1		4	1015692	INSULATOR
		1	1		3	1015690	INSULATOR
		1	1		2	1015691	INSULATOR
		1	1		1	1015689	HEATSINK
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007871		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFILD
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - XXX ±.005 + -
- - XX ±.02 - -
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orgel DATE 14 AUG 64
CHECKED A. Udovich 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

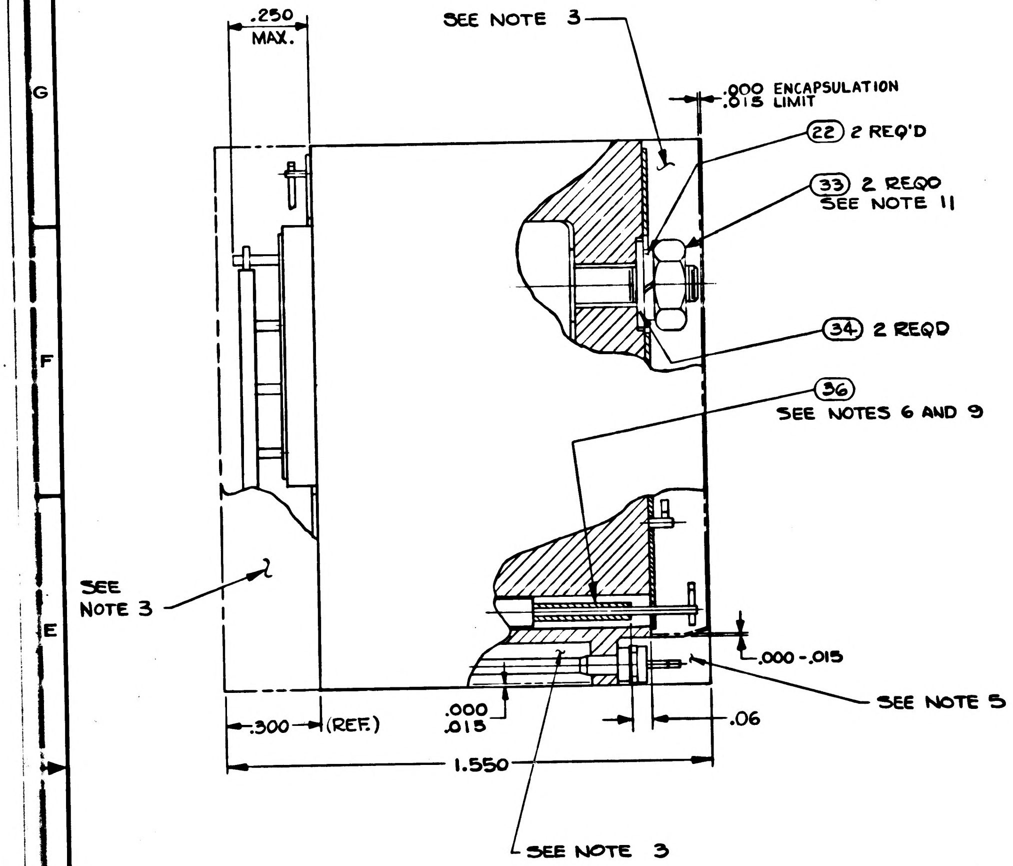
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

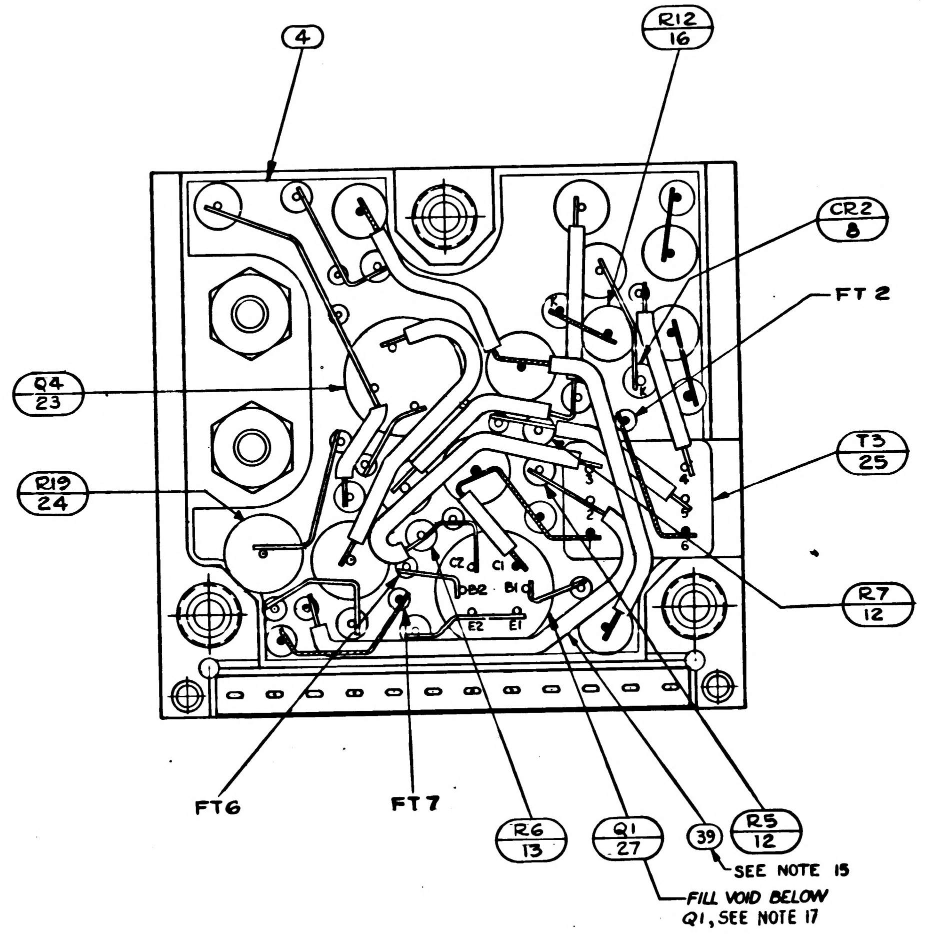
GIMBAL COARSE ALIGN
AMPLIFIER MODULE ASSY

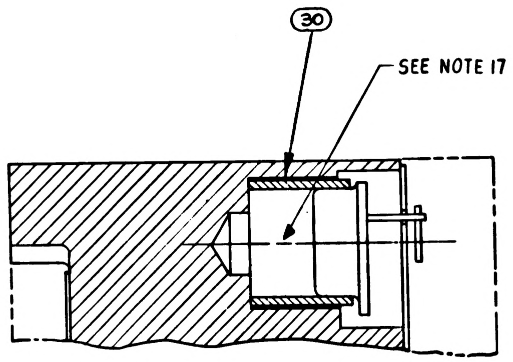
CODE IDENT NO. 80230
SIZE E
1007541
SCALE 3:1
SHEET 1 OF 2

1007541F

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17331		8-MAR 65	GM
B		REVISED PER TDRR 19403		2 JUN 65	
C		REVISED PER TDRR 19429		3 JUN 65	
D		REVISION STATUS CHG PER TDRR 950		9 JUN 65	
E		REVISION STATUS CHANGE		19 JUN 65	
F		REVISED PER TDRR 22949		2 OCT 65	


.250 MAX.
SEE NOTE 3
.000 ENCAPSULATION .015 LIMIT
22 2 REQ'D
33 2 REQD SEE NOTE 11
34 2 REQD
36 SEE NOTES 6 AND 9
SEE NOTE 3
.000-.015
SEE NOTE 5
.000 .015
.06
.300 (REF.)
1.550
SEE NOTE 3


4
R12 16
CR2 8
FT 2
Q4 23
T3 25
R19 24
R7 12
C2 C1
B2 B1
E2 E1
FT6
FT7
R6 13
Q1 27
39
R5 12
SEE NOTE 15
FILL VOID BELOW Q1, SEE NOTE 17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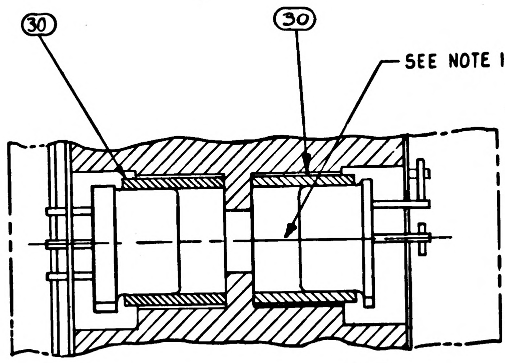
SEE NOTE 17

PARTIAL SECTION A-A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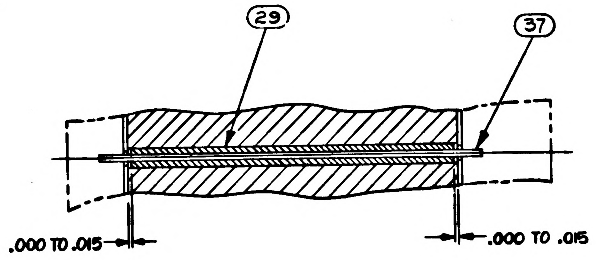
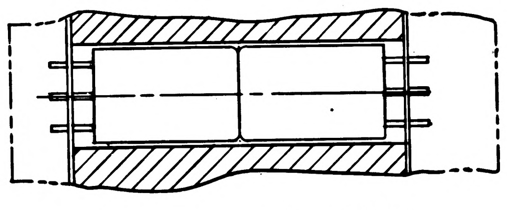
SEE NOTE 17

PARTIAL SECTION B-B


29
37
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C

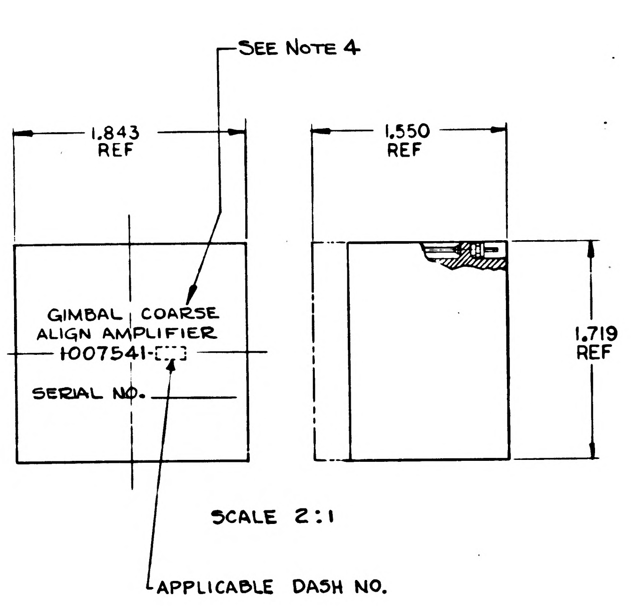


PARTIAL SECTION D-D

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ±	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN Orzel 14 Aug 64 DATE CHECKED A. Udovich 27 AUG 64 APPROVAL APPROVAL	GIMBAL COARSE ALIGN AMPLIFIER MODULE ASSY
MATERIAL	NASA APPROVAL W. J. 10-20-64	CODE IDENT NO. 80230 SIZE E 1007541
CONTRACT NAS 9-497	MIT APPROVAL 10/20/64	SCALE 5:1 SHEET 2 OF 2

1007541 F

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
A		REVISED ~~PER~~ TDRR 17381		MAR 65	GM EF
B		REVISED PER TDRR 19403		[illegible]	[illegible] F
C		REVISED PER TDRR 19429		3 JUN	[illegible] F
D		REVISED PER TDRR 19507		[illegible]	[illegible] F
E		REVISED PER TDRR 20143		JUN 8	[illegible]
F		REVISED PER TDRR 22949		[illegible]	[illegible]
G		REVISED PER TDRR 23889		[illegible]	[illegible]



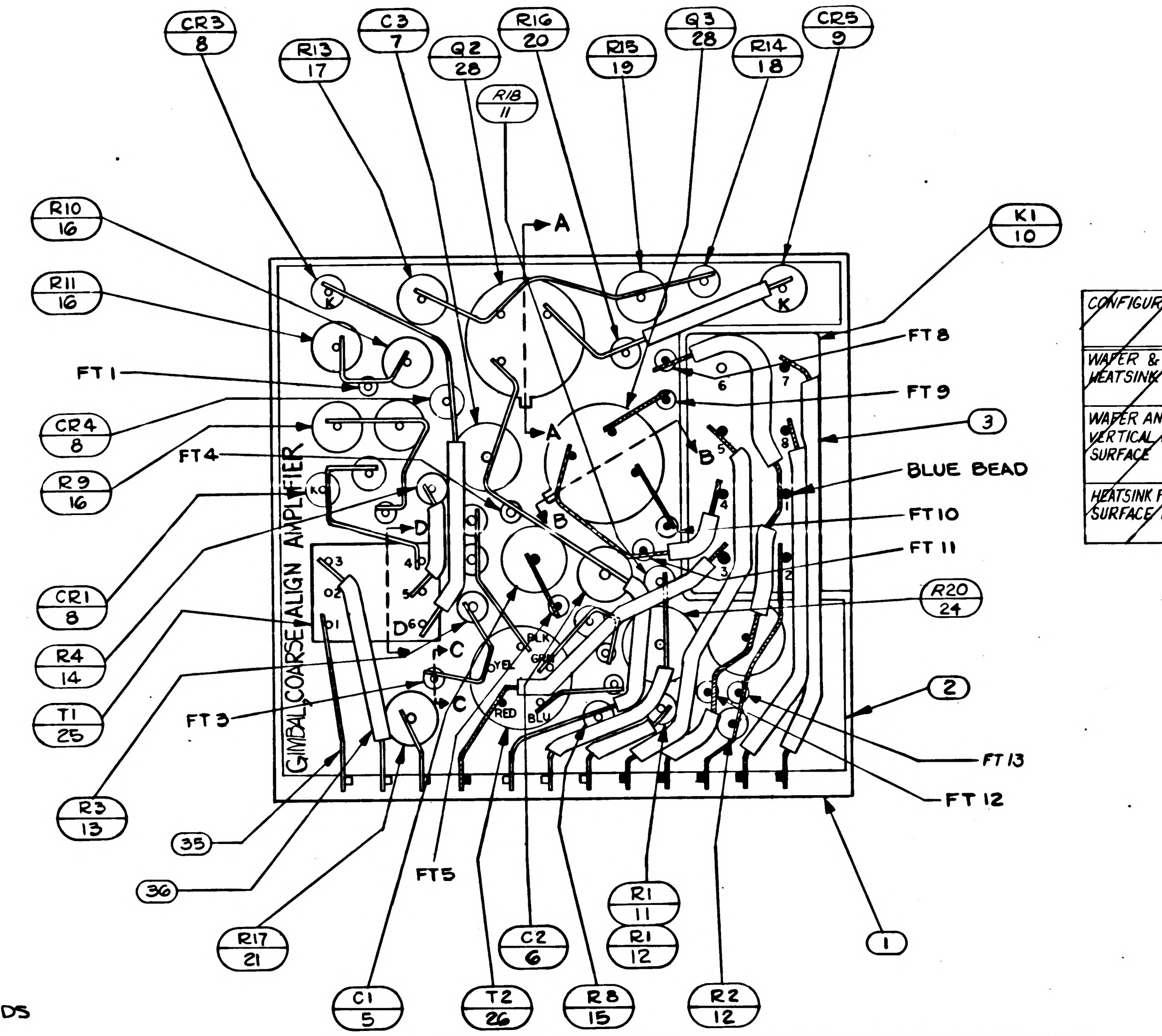
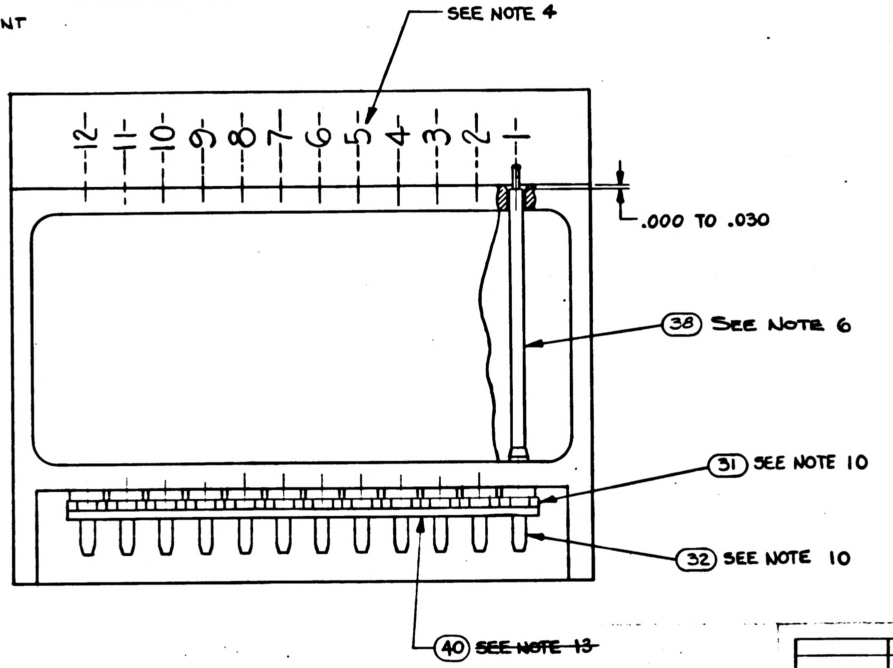


TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTER SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
4. MARK PIN NUMBERS $^{.100}_{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $^{.140}_{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. AREA TO BE FREE OF ENCAPSULATING COMPOUND
6. USE AS REQUIRED
7. ON ITEMS ②, ③ AND ④:
   "K" INDICATES CATHODE SIDE OF DIODE
   FT ( ) INDICATES FEED THRU
   "C" INDICATES COLLECTOR LEAD OF TRANSISTOR
   B " " BASE " "
   E " " EMITTER " "
   C( ) " " COLLECTOR " " MULTI-STAGE TRANSISTOR
   B( ) " " BASE " "
   E( ) " " EMITTER " "
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. TYPICAL SLEEVING FOR CR1 THRU CR4, R1 THRU R8, R14, R16 AND R18
10. MUST MEET REQUIREMENTS OF ND1002136
11. TORQUE TO 4 ±1 IN-LB FOR ASSY OF ITEM 10
12. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
13. ~~BOND ITEM (40) TO ITEM (31) PER ND 1002237.~~
14. COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009 METHOD J AND CENTRALIZED.
15. USE MIL-1-631 TYPE F, FORM U, GRADE C, CLASS I, CATAGORY I, ONE PLACE ONLY. BOND IN PLACE PER ND1002004, TYPE I
16. PROCURE PER PS 1007041.
17. FILL ~~PER~~ ND 1002117
18. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
19. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
20. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
21. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON & ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.



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		X			REF	1009524	SCHEMATIC
		AR	AR		41	1010848-2	WIRE-ELECTRICAL, NICKEL
		1	1		40	1008540-12	GASKET, CONNECTOR MINIATURE
		AR	AR		39	MIL-1-631	INSULATION, SLEEVING 22 GA
		AR	AR		38	1006776-20	INSULATION SLEEVING
		~~AR~~	~~AR~~		~~37~~	~~1006757-8~~	~~WIRE, ELEC.~~
		AR	AR		36	1006776-21	INSULATION SLEEVING
		AR	AR		35	1006757-1	WIRE, ELEC.
		2	2		34	1008070-5	WASHER-FLAT
		2	2		33	MS20341-4A	NUT-HEX
		12	12		32	1006782-5	CONTACT, WRAPOST MALE MINAT.
		12	12		31	1006775	INSULATOR, WRAPOST MALE MINAT
		3	3		30	1008025-2	INSULATOR, BUSHING
		~~AR~~	~~AR~~		~~29~~	~~1006776-22~~	~~INSULATION SLEEVING~~
		2	2		28	1010270	TRANSISTOR
		1	1		27	1010252-1	TRANSISTOR
		1	1		26	1010326	TRANSFORMER
		2	2		25	1010329-1	TRANSFORMER
		2	2		24	1010278-71	RESISTOR, FIXED
		1	1		23	1010345-1	TRANSISTOR
		2	2		22	MS35338-78	WASHER, LOCK
		1	1		21	1010364-543	RESISTOR, FIXED
		1	1		20	1006750-56	RESISTOR
		1	1		19	1010364-765	RESISTOR, FIXED
		1	1		18	1010369-105	RESISTOR, FIXED
		1	1		17	1010364-579	RESISTOR, FIXED
		4	4		16	1010364-443	RESISTOR, FIXED
		1	1		15	1006750-43	RESISTOR
		1	1		14	1006750-48	RESISTOR
		2	2		13	1010369-97	RESISTOR, FIXED
		4	3		12	1006750-73	RESISTOR
		1	2		11	1006750-80	RESISTOR
		1	1		10	1010353-1	RELAY, ELECTROMAGNETIC,
		1	1		9	1010372-22	DIODE, SEMICONDUCTOR DEVICE
		4	4		8	1010392-1	DIODE, SEMICONDUCTOR DEVICE
		1	1		7	1010279-232	CAPACITOR, FIXED
		1	1		6	1010279-228	CAPACITOR, FIXED
		1	1		5	1010264-15	CAPACITOR, FIXED
		1	1		4	1015692	INSULATOR
		1	1		3	1015690	INSULATOR
		1	1		2	1015691	INSULATOR
		1	1		1	1015689	HEATSINK

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + - DECIMALS XXX ±.005 ANGLES + -
XX ±.02
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

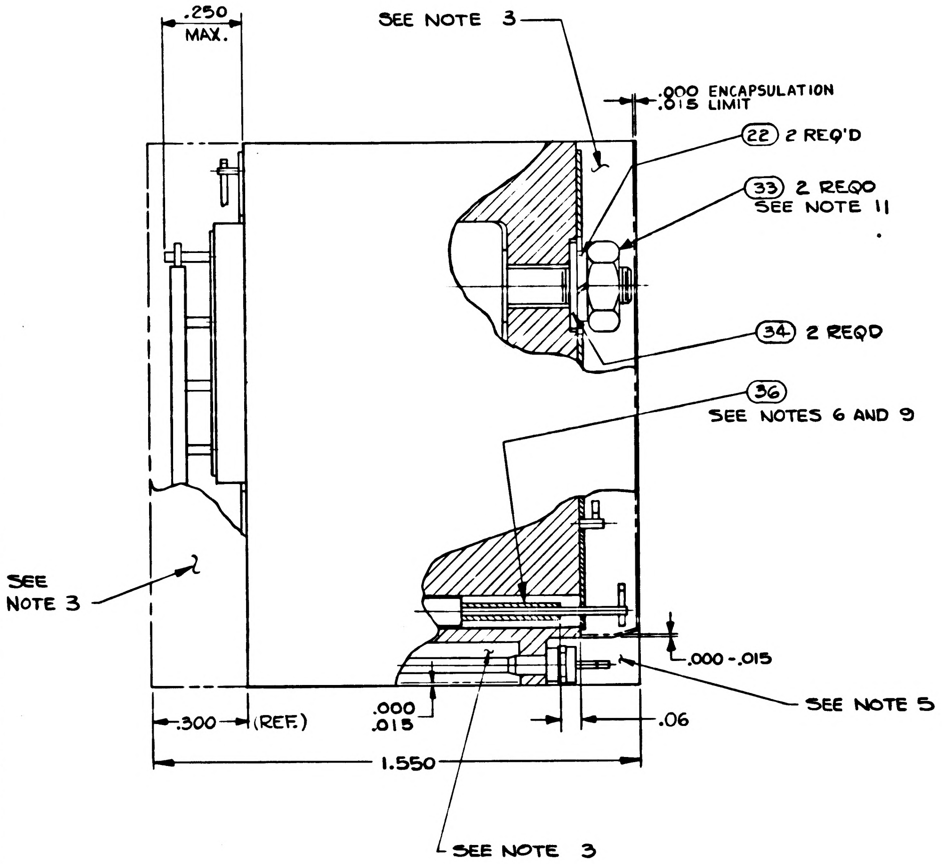
MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orzel DATE 14 AUG 64
CHECKED A. Udovich 27 AUG 64
APPROVAL [illegible]
APPROVAL [illegible] 10/13/64
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

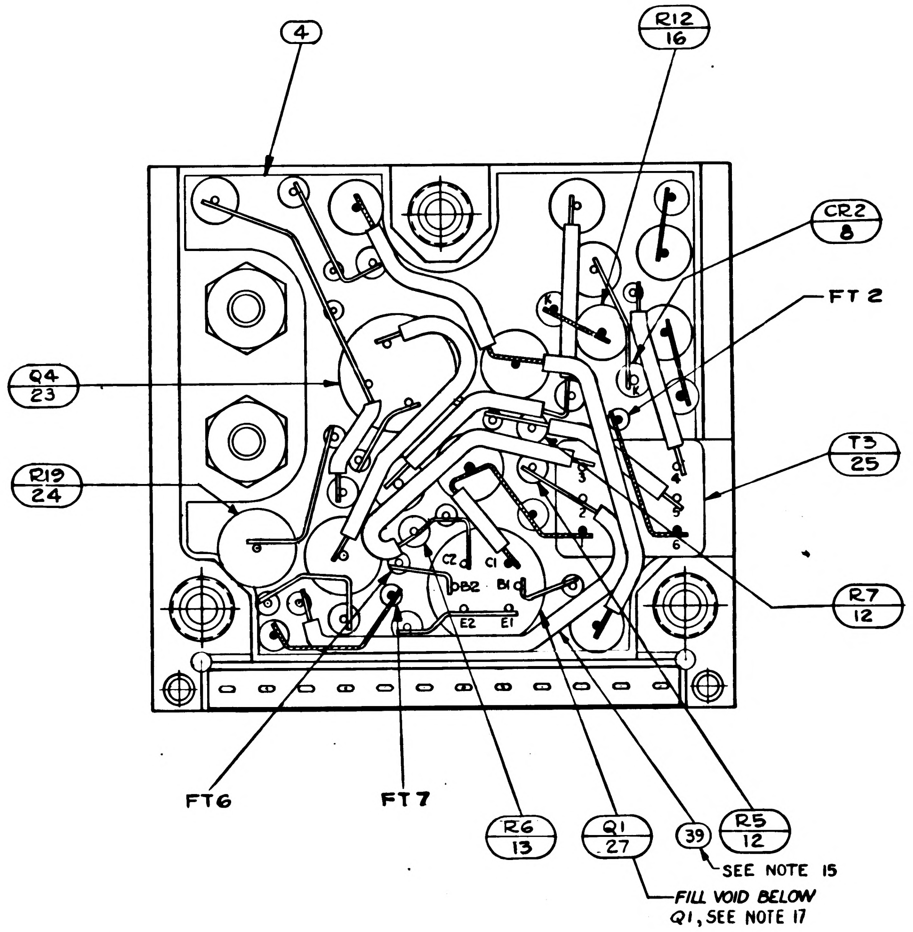
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

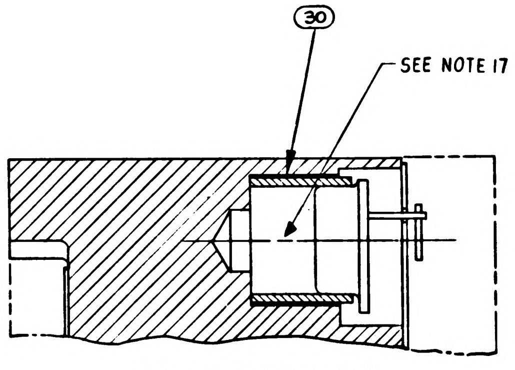
GIMBAL COARSE ALIGN AMPLIFIER MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007541
SCALE 3:1
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17331		2-MAR 65	GM
B		REVISED PER TDRR 19403		2 JUN 65	
C		REVISED PER TDRR 19429		3 JUN 65	
D		REVISION STATUS CHG PER TDRR 950		7 JUN 65	
E		REVISION STATUS CHANGE		19 JUN 65	
F		REVISED PER TDRR 22949		12 OCT 65	
G		REVISED PER TDRR 23888		[illegible] 65	


.250
MAX.
SEE NOTE 3
.000 ENCAPSULATION
.015 LIMIT
22 2 REQ'D
33 2 REQD
SEE NOTE 11
34 2 REQD
36
SEE NOTES 6 AND 9
SEE NOTE 3
.000-.015
SEE NOTE 5
.000
.015
.06
.300
(REF.)
1.550
SEE NOTE 3


4
R12
16
CR2
8
FT 2
Q4
23
R19
24
T3
25
R7
12
C2
C1
B2
B1
E2
E1
FT6
FT7
R6
13
Q1
27
39
R5
12
SEE NOTE 15
FILL VOID BELOW
Q1, SEE NOTE 17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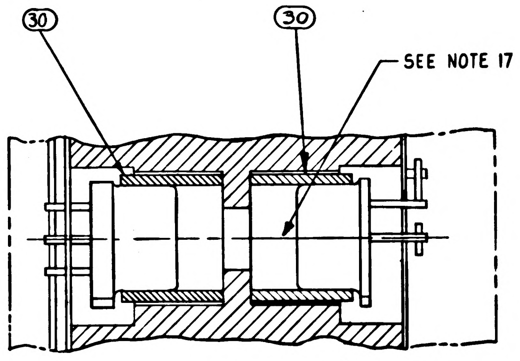
SEE NOTE 17

PARTIAL SECTION A-A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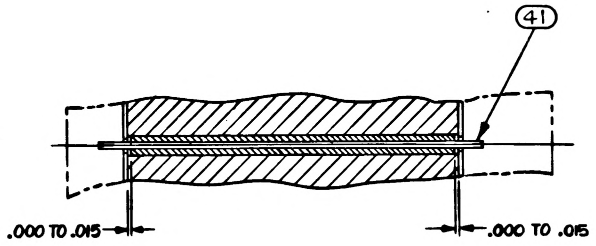
SEE NOTE 17

PARTIAL SECTION B-B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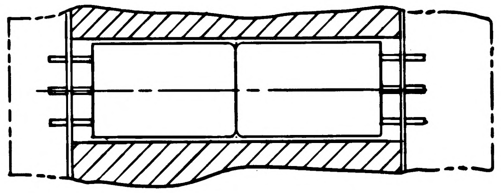
.000 TO .015
.000 TO .015

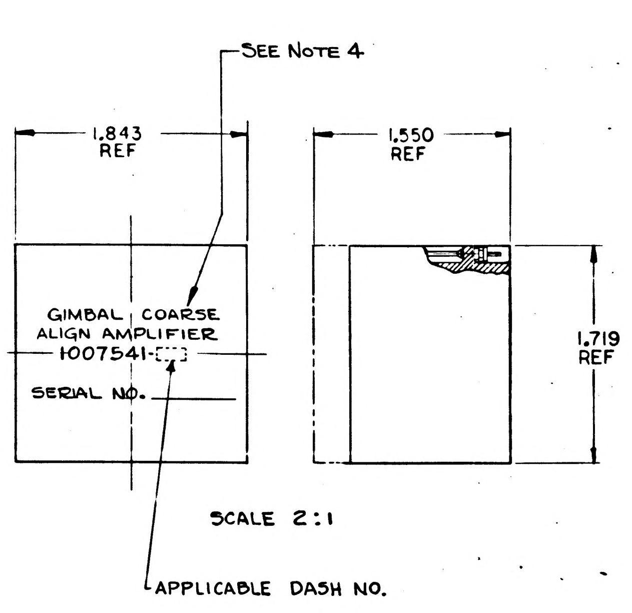
PARTIAL SECTION C-C



PARTIAL SECTION D-D

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ±	M I T INSTRUMENTATION LAB CAMBRIDGE, MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN Orzel DATE 14 Aug 64 CHECKED A. Udovich 27 AUG 64 APPROVAL APPROVAL	GIMBAL COARSE ALIGN AMPLIFIER MODULE ASSY
MATERIAL	NASA APPROVAL W. J. 10-20-64	CODE IDENT NO. 80230 SIZE E 1007541
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 5:1 SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17331		12-MAR 65	GM
B		REVISED PER TDRR 19403		2 JUN 65	
C		REVISED PER TDRR 19429		3 JUN 65	
D		REVISED PER TDRR 19507		7 JUN 65	JW
E		REVISED PER TDRR 20143		9 JUN 65	RH
F		REVISED PER TDRR 22949		12 OCT 65	
G		REVISED PER TDRR 23888		16 NOV 65	JWP
H		REVISED PER TDRR 26397		23 FEB 66	RLP



SCALE 2:1

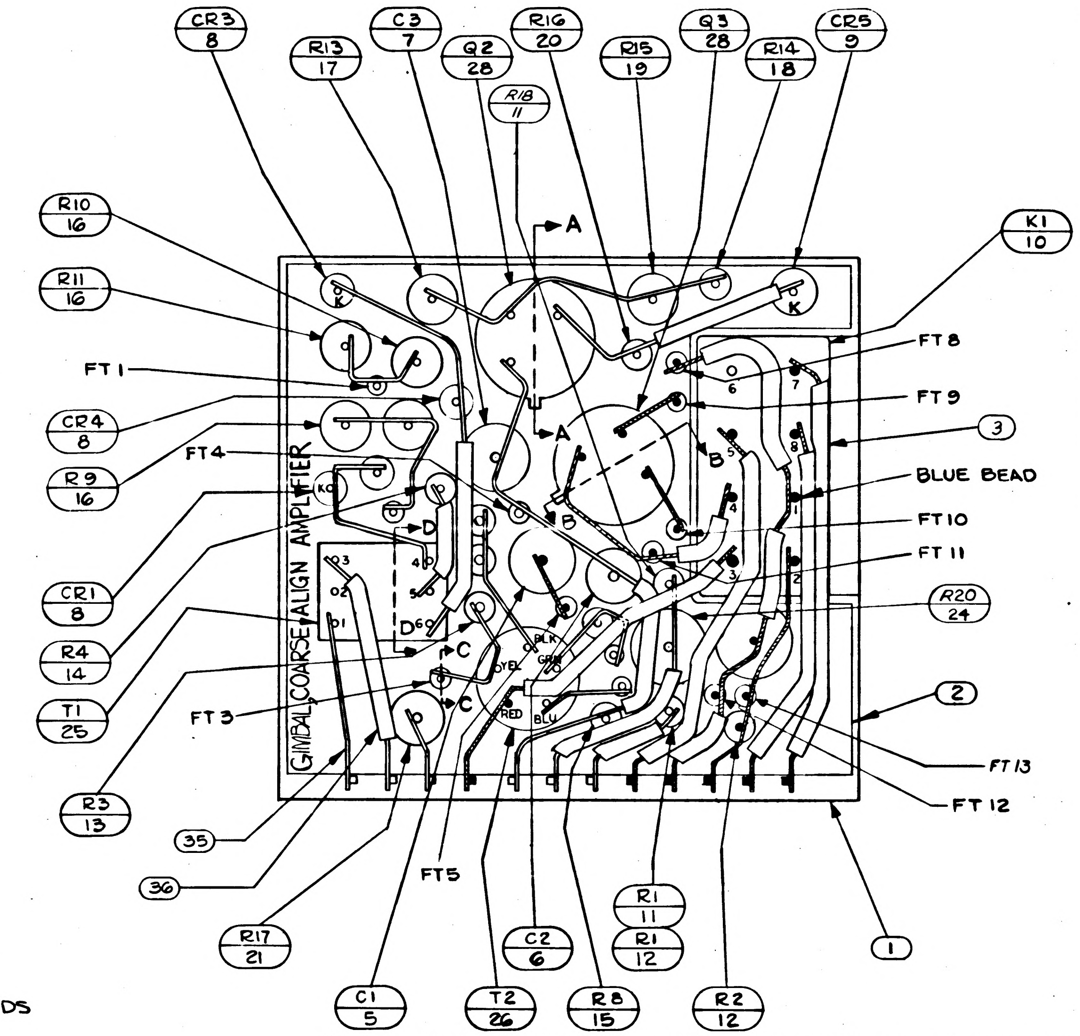


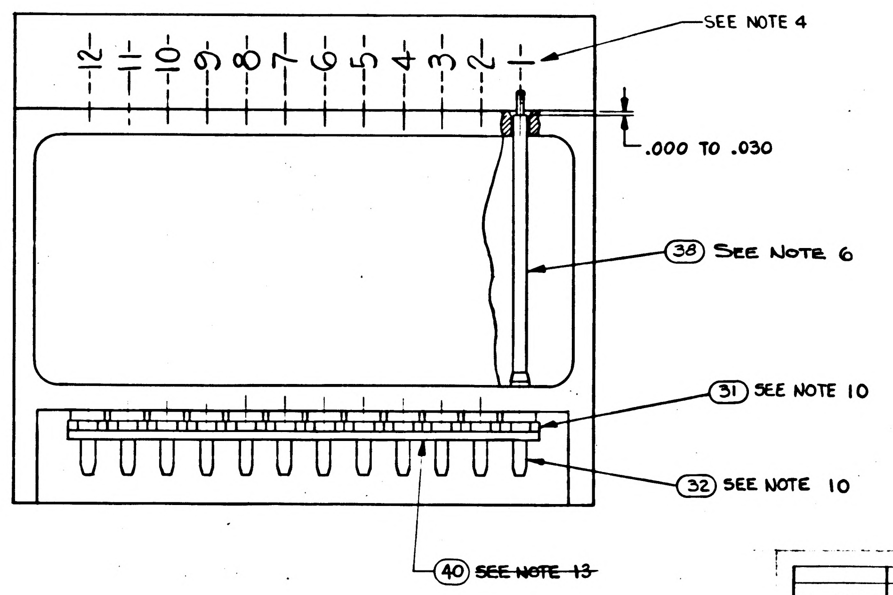
TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE/80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03±.03 OF EXTERNAL EDGE

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
4. MARK PIN NUMBERS $^{.100}_{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $^{.140}_{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. AREA TO BE FREE OF ENCAPSULATING COMPOUND
6. USE AS REQUIRED
7. ON ITEMS ②, ③ AND ④:

"K" INDICATES CATHODE SIDE OF DIODE
FT ( ) INDICATES FEED THRU
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR
B " " BASE " "
E " " EMITTER " "
C( ) " " COLLECTOR " " MULTI-STAGE TRANSISTOR
B( ) " " BASE " "
E( ) " " EMITTER " "

8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. TYPICAL SLEEVING FOR CR1 THRU CR4, R1 THRU R8, R14, R16 AND R18
10. MUST MEET REQUIREMENTS OF ND1002136
11. TORQUE TO 4±1 IN-LB FOR ASSY OF ITEM 10
12. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
13. ~~BOND ITEM (40) TO ITEM (31) PER ND1002237.~~
14. COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009 METHOD J AND CENTRALIZED.
15. USE MIL-I-631 TYPE F, FORM U, GRADE C, CLASS I, CATAGORY I, ONE PLACE ONLY. BOND IN PLACE PER ND1002004, TYPE I
16. PROCURE PER PS 1007041.
17. FILL PER ND 1002117
18. ~~BOND A .25 MIN WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
19. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
20. EXCEPT FOR MODULE MOUNTING SURFACE. PAINT ALL SURFACES PER ND1002279 USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
21. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON & ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
22. MOISTUREPROOF PER ND1002292 AS REQUIRED BY ITEM NO. (42) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.



	031	021	011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	—	—	☒		REF	1010023	SCHEMATIC
	☒	☒	—		REF	1009524	SCHEMATIC
	AR	—	—		42	SEE NOTE 22	MOISTUREPROOFING
	AR	AR	AR		41	1010848-2	WIRE-ELECTRICAL NICKEL
	1	1	1		40	1008540-12	GASKET, CONNECTOR MINIATURE
	AR	AR	AR		39	MIL-I-631	INSULATION, SLEEVING 22 GA
	AR	AR	AR		38	1006776-20	INSULATION SLEEVING
		~~AR~~	~~AR~~		~~37~~	~~1006757-8~~	~~WIRE, ELEC.~~
	AR	AR	AR		36	1006776-21	INSULATION SLEEVING
	AR	AR	AR		35	1006757-1	WIRE, ELEC.
	2	2	2		34	1008070-5	WASHER- FLAT
	2	2	2		33	MS20341-4A	NUT-HEX
	12	12	12		32	1006782-5	CONTACT, WRAPOST MALE MINAT.
	12	12	12		31	1006775	INSULATOR, WRAPOST MALE MINAT
	3	3	3		30	1008025-2	INSULATOR, BUSHING
		~~AR~~	~~AR~~		~~29~~	~~1006776-22~~	~~INSULATION SLEEVING~~
	2	2	2		28	1010270	TRANSISTOR
	1	1	1		27	1010252-1	TRANSISTOR
	1	1	1		26	1010326	TRANSFORMER
	2	2	2		25	1010329-1	TRANSFORMER
	2	2	2		24	1010278-71	RESISTOR, FIXED
	1	1	1		23	1010345-1	TRANSISTOR
	2	2	2		22	MS35338-78	WASHER, LOCK
	1	1	1		21	1010364-543	RESISTOR, FIXED
	1	1	1		20	1006750-56	RESISTOR
	1	1	1		19	1010364-765	RESISTOR, FIXED
	1	1	1		18	1010569-105	RESISTOR, FIXED
	1	1	1		17	1010364-579	RESISTOR, FIXED
	4	4	4		16	1010364-443	RESISTOR, FIXED
	1	1	1		15	1006750-43	RESISTOR
	1	1	1		14	1006750-48	RESISTOR
	2	2	2		13	1010369-97	RESISTOR, FIXED
	4	4	3		12	1006750-73	RESISTOR
	1	1	2		11	1006750-80	RESISTOR
	1	1	1		10	1010353-1	RELAY, ELECTROMAGNETIC,
	1	1	1		9	1010372-22	DIODE, SEMICONDUCTOR DEVICE
	4	4	4		8	1010392-1	DIODE, SEMICONDUCTOR DEVICE
	1	1	1		7	1010279-232	CAPACITOR, FIXED
	1	1	1		6	1010279-228	CAPACITOR, FIXED
	1	1	1		5	1010264-15	CAPACITOR, FIXED
	1	1	1		4	1015692	INSULATOR
	1	1	1		3	1015690	INSULATOR
	1	1	1		2	1015691	INSULATOR
	1	1	1		1	1015689	HEATSINK

QUANTITY REQUIRED
LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + -
DECIMALS XXX ±.005
XX ±.02
ANGLES + -
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orgel DATE 14 AUG 64
CHECKED A. Udovich 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

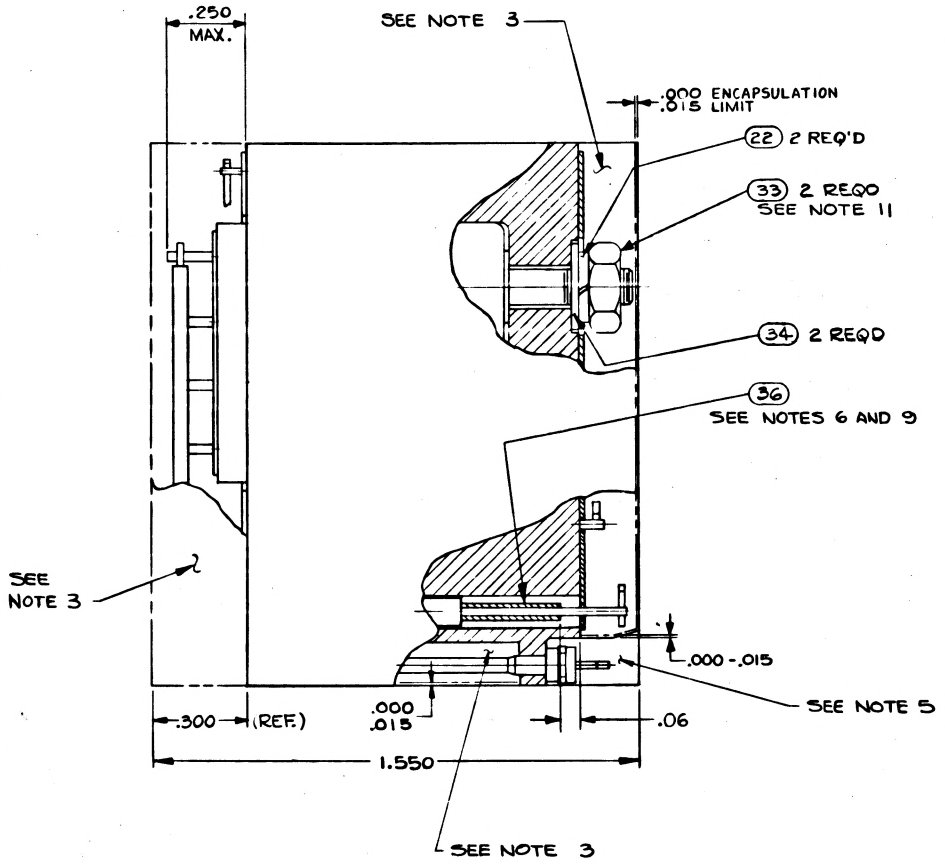
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL COARSE ALIGN
AMPLIFIER MODULE ASSY

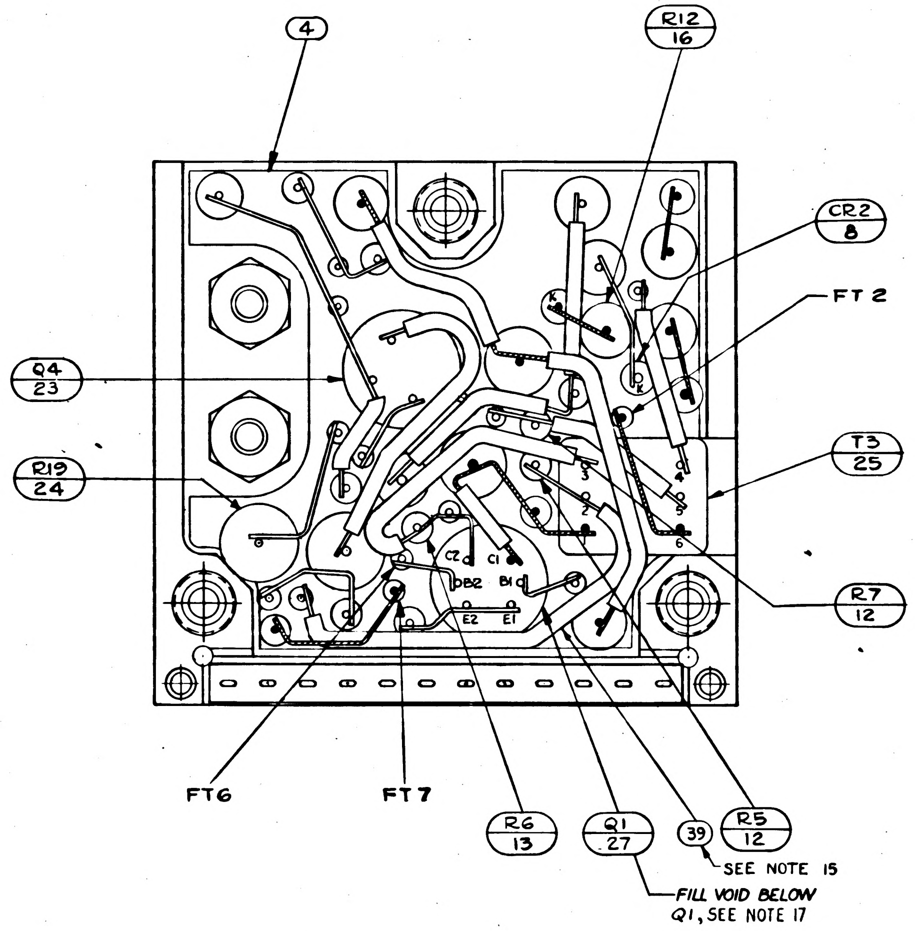
CODE IDENT NO. 80230
SIZE E
1007541
SCALE 5:1
SHEET 1 OF 2

1007541 H

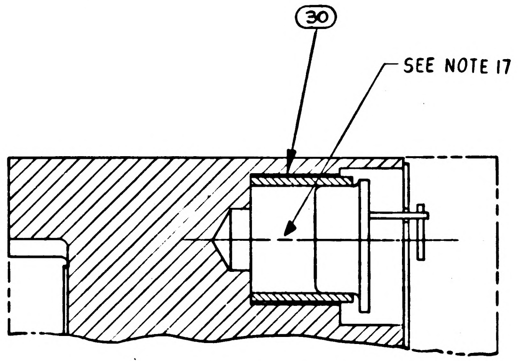
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17331		12-MAR-65	GM / EF
B		REVISED PER TDRR 19403		2 JUN 65	JSM / EF
C		REVISED PER TDRR 19429		3 JUN 65	EF
D		REVISION STATUS CHG PER TDRR 19507		7 JUN 65	EF
I		REVISION STATUS CHANGE		17 JUN 65	
F		REVISED PER TDRR 22949		12 OCT 65	LK / AU
G		REVISED PER TDRR 23888		16 NOV 65	JWP
H		REVISION STATUS CHANGED		23 FEB 66	RP



.250 MAX.
SEE NOTE 3
.000 ENCAPSULATION .015 LIMIT
22 2 REQ'D
33 2 REQD SEE NOTE 11
34 2 REQD
36 SEE NOTES 6 AND 9
SEE NOTE 3
.000-.015
SEE NOTE 5
.300
(REF.)
.000 .015
.06
1.550
SEE NOTE 3

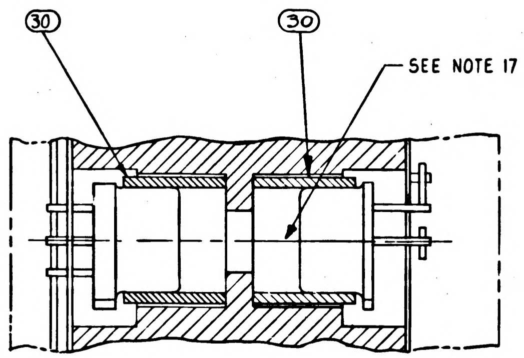


4
R12 16
CR2 8
FT2
Q4 23
R19 24
T3 25
R7 12
C2
C1
B2
B1
E2
E1
FT6
FT7
R6 13
Q1 27
39
R5 12
SEE NOTE 15
FILL VOID BELOW Q1, SEE NOTE 17



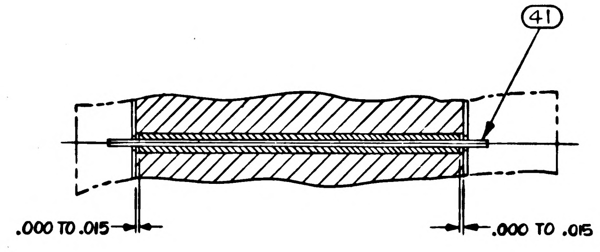
30
SEE NOTE 17

PARTIAL SECTION A-A



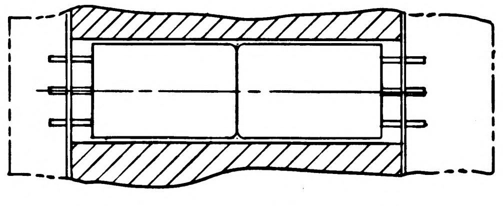
30
30
SEE NOTE 17

PARTIAL SECTION B-B



41
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C



PARTIAL SECTION D-D

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orgel DATE 14 Aug 64
CHECKED A. Udovich 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL 10-20-64
MIT APPROVAL

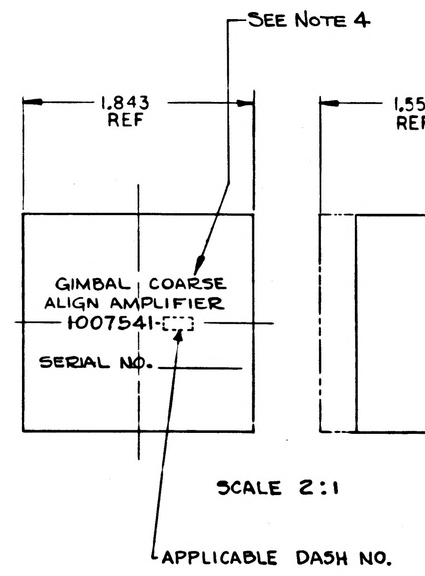
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL COARSE ALIGN
AMPLIFIER MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007541
SCALE 5:1
SHEET 2 OF 2

1007541 H

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17331		12-MAR 65	GM
B		REVISED PER TDRR 19403		2 J	
C		REVISED PER TDRR 19429		3 JUN	
D		REVISED PER TDRR 19507		JUN 65	
E		REVISED PER TDRR 20143		9 JUL 65	
F		REVISED PER TDRR 22949		OCT 65	
G		REVISED PER TDRR 23883			
H		REVISED PER TDRR 26397		23 FEB 66	
J		REVISED PER TDRR 26375		28 FEB 66	



SCALE 2:1

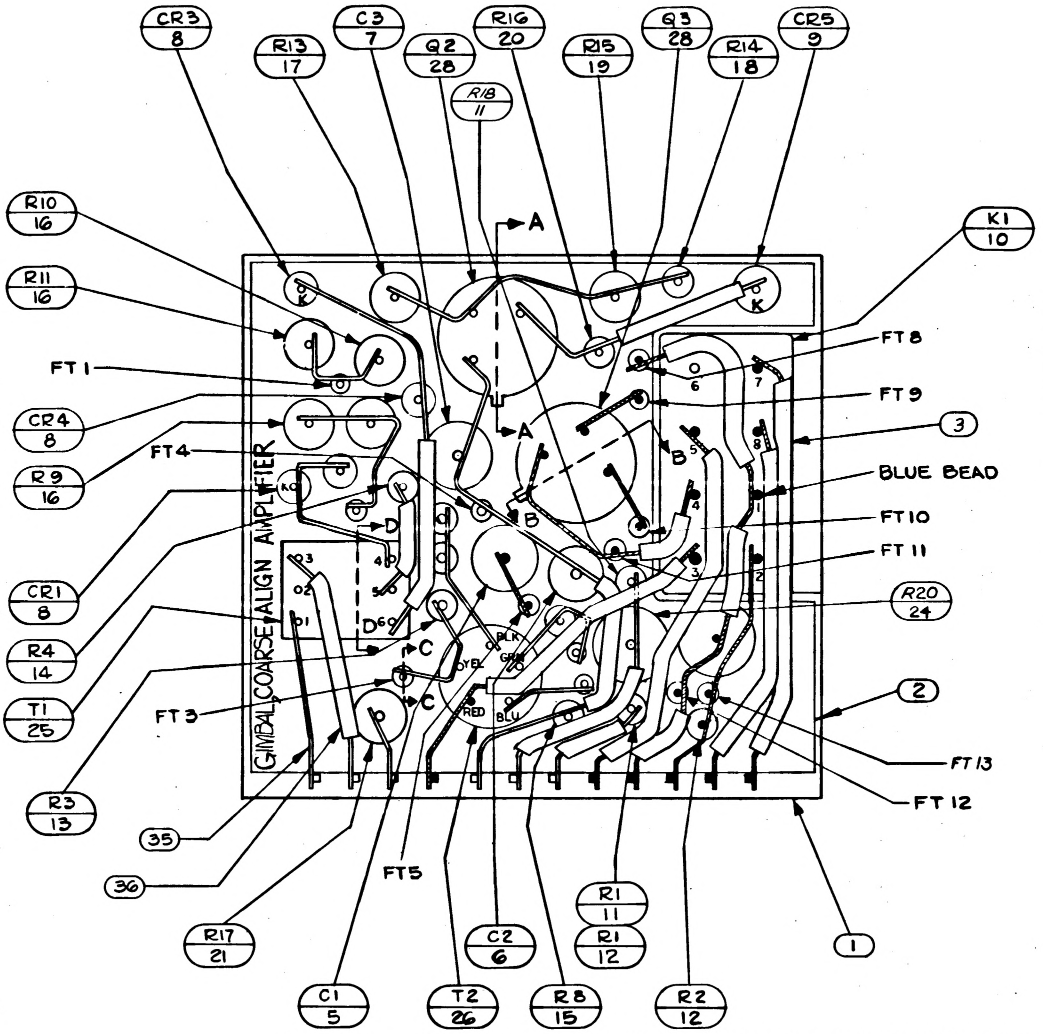
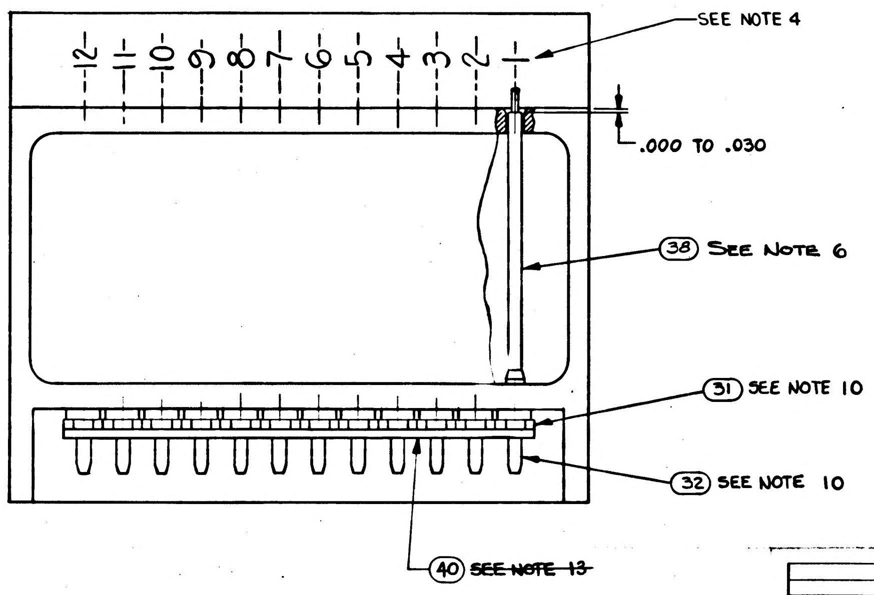


TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03±.03 OF EXTERNAL EDGE

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
4. MARK PIN NUMBERS $\substack{.100\\.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\substack{.140\\.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. AREA TO BE FREE OF ENCAPSULATING COMPOUND
6. USE AS REQUIRED
7. ON ITEMS ②, ③ AND ④:
   "K" INDICATES CATHODE SIDE OF DIODE
   FT ( ) INDICATES FEED THRU
   "C" INDICATES COLLECTOR LEAD OF TRANSISTOR
   B " " BASE " "
   E " " EMITTER " "
   C( ) " " COLLECTOR " " MULTI-STAGE TRANSISTOR
   B( ) " " BASE " "
   E( ) " " EMITTER " "
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. TYPICAL SLEEVING FOR CR1 THRU CR4, R1 THRU R8, R14, R16 AND R18
10. MUST MEET REQUIREMENTS OF ND1002136
11. TORQUE TO 4±1 IN-LB FOR ASSY OF ITEM 10
12. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
13. ~~BOND ITEM (40) TO ITEM (31) PER ND1002237.~~
14. COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009 METHOD J AND CENTRALIZED.
15. USE MIL-I-631 TYPE F, FORM U, GRADE C, CLASS I, CATAGORY I, ONE PLACE ONLY. BOND IN PLACE PER ND1002004, TYPE I
16. PROCURE PER PS 1007041.
17. FILL PER ND 1002117
18. ~~BOND A .25 MIN WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
19. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
20. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
21. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON & ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
22. MOISTUREPROOF PER ND1002292 AS REQUIRED BY ITEM NO. (42) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.



041	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
X	—	—	X		REF	1010023	SCHEMATIC
—	X	X	—		REF	1009524	SCHEMATIC
AR	AR	—	—		42	SEE NOTE 22	MOISTUREPROOFING
AR	AR	AR	AR		41	1010848-2	WIRE-ELECTRICAL NICKEL
1	1	1	1		40	1008540-12	GASKET, CONNECTOR MINIATURE
AR	AR	AR	AR		39	MIL-I-631	INSULATION, SLEEVING 22 GA
AR	AR	AR	AR		38	1006776-20	INSULATION SLEEVING
		~~AR~~	~~AR~~		~~37~~	~~1006757-8~~	~~WIRE, ELEC.~~
AR	AR	AR	AR		36	1006776-21	INSULATION SLEEVING
AR	AR	AR	AR		35	1006757-1	WIRE, ELEC.
2	2	2	2		34	1008070-5	WASHER- FLAT
2	2	2	2		33	MS20341-4A	NUT-HEX
12	12	12	12		32	1006782-5	CONTACT, WRAPOST MALE MINAT.
12	12	12	12		31	1006775	INSULATOR, WRAPOST MALE MINAT
3	3	3	3		30	1008025-2	INSULATOR, BUSHING
		~~AR~~	~~AR~~		~~29~~	~~1006776-22~~	~~INSULATION SLEEVING~~
2	2	2	2		28	1010270	TRANSISTOR
1	1	1	1		27	1010252-1	TRANSISTOR
1	1	1	1		26	1010326	TRANSFORMER
2	2	2	2		25	1010329-1	TRANSFORMER
2	2	2	2		24	1010278-71	RESISTOR, FIXED
1	1	1	1		23	1010345-1	TRANSISTOR
2	2	2	2		22	MS35338-78	WASHER, LOCK
1	1	1	1		21	1010364-543	RESISTOR, FIXED
1	1	1	1		20	1006750-56	RESISTOR
1	1	1	1		19	1010364-765	RESISTOR, FIXED
1	1	1	1		18	1010369-105	RESISTOR, FIXED
1	1	1	1		17	1010364-579	RESISTOR, FIXED
4	4	4	4		16	1010364-443	RESISTOR, FIXED
1	1	1	1		15	1006750-43	RESISTOR
1	1	1	1		14	1006750-48	RESISTOR
2	2	2	2		13	1010369-97	RESISTOR, FIXED
3	4	4	3		12	1006750-73	RESISTOR
2	1	1	2		11	1006750-80	RESISTOR
1	1	1	1		10	1010353-1	RELAY, ELECTROMAGNETIC,
1	1	1	1		9	1010372-22	DIODE, SEMICONDUCTOR DEVICE
4	4	4	4		8	1010392-1	DIODE, SEMICONDUCTOR DEVICE
1	1	1	1		7	1010279-232	CAPACITOR, FIXED
1	1	1	1		6	1010279-228	CAPACITOR, FIXED
1	1	1	1		5	1010264-15	CAPACITOR, FIXED
1	1	1	1		4	1015692	INSULATOR
1	1	1	1		3	1015690	INSULATOR
1	1	1	1		2	1015691	INSULATOR
1	1	1	1		1	1015689	HEATSINK

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

1007571		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± XXX ±.005 ±
± XX ±.02 ±
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS 9-497

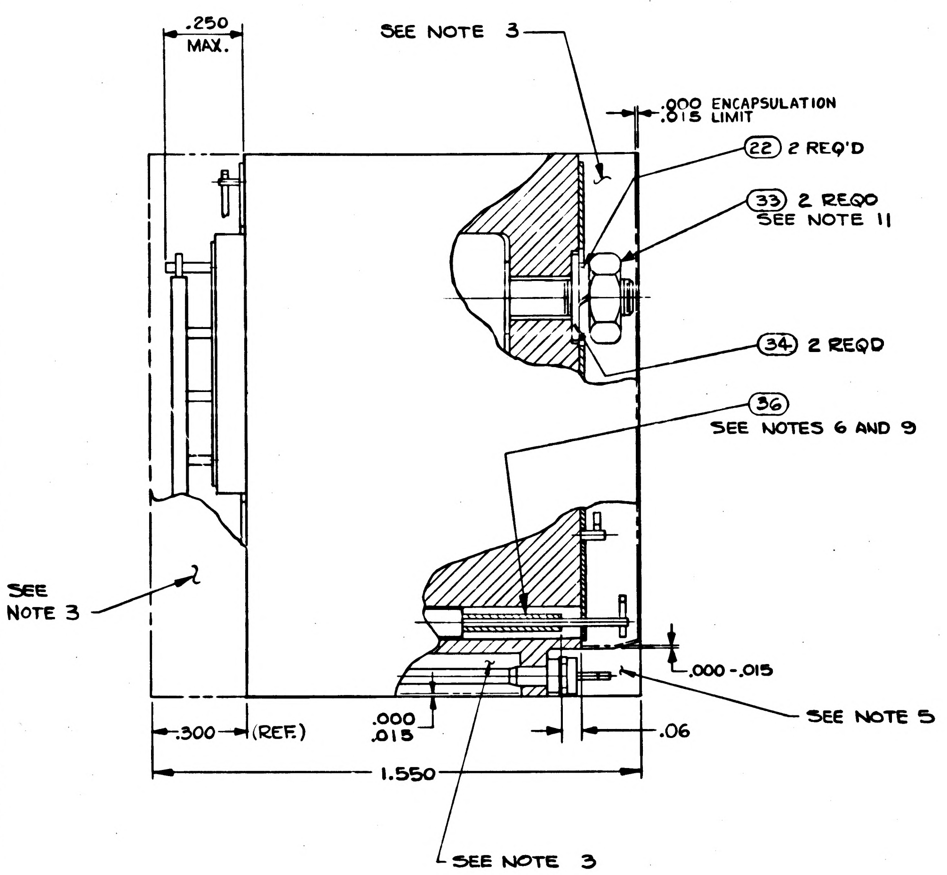
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orgel 14 AUG 64
CHECKED A. Udonick 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

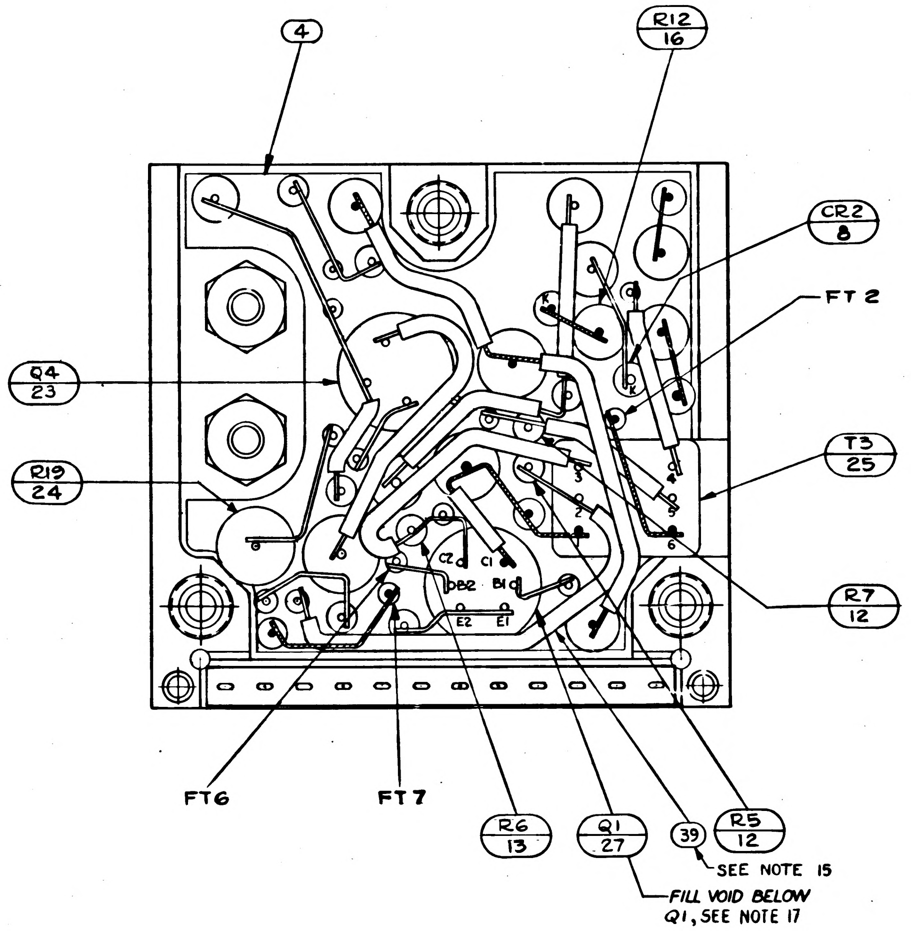
GIMBAL COARSE ALIGN
AMPLIFIER MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007541
SCALE 5:1
SHEET 1 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		~~REVISED PER TDRR 17331~~		12-MAR-65	GM / EF
B		REVISED PER TDRR 19403		2 JUN 65	[illegible]
C		REVISED PER TDRR 19429		3 JUNE	[illegible]
D		REVISION STATUS CHG PER TDRR 950		7 JUL 65	[illegible]
E		REVISION STATUS CHANGE		19 JUN 65	[illegible]
F		REVISED PER TDRR 22949		12 OCT 65	LK
G		REVISED PER TDRR 23888		16 NOV 65	JWP
H		REVISION STATUS CHANGED		23 FEB 66	RP
J		REVISION STATUS CHANGED		28 FEB 66	JMP



.250 MAX.
SEE NOTE 3
.000 ENCAPSULATION
.015 LIMIT
22 2 REQ'D
33 2 REQD
SEE NOTE 11
34 2 REQD
36
SEE NOTES 6 AND 9
SEE NOTE 3
.000-.015
SEE NOTE 5
.300
(REF.)
.000
.015
.06
1.550
SEE NOTE 3



4
R12
16
CR2
8
FT 2
Q4
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T3
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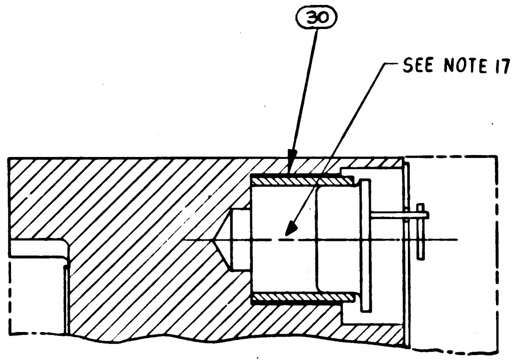
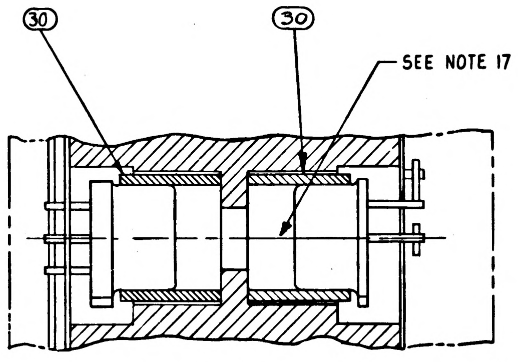
R19
24
R7
12
C2
C1
DB2
B1
E2
E1
FT6
FT7
R6
13
Q1
27
39
R5
12
SEE NOTE 15
FILL VOID BELOW
Q1, SEE NOTE 17



30
SEE NOTE 17

PARTIAL SECTION A-A



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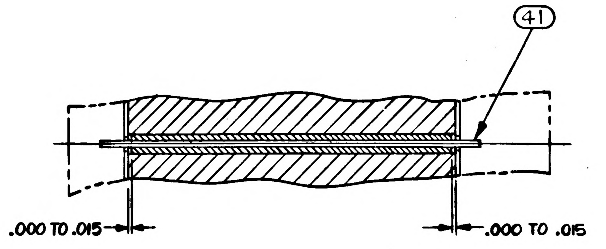
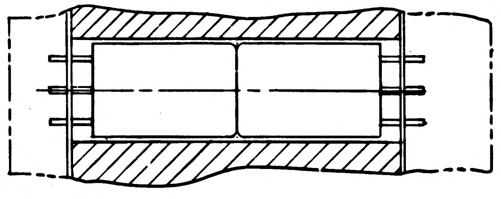
SEE NOTE 17

PARTIAL SECTION B-B



41
.000 TO .015
.000 TO .015

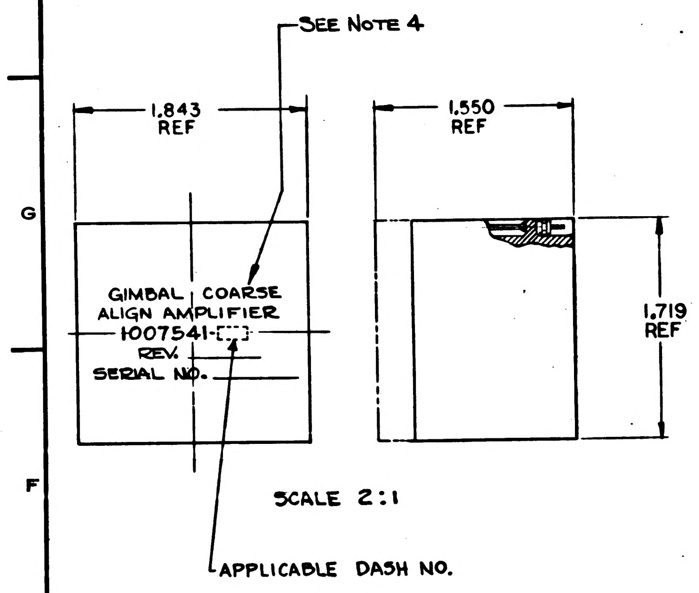
PARTIAL SECTION C-C



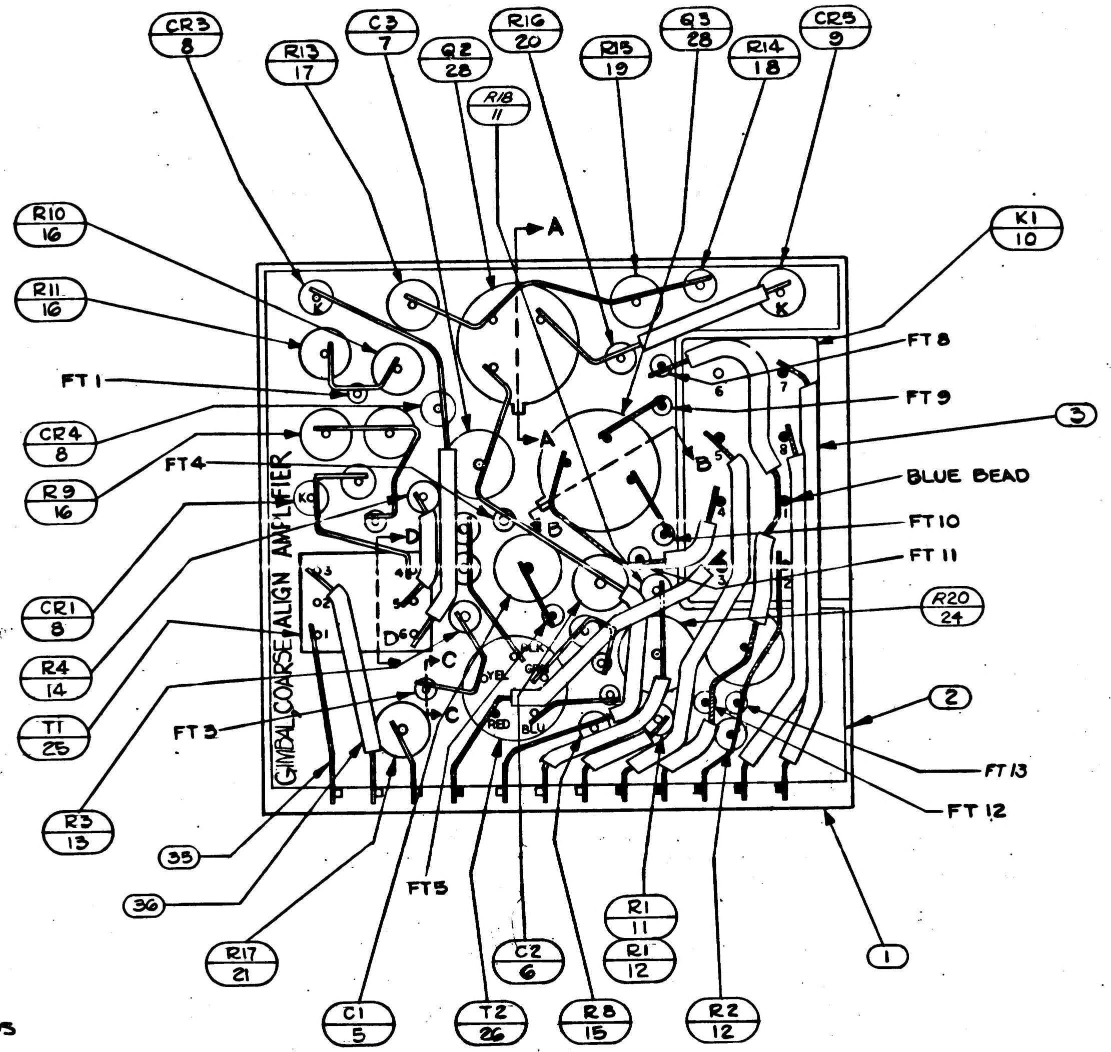
PARTIAL SECTION D-D

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES + - + - + - - - - - - -	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN Ozzel 14 Aug 64 DATE CHECKED A. Udovich 27 AUG 64 APPROVAL [illegible] APPROVAL [illegible]	GIMBAL COARSE ALIGN AMPLIFIER MODULE ASSY
MATERIAL	NASA APPROVAL W. J. [illegible] 10-20-64	CODE IDENT NO. 80230 · SIZE E · 1007541
CONTRACT NAS 9-497	MIT APPROVAL [illegible] 10/20/64	SCALE 5:1 · SHEET 2 OF 2

REVISIONS 13638					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.


SEE NOTE 4
1.843 REF
1.550 REF
1.719 REF
GIMBAL COARSE ALIGN AMPLIFIER
1007541-[ ]
REV.
SERIAL NO.
APPLICABLE DASH NO.

SCALE 2:1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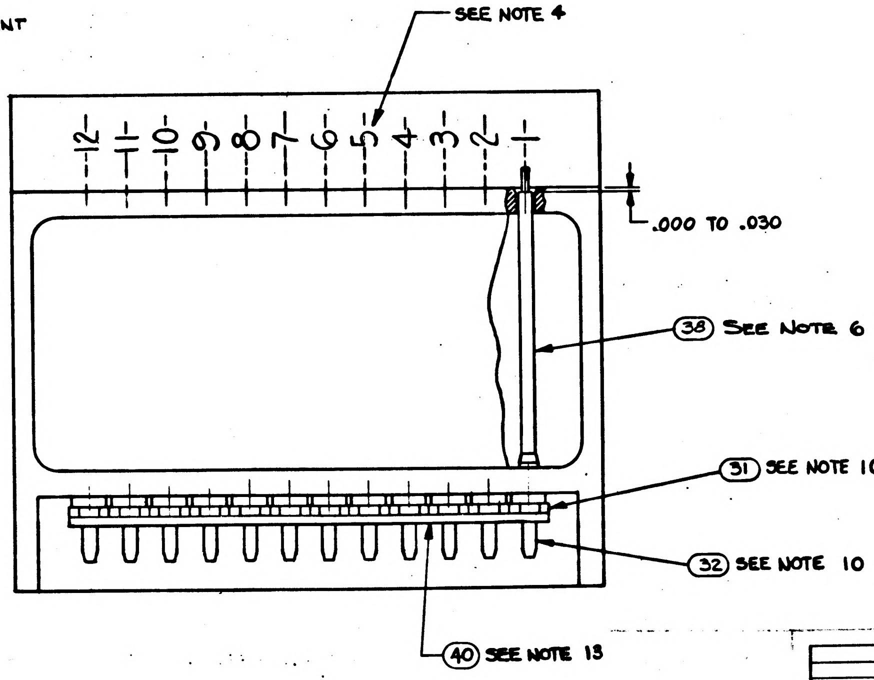
R13 17
C3 7
Q2 28
R18 11
R16 20
R15 19
Q3 28
R14 18
CR5 9
K1 10
R10 16
R11 16
FT 1
CR4 8
FT4
R9 16
CR1 8
R4 14
T1 25
FT 3
R3 13
35
36
R17 21
FT5
C1 5
T2 26
C2 6
R8 15
R1 11
R1 12
R2 12
1
2
3
FT 8
FT 9
BLUE BEAD
FT10
FT 11
R20 24
FT 13
FT 12
A
GIMBAL COARSE ALIGN AMPLIFIER

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
3. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
4. MARK PIN NUMBERS $^{.100}_{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $^{.140}_{.100}$ HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. AREA TO BE FREE OF ENCAPSULATING COMPOUND
6. USE AS REQUIRED
7. ON ITEMS ②, ③ AND ④ :

   "K" INDICATES CATHODE SIDE OF DIODE
   FT ( ) INDICATES FEED THRU
   "C" INDICATES COLLECTOR LEAD OF TRANSISTOR
   B " " BASE " "
   E " " EMITTER " "
   C( ) " " COLLECTOR " " MULTI-STAGE TRANSISTOR
   B( ) " " BASE " "
   E( ) " " EMITTER " "
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. TYPICAL SLEEVING FOR CR1 THRU CR4, R1 THRU R8, R14, R16 AND R18
10. MUST MEET REQUIREMENTS OF ND1002136
11. TORQUE TO 4 ±1 IN-LB FOR ASSY OF ITEM 10
12. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
13. BOND ITEM ㊵ TO ITEM ㉛ PER ND1002237.
14. COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009 METHOD C AND CENTRALIZED
15. USE MIL-I-631 TYPE F, FORM U, GRADE C, CLASS I, CATAGORY I, ONE PLACE ONLY. BOND IN PLACE PER ND1002004, TYPE I
16. PROCURE PER PS 1007041.
17. FILL PER ND 1002117


SEE NOTE 4
12
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.000 TO .030
38 SEE NOTE 6
31 SEE NOTE 10
32 SEE NOTE 10
40 SEE NOTE 13

		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			☒		REF	1010023	SCHEMATIC
		☒			REF	1009524	SCHEMATIC
		1	1		40	1008540-12	GASKET, CONNECTOR MINIATURE
		AR	AR		39	MIL-I-631	INSULATION, SLEEVING 22 GA.
		AR	AR		38	1006776-20	INSULATION SLEEVING
		AR	AR		37	1006257-8	WIRE, ELEC.
		AR	AR		36	1006776-21	INSULATION SLEEVING
		AR	AR		35	1006257-1	WIRE, ELEC.
		2	2		34	1008070-5	WASHER- FLAT
		2	2		33	MS20341-4A	NUT-HEX
		12	12		32	1006782-5	CONTACT, WRAPOST MALE MINIAT.
		12	12		31	1006775	INSULATOR, WRAPOST MALE MINIAT.
		3	3		30	1008025-2	INSULATOR, BUSHING
		AR	AR		29	1006776-22	INSULATION SLEEVING
		2	2		28	1010270	TRANSISTOR
		1	1		27	1010252-1	TRANSISTOR
		1	1		26	1010326	TRANSFORMER
		2	2		25	1010329-1	TRANSFORMER
		2	2		24	1010278-71	RESISTOR, FIXED
		1	1		23	1010345-1	TRANSISTOR
		2	2		22	MS35338-78	WASHER, LOCK
		1	1		21	1010364-543	RESISTOR, FIXED
		1	1		20	1006750-56	RESISTOR
		1	1		19	1010364-765	RESISTOR, FIXED
		1	1		18	1010569-105	RESISTOR, FIXED
		1	1		17	1010364-579	RESISTOR, FIXED
		4	4		16	1010364-443	RESISTOR, FIXED
		1	1		15	1006750-43	RESISTOR
		1	1		14	1006750-48	RESISTOR
		2	2		13	1010369-97	RESISTOR, FIXED
		4	3		12	1006750-73	RESISTOR
		1	2		11	1006750-80	RESISTOR
		1	1		10	1010353-1	RELAY, ELECTROMAGNETIC,
		1	1		9	1010372-22	DIODE, SEMICONDUCTOR DEVICE
		4	4		8	1010392-1	DIODE, SEMICONDUCTOR DEVICE
		1	1		7	1010279-232	CAPACITOR, FIXED
		1	1		6	1010279-228	CAPACITOR, FIXED
		1	1		5	1010264-15	CAPACITOR, FIXED
		1	1		4	1015692	INSULATOR
		1	1		3	1015690	INSULATOR
		1	1		2	1015691	INSULATOR
		1	1		1	1015689	HEATSINK
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007871		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± XXX ±.005 ±
XX ±.02
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orgel 18 AUG 64 DATE
CHECKED [illegible] 27 AUG 64
APPROVAL [illegible]
APPROVAL [illegible] 10/19/64
NASA APPROVAL [illegible] 10-20-64
MIT APPROVAL [illegible]

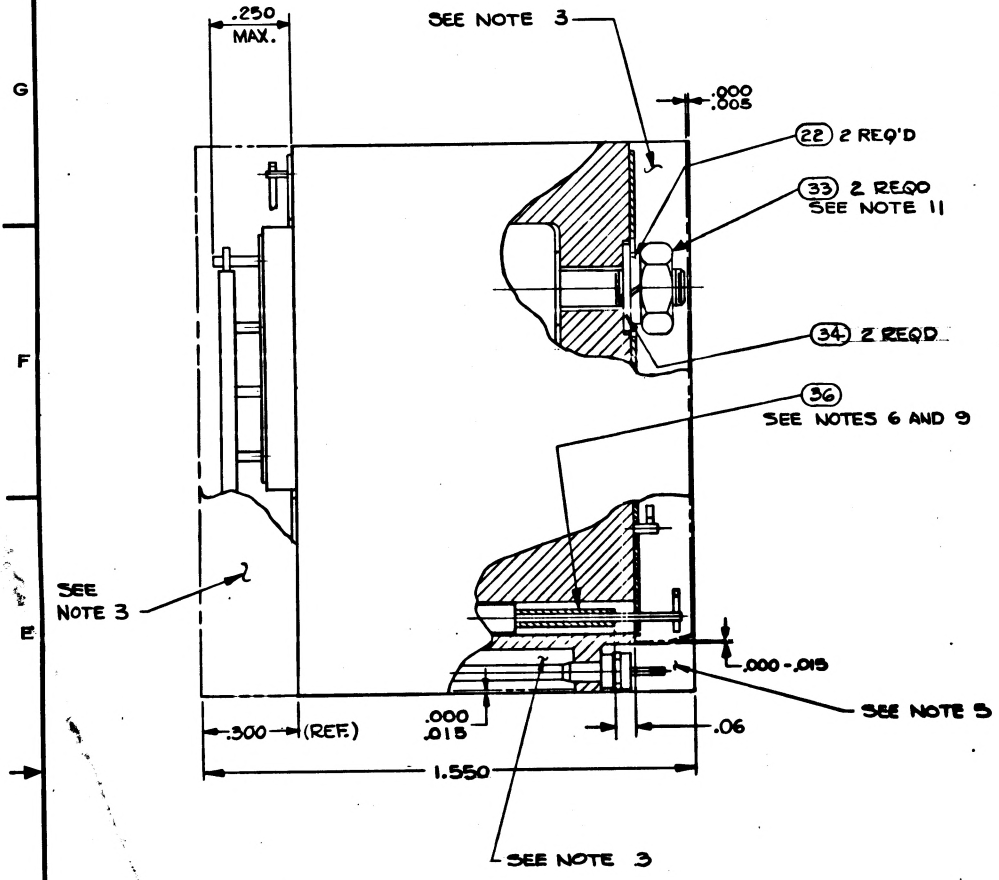
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

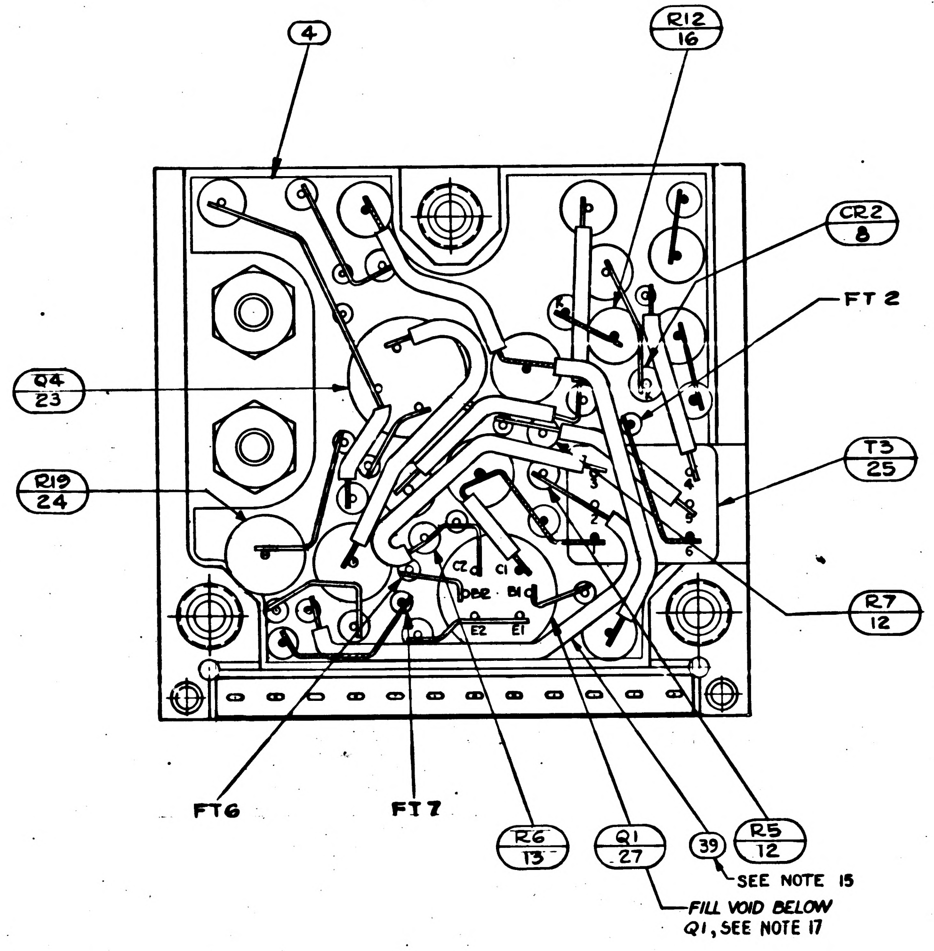
GIMBAL COARSE ALIGN
AMPLIFIER MODULE ASSY

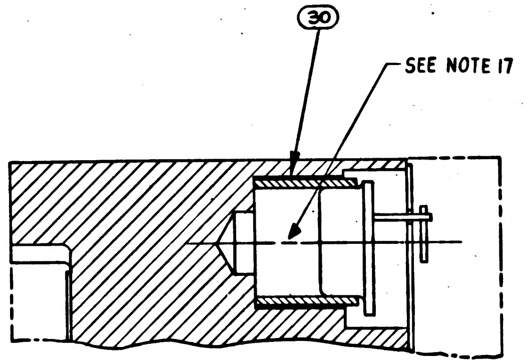
CODE IDENT NO. SIZE E 1007541
SCALE 2:1 SHEET 1 OF 2

REVISIONS 13635

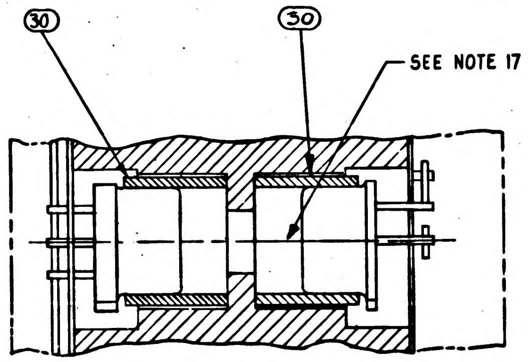
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.


.250
MAX.
SEE NOTE 3
.000
.005
22 2 REQ'D
33 2 REQD
SEE NOTE 11
34 2 REQD
36
SEE NOTES 6 AND 9
SEE
NOTE 3
.000 - .015
SEE NOTE 5
.300
(REF.)
.000
.015
.06
1.550
SEE NOTE 3


4
R12
16
CR2
8
FT 2
Q4
23
R19
24
T3
25
R7
12
FT6
FT7
R6
13
Q1
27
39
R5
12
SEE NOTE 15
FILL VOID BELOW
Q1, SEE NOTE 17


30
SEE NOTE 17

PARTIAL SECTION A-A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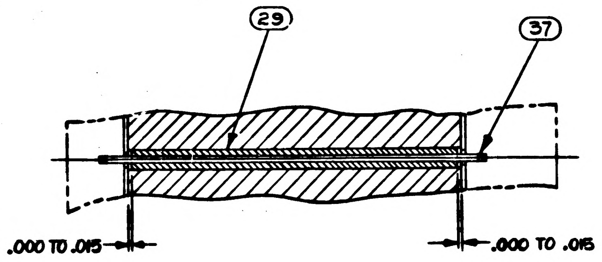
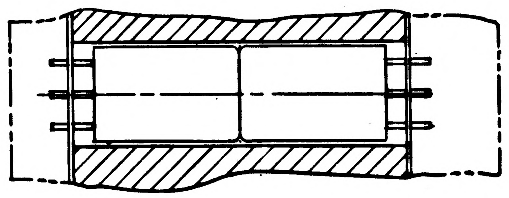
30
SEE NOTE 17

PARTIAL SECTION B-B


29
37
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C



PARTIAL SECTION D-D

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orgel DATE 11 Aug 64
CHECKED C. Udovich 27 AUG 64
APPROVAL Shumaugh
APPROVAL C. B. Stet 10/19/64
NASA APPROVAL W. J. Rhine 10-20-64
MIT APPROVAL 11/10/64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GIMBAL COARSE ALIGN
AMPLIFIER MODULE ASSY

CODE IDENT NO. SIZE E 1007541
SCALE 5:1 SHEET 2 OF 2

1007541

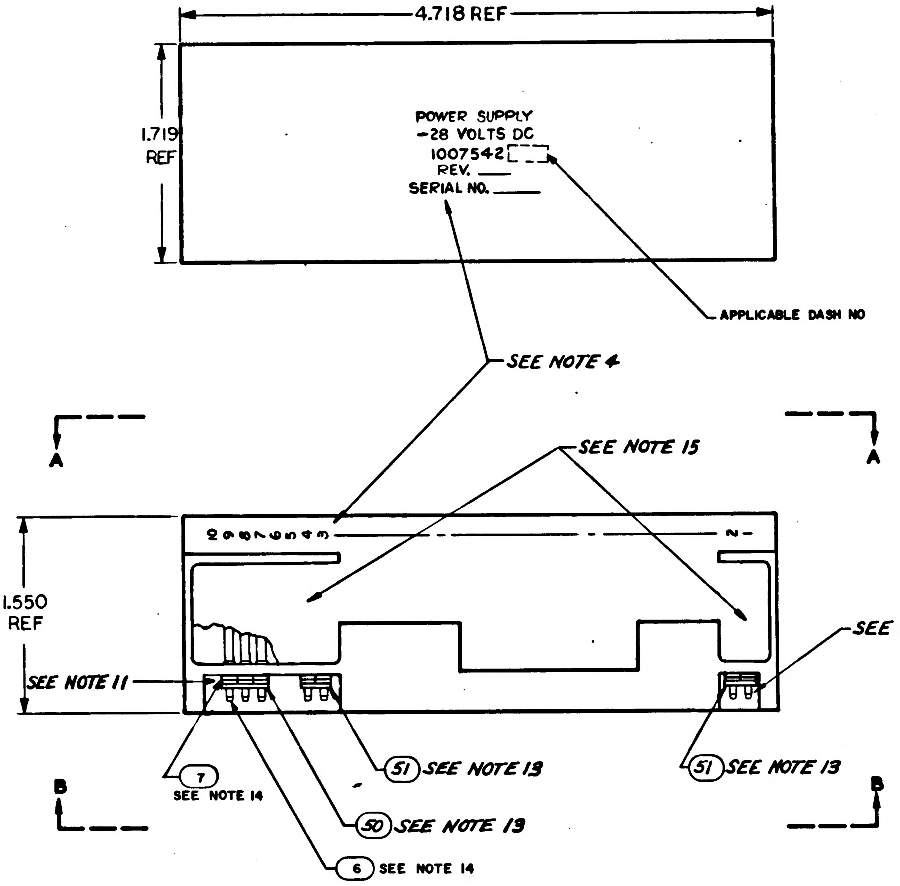
NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17314		15 MAR 65	RJJ

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. PROCURE PER PS 1007042.
3. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND 1002009. METHOD C
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. CONNECTIONS TO Q5, Q6, CR8, & CR9 SHALL BE MADE BY SOLDERING PER ND 1002071.
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
7. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
8. MOUNTING TORQUE SHALL BE AS FOLLOWS:
   - (31) 12 ±2 INCH POUNDS
   - (34) 24 ±2 INCH POUNDS
9. ON ITEMS (2), (3), (4) AND (5) BROKEN PATH INDICATES SLEEVING

   K : CATHODE SIDE OF DIODE
   FT( ): FEED THRU
   PLUS(+) : POSITIVE SIDE OF CAPACITOR
   C : COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C_2 : COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B_2: BASE
   E_2: EMITTER
10. UNLESS OTHERWISE SPECIFIED:
    a. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    b. WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. AREA INDICATED MUST BE FREE OF ENCAPSULATING COMPOUND.
12. TYPICAL SLEEVING FOR: R1, R2, R3, R9 THRU R15 & CR2 THRU CR7.
13. BOND (50) AND (51) TO (7) PER ND 1002237.
14. ASSEMBLE PER ND1002136.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.



			☒		REF	1010025	SCHEMATIC
			2		51	1008540-2	GASKET, CONNECTOR MINIATURE
			1		50	1008540-3	GASKET, CONNECTOR MINIATURE
			AR		49	1006776-20	INSULATION SLEEVING ELECTRICAL
			2		48	MS35338-81	WASHER, LOCK
			2		47	1008070-9	WASHER, FLAT
			1		46	MS35338-78	WASHER, LOCK
			1		45	1008070-5	WASHER, FLAT
			1		44	MS35234-22	SCREW, PAN HEAD
			AR		43	1006776-22	INSULATION, SLEEVING
			AR		42	1006776-21	INSULATION SLEEVING
			AR		41	1006757-9	WIRE .032 DIA
			AR		40	1006757-8	WIRE .020 DIA
			AR		39	1006757-1	RIBBON .010 X .020
			1		38	1010339	TRANSFORMER
			1		37	1010323	TRANSFORMER
			2		36	1010398-2	TRANSISTOR
			1		35	1010376-4	TRANSISTOR
			1		34	1010273-2	TRANSISTOR
			1		33	1006752	TRANSISTOR
			6		32	1010385	SEMICONDUTOR DEVICE DIODE
			2		31	1010322-001	SEMICONDUCTOR DEVICE DIODE
			1		30	1010372-22	SEMICONDUCTOR DEVICE, DIODE
			2		29	1010410-13	CAPACITOR FIXED
			5		28	1010438-1	CAPACITOR FIXED
			1		27	1006789-002	CAPACITOR FIXED
			2		26	1006771-30	CAPACITOR FIXED
			2		25	1010316-40	CAPACITOR, FIXED
			2		24	1010369-141	RESISTOR, FIXED
			2		23	1010364-381	RESISTOR, FIXTED
			2		22	1010363-557	RESISTOR, FIXED
			2		21	1006750-74	RESISTOR, FIXED
			1		20	1006750-66	RESISTOR, FIXED
			3		19	1006750-56	RESISTOR, FIXED
			1		18	1006750-49	RESISTOR, FIXED
			2		17	1006750-19	RESISTOR, FIXED
			2		16	1008025-2	INSULATOR, BUSHING
			1		15	1008025-1	INSULATOR, BUSHING
			2		14	1008021-2	BUSHING, INSULATOR
			2		13	1008071-5	WASHER, FLAT
			2		12	1008024-4	WASHER, INSULATOR
			2		11	1008024-3	WASHER, INSULATOR
			2		10	MS20341-416B	NUT
			2		9	MS20341-10B	NUT
			1		8	MS20341-4A	NUT
			10		7	1006775	INSULATOR
			10		6	1006782-5	CONTACT, WRAPOST-MALE
			1		5	1015697	INSULATOR
			1		4	1015696	INSULATOR
			1		3	1015695	INSULATOR
			1		2	1015694	INSULATOR
			1		1	1015693	HEATSINK
			011	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ ±.005 +
- ±.02 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 13 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL B. R. Test 11-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

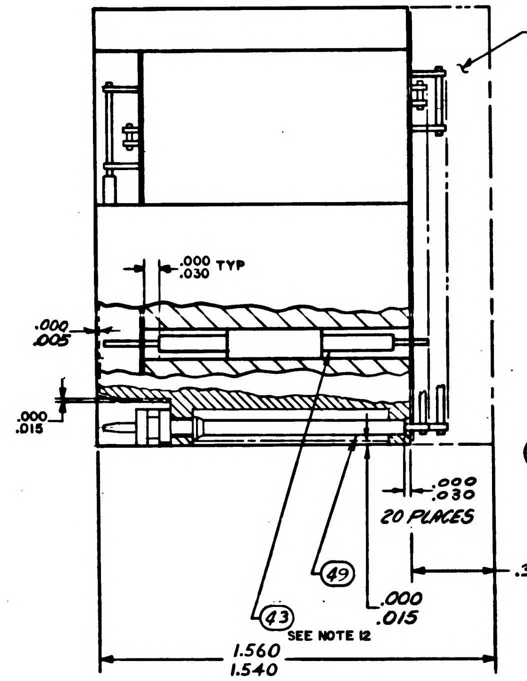
POWER SUPPLY, -28 VDC
MODULE ASSY

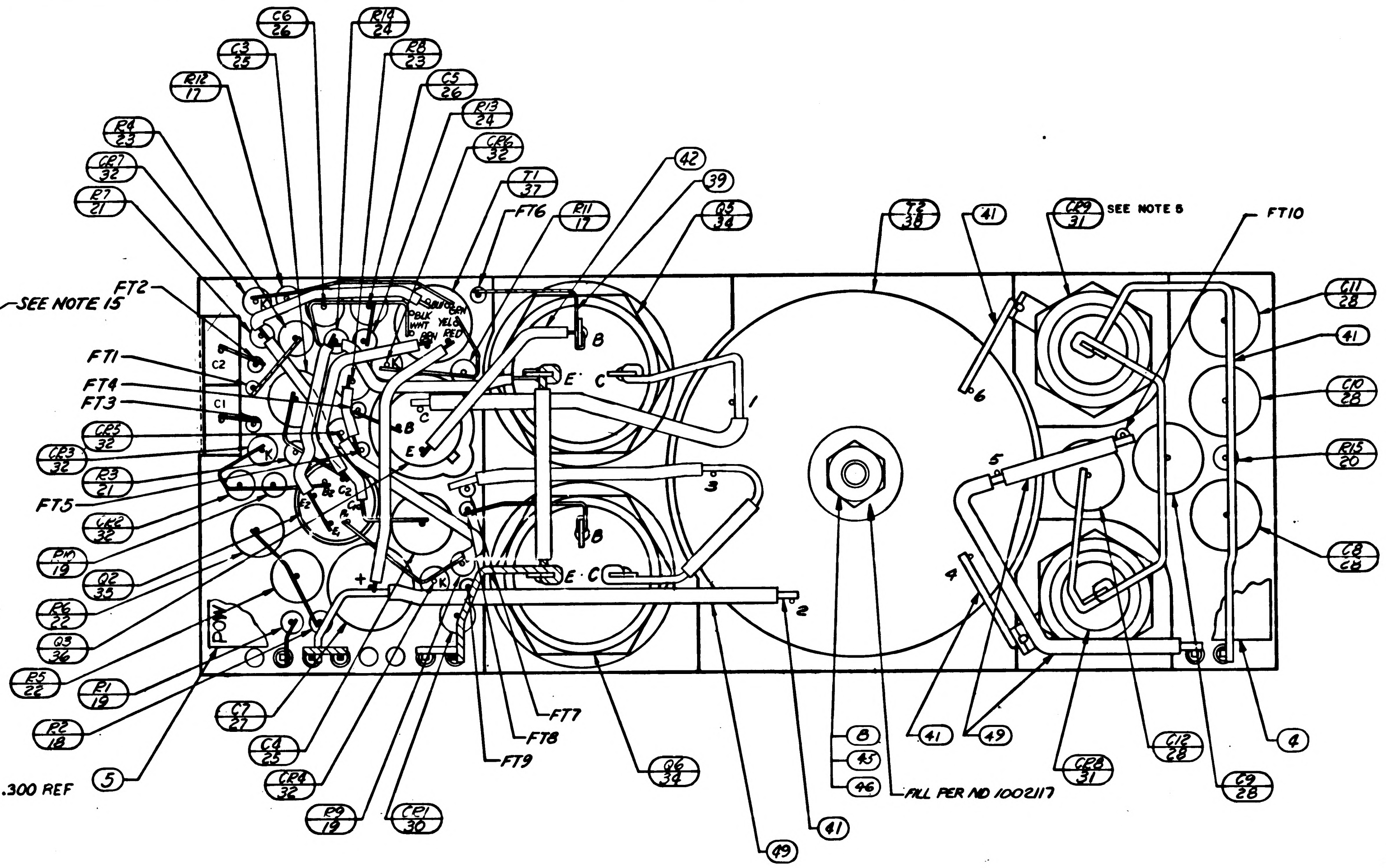
CODE IDENT NO.
SIZE E
1007542
SCALE 2:1
SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

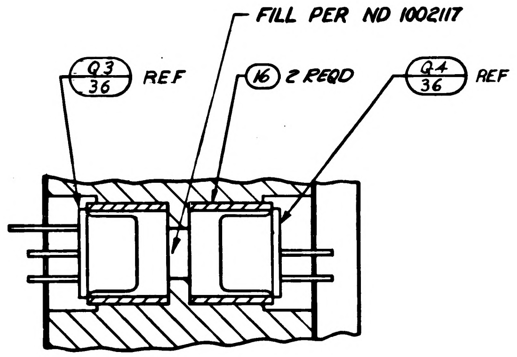
REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17514		15 MAR 65	RJ

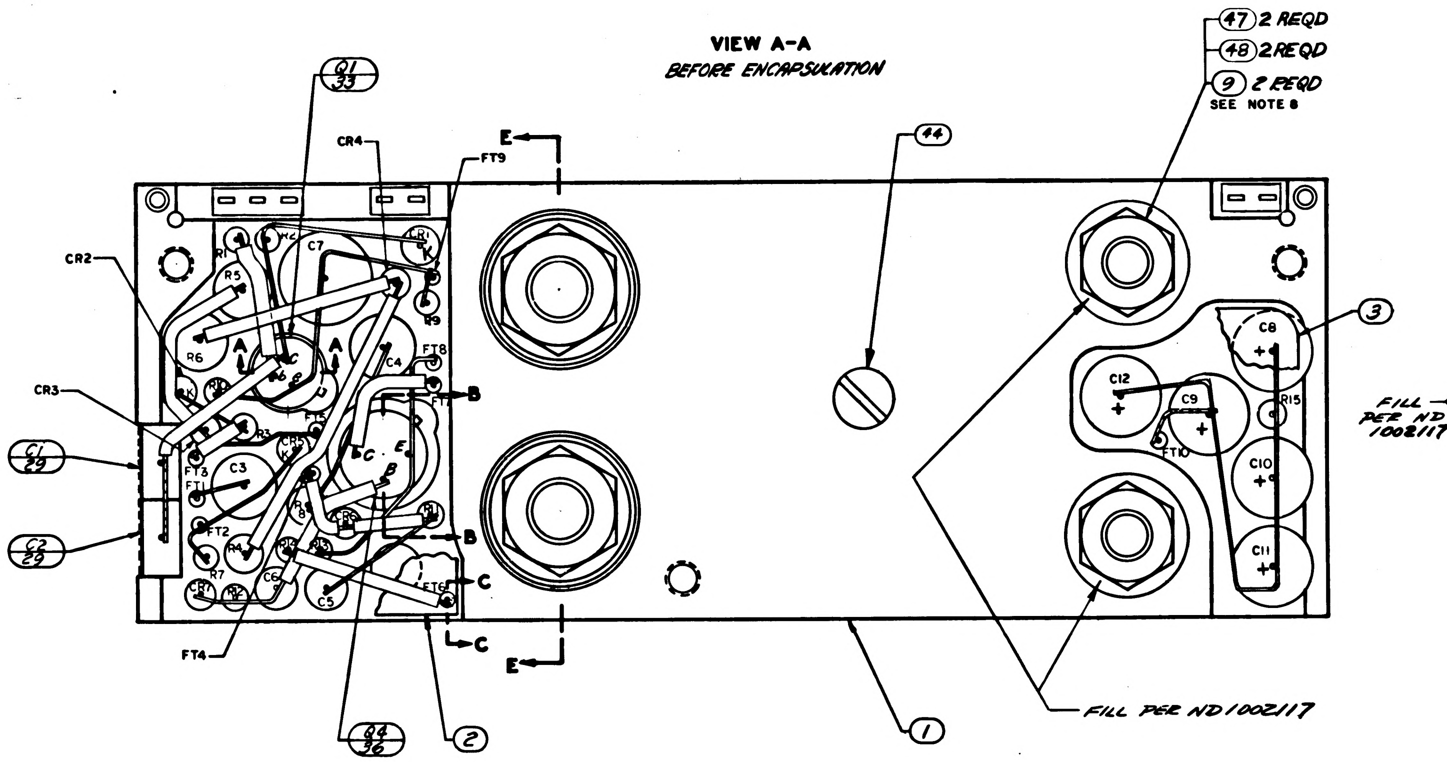

SEE NOTE 15
.000 TYP
.030
.000
.005
.000
.015
.000
.030
20 PLACES
.300 REF
.000
.015
49
43
SEE NOTE 12
1.560
1.540


C6 26
R10 24
C3 25
R8 23
C5 26
R12 17
R13 24
R4 23
CR6 32
CR7 32
T1 37
R7 21
FT6
R11 17
42
39
Q3 34
T2 38
41
CR9 31
SEE NOTE 8
FT10
FT2
C11 28
FT1
41
FT4
C10 28
FT3
CR5 32
R15 20
CR3 32
R3 21
FT5
C8 28
CR2 32
R14 19
Q2 34
R6 22
Q5 36
R5 22
R1 19
R2 18
C7 27
5
C4 25
FT7
FT8
FT9
CR4 32
R9 19
CR1 30
Q6 34
49
41
8
45
46
FILL PER ND 1002117
41
49
CR8 31
C12 28
C9 28
4
POW

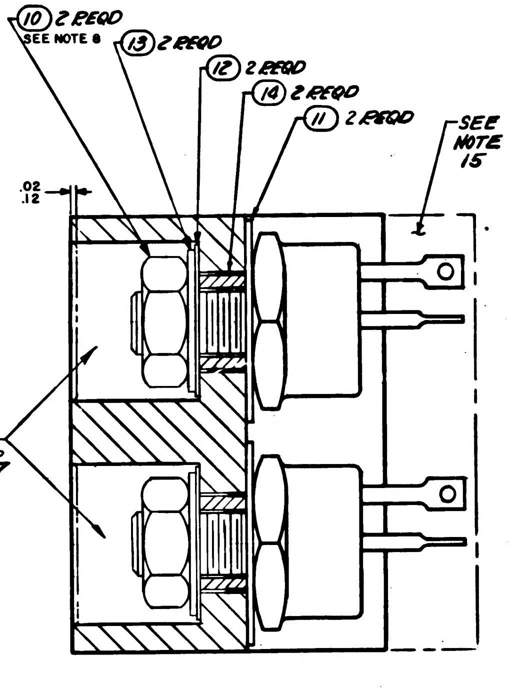
VIEW A-A
BEFORE ENCAPSULATION


FILL PER ND 1002117
Q3 36 REF
16 2 REQD
Q4 36 REF

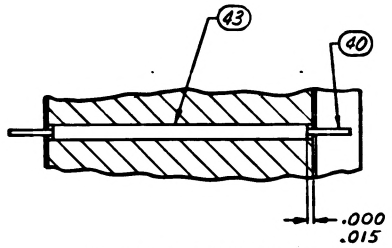
PARTIAL SECTION B-B


Q1 33
47 2 REQD
48 2 REQD
9 2 REQD
SEE NOTE 8
CR4
FT9
E
44
CR2
3
CR3
C1 29
C2 29
B
C
B
C
FT4
E
Q4 36
2
1
FILL PER ND 1002117
C8
C12
C9
R15
C10
C11
FT10
C7
C3
C4
C5
FT1
FT2
FT3
FT6
FT8
R1
R5
R6
R7
R9

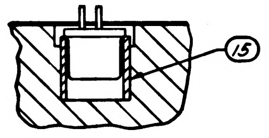
VIEW B-B
BEFORE ENCAPSULATION


10 2 REQD
SEE NOTE 8
13 2 REQD
12 2 REQD
14 2 REQD
11 2 REQD
SEE NOTE 15
.02
.12
FILL PER ND 1002117

SECTION E-E


43
40
.000
.015

PARTIAL SECTION C-C
TYPICAL FOR FT1 THRU FT10



PARTIAL SECTION A-A

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	ACSP PN	
DO NOT SCALE THIS DRAWING	DRAWN DATE 13 AUG 64 CHECKED A. Udovich 27 AUG 64 APPROVAL APPROVAL 10-5-64	POWER SUPPLY -28 VDC MODULE ASSEMBLY
MATERIAL	NASA APPROVAL	CODE IDENT NO. SIZE E 1007542
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 4:1 SHEET 2 OF 2

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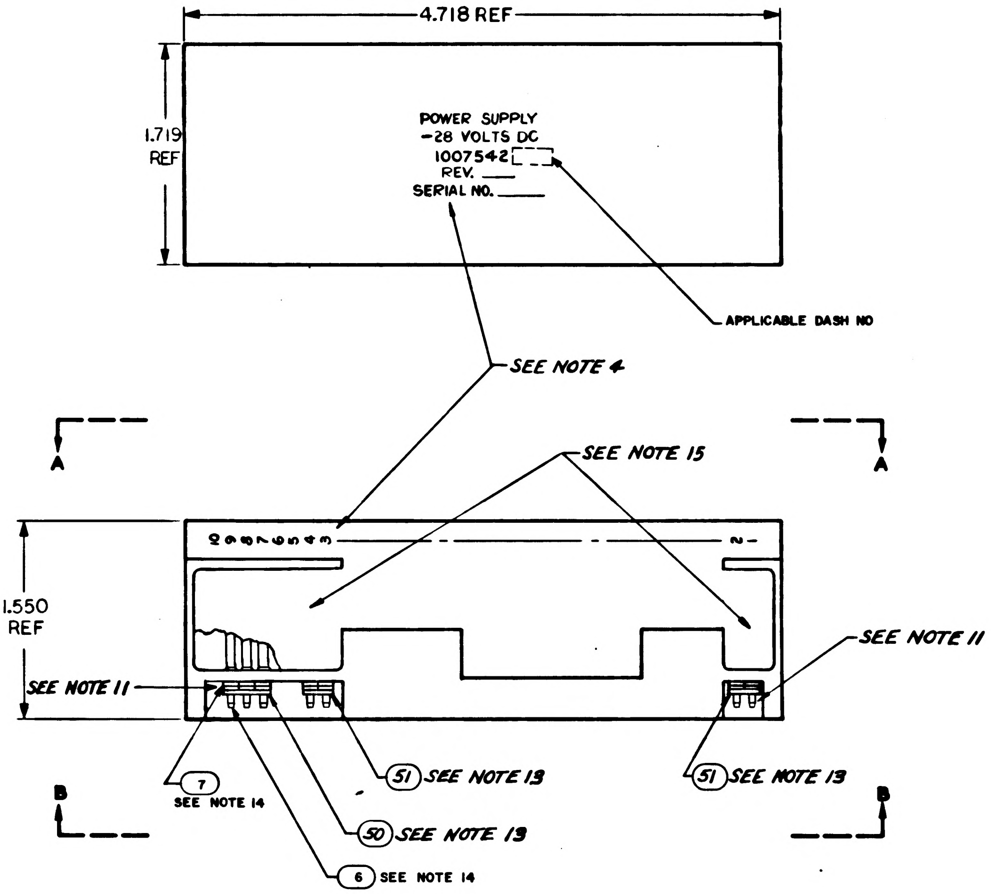
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
A		REVISED PER TDRR 17314		13 MAR 65	RJJ
B		REVISED PER TDRR 18104		12 APR 65	

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. PROCURE PER PS 1007042.
3. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND 1002009. METHOD C
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. CONNECTIONS TO Q5, Q6, CR8, & CR9 SHALL BE MADE BY SOLDERING PER ND 1002071.
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
7. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
8. MOUNTING TORQUE SHALL BE AS FOLLOWS:
   - (57) 12 ±2 INCH POUNDS
   - (34) 24 ±2 INCH POUNDS
9. ON ITEMS ②, ③, ④ AND ⑤ BROKEN PATH INDICATES SLEEVING

   K : CATHODE SIDE OF DIODE
   FT( ) : FEED THRU
   PLUS(+) : POSITIVE SIDE OF CAPACITOR
   C : COLLECTOR LEAD OF TRANSISTOR
   B : BASE ↓ ↓ ↓
   E : EMITTER
   C_2 : COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B_2 : BASE ↓ ↓ ↓ ↓
   E_2 : EMITTER

10. UNLESS OTHERWISE SPECIFIED:
    a. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.
    b. WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
11. AREA INDICATED MUST BE FREE OF ENCAPSULATING COMPOUND.
12. TYPICAL SLEEVING FOR: R1, R2, R3, R9 THRU R15 & CR2 THRU CR7.
13. BOND (50) AND (51) TO ⑦ PER ND 1002237.
14. ASSEMBLE PER ND 1002136.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.
17. APPLY SEALING COMPOUND PER MIL-S-22473, GRADE A.



QUANTITY REQUIRED				EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			011				
			1		58	1008309	HEATSINK
			2		57	1010777-1	SEMICONDUCTOR DEVICE, DIODE
			2		56	1008071-4	WASHER, FLAT
			2		55	2008013-4	TERMINAL LUG, SOLDER, FLAT
			2		54	1008024-2	WASHER, INSULATOR
			2		53	1008021-1	BUSHING, INSULATOR
			2		52	1008024-1	WASHER, INSULATOR
			╳		REF	1010025	SCHEMATIC
			2		51	1008540-2	GASKET, CONNECTOR MINIATURE
			1		50	1008540-3	GASKET, CONNECTOR MINIATURE
			AR		49	1006776-20	INSULATION SLEEVING ELECTRICAL
			~~2~~		~~48~~	~~MS 35338-81~~	~~WASHER, LOCK~~
			~~2~~		~~47~~	~~1008070-9~~	~~WASHER, FLAT~~
			1		46	MS35338-78	WASHER, LOCK
			1		45	1008070-5	WASHER, FLAT
			1		44	MS 35234-22	SCREW, PAN HEAD
			AR		43	1006776-22	INSULATION SLEEVING
			AR		42	1006776-21	INSULATION SLEEVING
			AR		41	1006757-9	WIRE .032 DIA
			AR		40	1006757-8	WIRE .020 DIA
			AR		39	1006757-1	RIBBON .010 X .020
			1		38	1010339	TRANSFORMER
			1		37	1010323	TRANSFORMER
			2		36	1010398-2	TRANSISTOR
			1		35	1010376-4	TRANSISTOR
			1		34	1010273-2	TRANSISTOR
			1		33	1006752	TRANSISTOR
			6		32	1010385	SEMICONDUTOR DEVICE DIODE
			~~2~~		~~31~~	~~1010322-001~~	~~SEMICONDUCTOR DEVICE DIODE~~
			1		30	1010372-22	SEMICONDUCTOR DEVICE, DIODE
			2		29	1010410-13	CAPACITOR FIXED
			5		28	1010438-1	CAPACITOR FIXED
			1		27	1006789-002	CAPACITOR FIXED
			2		26	1006777-30	CAPACITOR FIXED
			2		25	1010316-40	CAPACITOR, FIXED
			2		24	1010369-141	RESISTOR, FIXED
			2		23	1010364-381	RESISTOR, FIXTED
			2		22	1010363-557	RESISTOR, FIXED
			2		21	1006750-74	RESISTOR, FIXED
			1		20	1006750-66	RESISTOR, FIXED
			3		19	1006750-56	RESISTOR, FIXED
			1		18	1006750-49	RESISTOR, FIXED
			2		17	1006750-19	RESISTOR, FIXED
			2		16	1008025-2	INSULATOR, BUSHING
			1		15	1008025-1	INSULATOR, BUSHING
			2		14	1008021-2	BUSHING, INSULATOR
			2		13	1008071-5	WASHER, FLAT
			2		12	1008024-4	WASHER, INSULATOR
			2		11	1008024-3	WASHER, INSULATOR
			2		10	MS20341-416B	NUT
			2		9	MS20341-10B	NUT
			1		8	MS20341-4A	NUT
			10		7	1006775	INSULATOR
			10		6	1006782-5	CONTACT, WRAPOST-MALE
			1		5	1015697	INSULATOR
			1		4	1015696	INSULATOR
			1		3	1015695	INSULATOR
			1		2	1015694	INSULATOR
			~~1~~		~~1~~	~~1015693~~	~~HEATSINK~~

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	±.005	+
-	±.02	-

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 28 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL 11-5-64
NASA APPROVAL 12-6-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

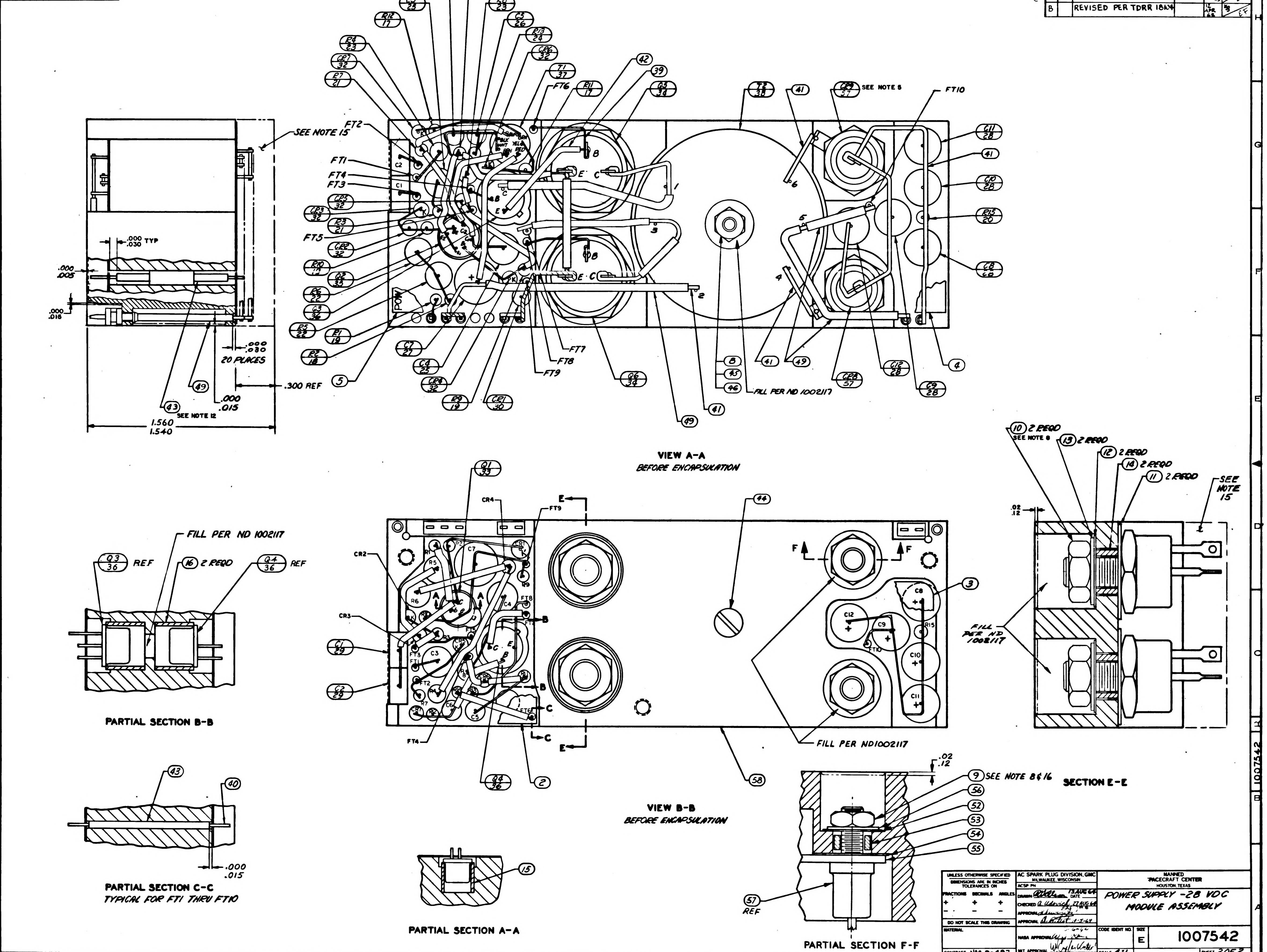
POWER SUPPLY, -28 VDC
MODULE ASSY

CODE IDENT NO.
SIZE E
1007542
SCALE 2:1
SHEET 1 OF 2

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17514		15 MAR 65	RJ
B		REVISED PER TDRR 18124		12 APR 65	EF


SEE NOTE 15
.000 TYP
.030
.000
.005
.000
.015
.000
.030
20 PLACES
.300 REF
.000
.015
SEE NOTE 12
1.560
1.540
FT1
FT2
FT3
FT4
FT5
FT6
FT7
FT8
FT9
FT10
C6 26
R14 24
C3 22
R8 23
R12 17
C5 26
R13 24
R4 23
CR6 32
CR7 32
T1 37
R7 21
R11 17
CR5 32
CR3 32
R3 21
CR2 32
R10 17
Q2 35
R6 22
C3 36
R5 22
R1 19
R2 18
C7 27
C4 25
CR4 32
R9 19
CR1 30
Q5 34
Q6 34
T2 38
CR9 57
SEE NOTE 8
CR8 57
C11 28
C10 28
R15 20
C8 28
C12 28
C9 28
FILL PER ND 1002117
VIEW A-A
BEFORE ENCAPSULATION
PARTIAL SECTION B-B
Q3 36 REF
Q4 36 REF
16 2 REQD
FILL PER ND 1002117
Q1 33
Q4 36
C1 29
C2 29
CR2
CR3
CR4
E
F
B
C
VIEW B-B
BEFORE ENCAPSULATION
FILL PER ND1002117
10 2 REQD
SEE NOTE 8
13 2 REQD
12 2 REQD
14 2 REQD
11 2 REQD
SEE NOTE 15
.02
.12
FILL PER ND 1002117
SECTION E-E
PARTIAL SECTION C-C
TYPICAL FOR FT1 THRU FT10
.000
.015
PARTIAL SECTION A-A
9 SEE NOTE 8 & 16
57 REF
PARTIAL SECTION F-F
3
4
5
2
15
39
40
41
42
43
44
45
46
49
52
53
54
55
56
58
8
7
6
5
4
3
2
1
H
G
F
E
D
C
B
A

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	ACSP PN	
MATERIAL	DRAWN 13 AUG 64 DATE CHECKED A. Udovich 27 AUG 64 APPROVAL APPROVAL 10-5-64	POWER SUPPLY -28 VDC MODULE ASSEMBLY
CONTRACT NAS 9-497	NASA APPROVAL MIT APPROVAL	CODE IDENT NO. SIZE E 1007542 SCALE 4:1 SHEET 2 OF 2

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 13233

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17314		15 MAR 65	RJJ
B		REVISED PER TDRR 18104		12 APR 65	EF
C		REVISED PER TDRR 19404		2 JUN 65	WSM EF

TABLE I

CONFIGURATION	MAT	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER AT PERIMETER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	ADHESIVE	.12 MIN 100% OF PERIMETER .25 MIN 80% OF PERIMETER	.25 MIN 100% OF PERIMETER	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	ADHESIVE	CORNER FILLET & VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	.25 MIN 100% OF PERIMETER	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	PRIMER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 TO .06 OF EXTERNAL EDGE

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. PROCURE PER PS 1007042.
3. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND 1002009. METHOD C
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. CONNECTIONS TO Q5, Q6, CR8, & CR9 SHALL BE MADE BY SOLDERING PER ND 1002071.
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
7. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
8. MOUNTING TORQUE SHALL BE AS FOLLOWS:

   (57) 12 ±2 INCH POUNDS

   (34) 24 ±2 INCH POUNDS

9. ON ITEMS (2), (3), (4) AND (5) BROKEN PATH INDICATES SLEEVING

   K : CATHODE SIDE OF DIODE

   FT( ): FEED THRU

   PLUS(+): POSITIVE SIDE OF CAPACITOR

   C : COLLECTOR LEAD OF TRANSISTOR

   B: BASE

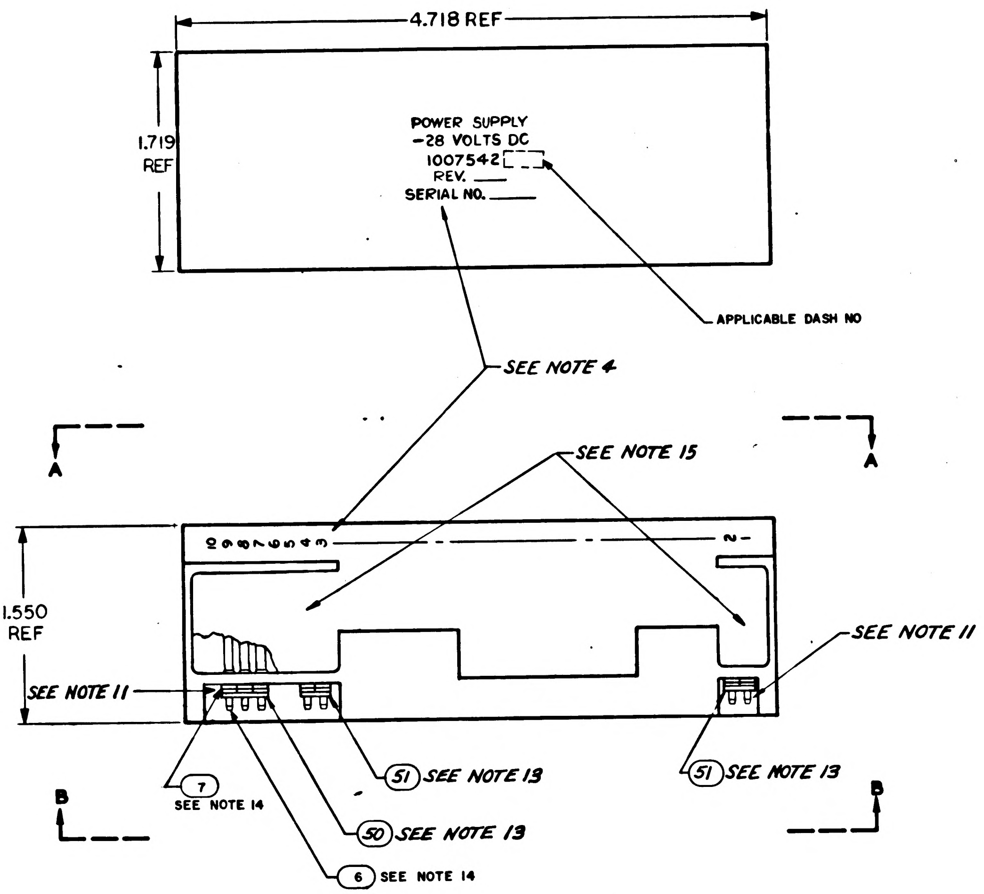
   E: EMITTER

   C_2: COLLECTOR LEAD OF MULTISTAGE TRANSISTOR

   B_2: BASE

   E_2: EMITTER

10. UNLESS OTHERWISE SPECIFIED:
    a. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    b. WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. AREA INDICATED MUST BE FREE OF ENCAPSULATING COMPOUND.
12. TYPICAL SLEEVING FOR: R1, R2, R3, R9 THRU R15 & CR2 THRU CR7.
13. BOND (50) AND (51) TO (7) PER ND 1002237.
14. ASSEMBLE PER ND1002136.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
17. APPLY SEALING COMPOUND PER MIL-S-22473, GRADE A.
18. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF PRIMER BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE I. PRIMER TO CONSIST OF SIX PARTS BY VOLUME OF 1012504-1 AND ONE PART BY VOLUME OF 1012504-2. APPLY MATERIAL AND PRIMER AS INDICATED IN TABLE I.



LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1		58	1008309	HEATSINK
2		57	1010777-1	SEMICONDUCTOR DEVICE, DIODE
2		56	1008071-4	WASHER, FLAT
2		55	2008013-4	TERMINAL LUG, SOLDER, FLAT
2		54	1008024-2	WASHER, INSULATOR
2		53	1008021-1	BUSHING, INSULATOR
2		52	1008024-1	WASHER, INSULATOR
╳		REF	1010025	SCHEMATIC
2		51	1008540-2	GASKET, CONNECTOR MINIATURE
1		50	1008540-3	GASKET, CONNECTOR MINIATURE
AR		49	1006776-20	INSULATION SLEEVING ELECTRICAL
~~2~~		~~48~~	~~MS35338-81~~	~~WASHER, LOCK~~
~~2~~		~~47~~	~~1008070-9~~	~~WASHER, FLAT~~
1		46	MS35338-78	WASHER, LOCK
1		45	1008070-5	WASHER, FLAT
1		44	MS35234-22	SCREW, PAN HEAD
AR		43	1006776-22	INSULATION SLEEVING
AR		42	1006776-21	INSULATION SLEEVING
AR		41	1006757-9	WIRE .032 DIA
AR		40	1006757-8	WIRE .020 DIA
AR		39	1006757-1	RIBBON .010 X .020
1		38	1010339	TRANSFORMER
1		37	1010323	TRANSFORMER
2		36	1010398-2	TRANSISTOR
1		35	1010376-4	TRANSISTOR
1		34	1010273-2	TRANSISTOR
1		33	1006752	TRANSISTOR
6		32	1010385	SEMICONDUTOR DEVICE DIODE
~~2~~		~~31~~	~~1010322-001~~	~~SEMICONDUCTOR DEVICE DIODE~~
1		30	1010372-22	SEMICONDUCTOR DEVICE, DIODE
2		29	1010410-13	CAPACITOR FIXED
5		28	1010438-1	CAPACITOR FIXED
1		27	1006789-002	CAPACITOR FIXED
2		26	1006771-30	CAPACITOR FIXED
2		25	1010316-40	CAPACITOR, FIXED
2		24	1010369-141	RESISTOR, FIXED
2		23	1010364-381	RESISTOR, FIXTED
2		22	1010363-557	RESISTOR, FIXED
2		21	1006750-74	RESISTOR, FIXED
1		20	1006750-66	RESISTOR, FIXED
3		19	1006750-56	RESISTOR, FIXED
1		18	1006750-49	RESISTOR, FIXED
2		17	1006750-19	RESISTOR, FIXED
2		16	1008025-2	INSULATOR, BUSHING
1		15	1008025-1	INSULATOR, BUSHING
2		14	1008021-2	BUSHING, INSULATOR
2		13	1008071-5	WASHER, FLAT
2		12	1008024-4	WASHER, INSULATOR
2		11	1008024-3	WASHER, INSULATOR
2		10	MS20341-416B	NUT
2		9	MS20341-10B	NUT
1		8	MS20341-4A	NUT
10		7	1006775	INSULATOR
10		6	1006782-5	CONTACT, WRAPOST-MALE
1		5	1015697	INSULATOR
1		4	1015696	INSULATOR
1		3	1015695	INSULATOR
1		2	1015694	INSULATOR
~~1~~		~~1~~	~~1015693~~	~~HEATSINK~~

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ ±.005 +
- ±.02 -
DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN R. Nilson DATE 13 AUG 64
CHECKED A. Womack 27 AUG 64
APPROVAL
APPROVAL R. R. Test 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

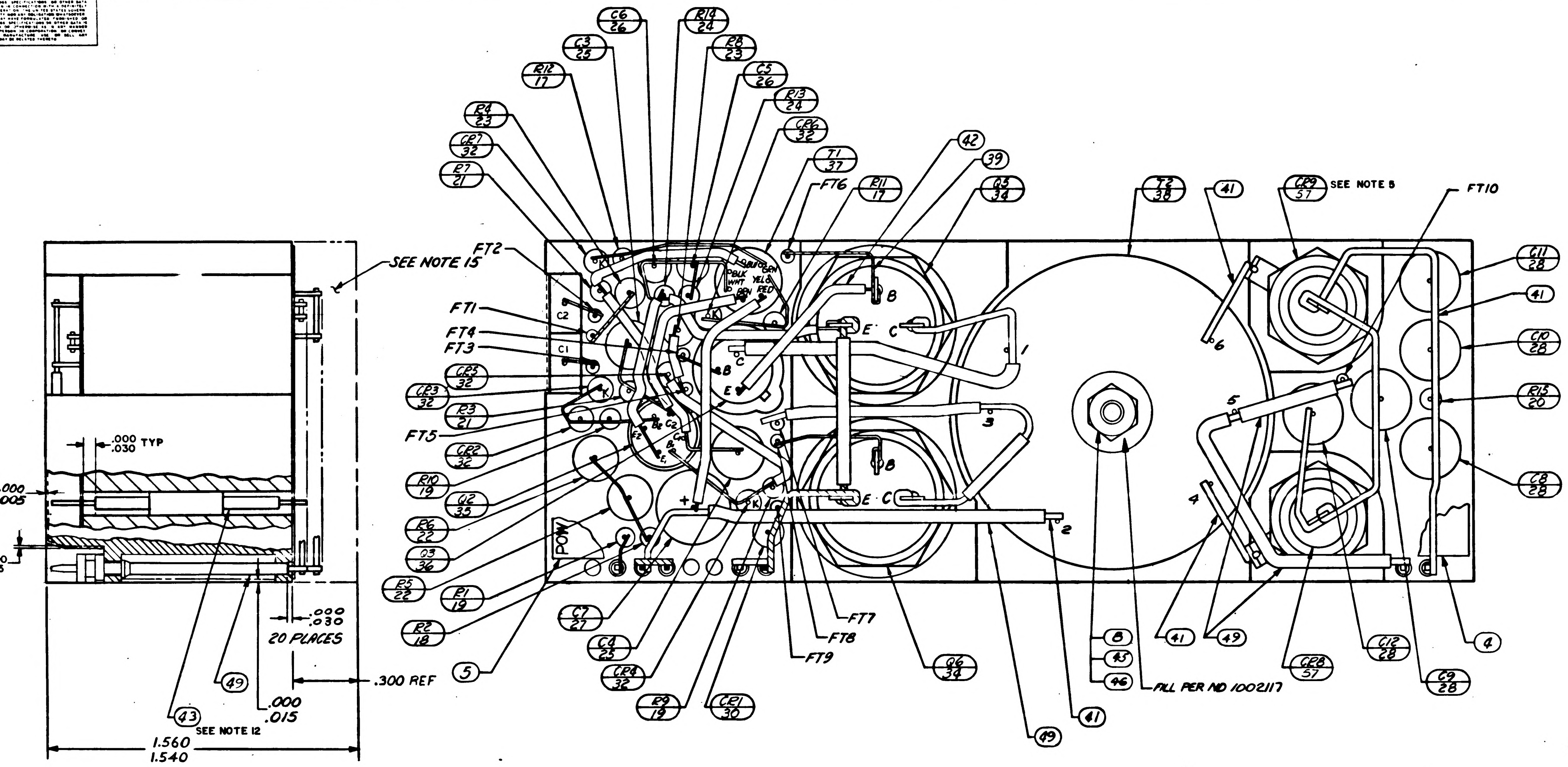
POWER SUPPLY, -28 VDC
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007542
SCALE 2:1
SHEET 1 OF 2

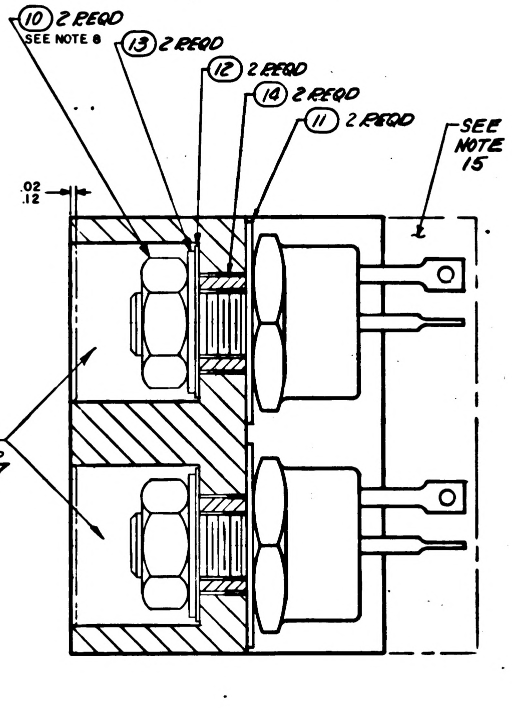
NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS / 3 2 3 3

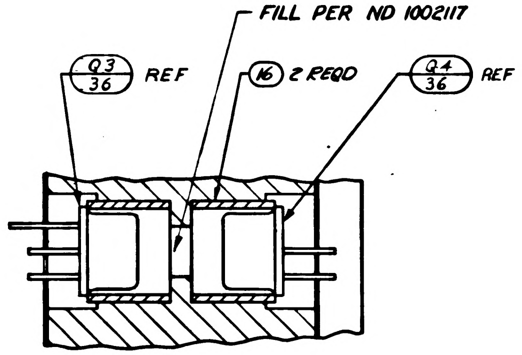
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17314		15 MAR 65	RJJ
B		REVISED PER TDRR 18104		12 APR 65	EF
C		REVISED PER TDRR 19404		2 JUN 65	EF


SEE NOTE 15
.000 TYP
.030
.000
.005
.000
.015
20 PLACES
.000
.030
.300 REF
.000
.015
SEE NOTE 12
1.560
1.540
FT1
FT2
FT3
FT4
FT5
FT6
FT7
FT8
FT9
FT10
SEE NOTE 5
FILL PER ND 1002117

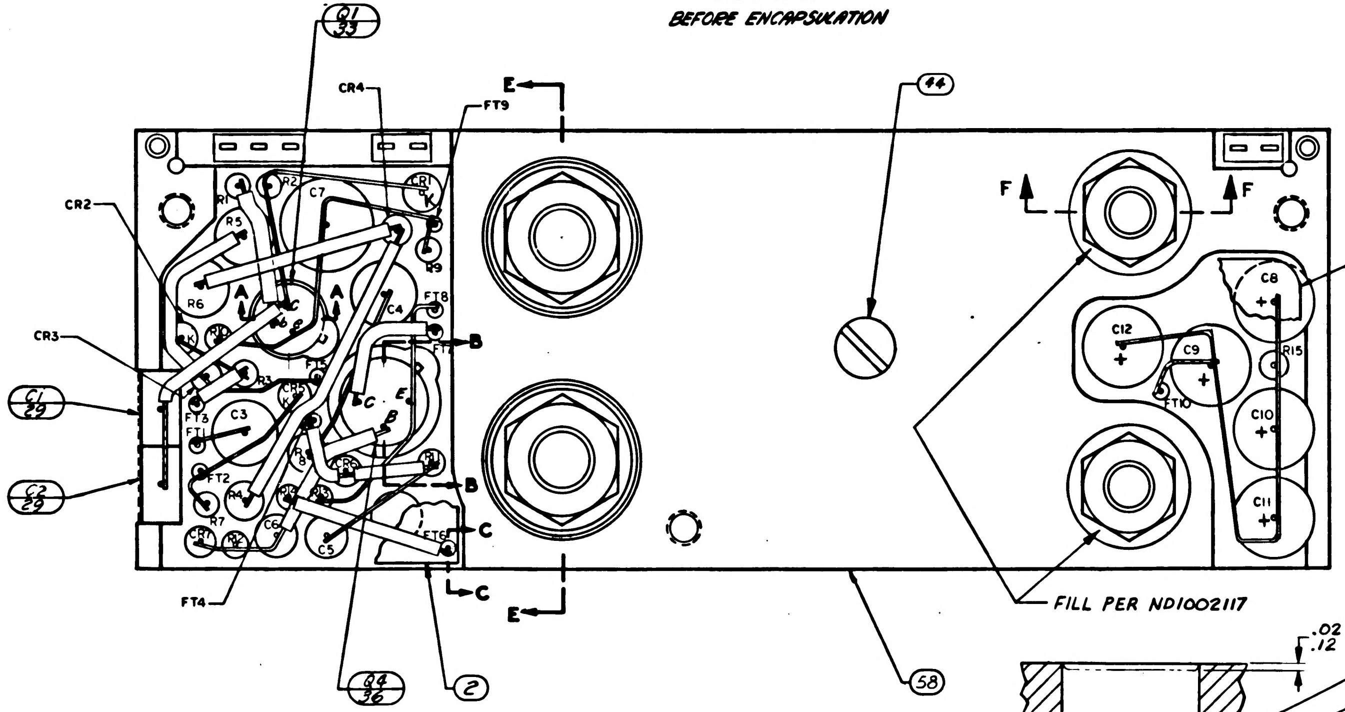
VIEW A-A
BEFORE ENCAPSULATION


10 2 REQD
SEE NOTE 8
13 2 REQD
12 2 REQD
14 2 REQD
11 2 REQD
SEE NOTE 15
.02
.12
FILL PER ND 1002117

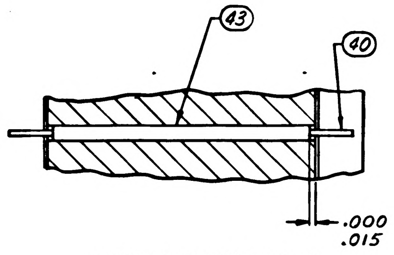
SECTION E-E


FILL PER ND 1002117
Q3 36 REF
16 2 REQD
Q4 36 REF

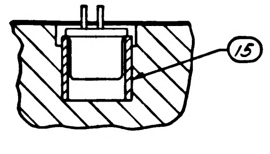
PARTIAL SECTION B-B


CR4
FT9
E
E
CR2
CR3
C1 29
C2 29
FT4
B
B
C
C
F
F
FILL PER ND1002117
Q4 36
2
58
44
3

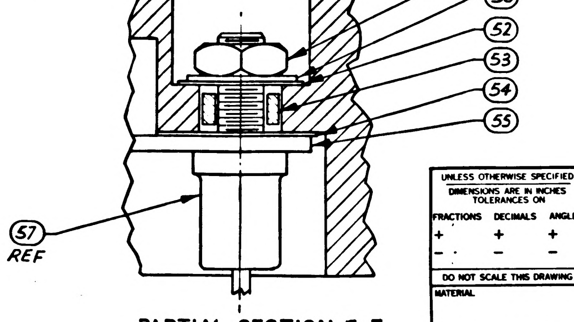
VIEW B-B
BEFORE ENCAPSULATION


43
40
.000
.015

PARTIAL SECTION C-C
TYPICAL FOR FT1 THRU FT10



PARTIAL SECTION A-A


.02
.12
9 SEE NOTE 8 & 16
56
52
53
54
55
57 REF

PARTIAL SECTION F-F

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + – DECIMALS + – ANGLES + –	M I T INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DO NOT SCALE THIS DRAWING	DRAWN R.Allen DATE 13 AUG 64 CHECKED A. Udovich 27 AUG 64 APPROVAL APPROVAL 1-5-64	POWER SUPPLY -28 VDC MODULE ASSEMBLY	
MATERIAL	NASA APPROVAL	CODE IDENT NO. 80230	SIZE E · 1007542
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 4:1	SHEET 2 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17314		15 MAR 65	RJJ
B		REVISED PER TDRR 18104		12 APR 65	
C		REVISED PER TDRR 19404		2 JUN 65	JSM
D		REVISED PER TDRR 19436		3 JUN 65	HCK

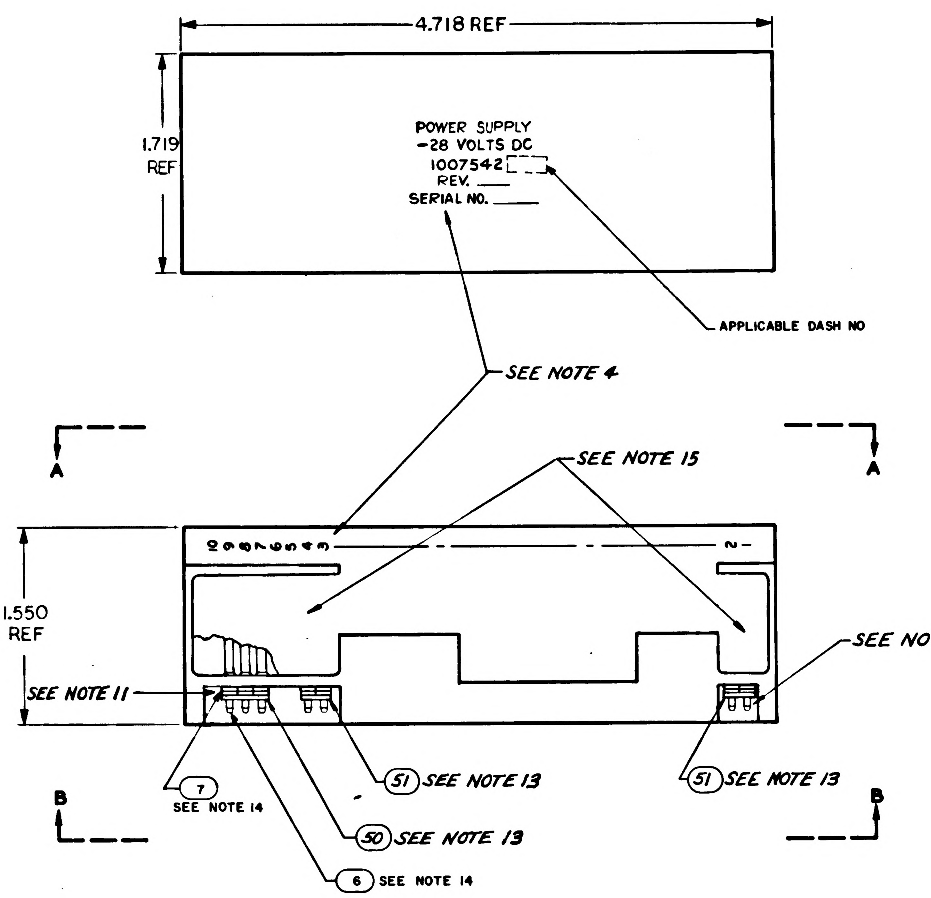
TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. PROCURE PER PS 1007042.
3. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND 1002009. METHOD C
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. CONNECTIONS TO Q5, Q6, CR8, & CR9 SHALL BE MADE BY SOLDERING PER ND 1002071.
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
7. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
8. MOUNTING TORQUE SHALL BE AS FOLLOWS:
   - (57) 12 ±2 INCH POUNDS
   - (34) 24 ±2 INCH POUNDS
9. ON ITEMS (2), (3), (4) AND (5) BROKEN PATH INDICATES SLEEVING

   K : CATHODE SIDE OF DIODE
   FT( ): FEED THRU
   PLUS(+) : POSITIVE SIDE OF CAPACITOR
   C : COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C2 : COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B2: BASE
   E2: EMITTER
10. UNLESS OTHERWISE SPECIFIED:
    a. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    b. WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. AREA INDICATED MUST BE FREE OF ENCAPSULATING COMPOUND.
12. TYPICAL SLEEVING FOR: R1, R2, R3, R9 THRU R15 & CR2 THRU CR7.
13. BOND (50) AND (51) TO (7) PER ND 1002237.
14. ASSEMBLE PER ND1002136.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
17. APPLY SEALING COMPOUND PER MIL-S-22473, GRADE A.
18. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.



LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	FIND NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1		58	1008309	HEATSINK
2		57	1010777-1	SEMICONDUCTOR DEVICE, DIODE
2		56	1008071-4	WASHER, FLAT
2		55	2008013-4	TERMINAL LUG, SOLDER, FLAT
2		54	1008024-2	WASHER, INSULATOR
2		53	1008021-1	BUSHING, INSULATOR
2		52	1008024-1	WASHER, INSULATOR
╳		REF	1010025	SCHEMATIC
2		51	1008540-2	GASKET, CONNECTOR MINIATURE
1		50	1008540-3	GASKET, CONNECTOR MINIATURE
AR		49	1006776-20	INSULATION SLEEVING ELECTRICAL
~~2~~		~~48~~	~~MS35338-81~~	~~WASHER, LOCK~~
~~2~~		~~47~~	~~1008070-9~~	~~WASHER, FLAT~~
1		46	MS35338-78	WASHER, LOCK
1		45	1008070-5	WASHER, FLAT
1		44	MS 35234-22	SCREW, PAN HEAD
AR		43	1006776-22	INSULATION SLEEVING
AR		42	1006776-21	INSULATION SLEEVING
AR		41	1006757-9	WIRE .032 DIA
AR		40	1006757-8	WIRE .020 DIA
AR		39	1006757-1	RIBBON .010 X .020
1		38	1010339	TRANSFORMER
1		37	1010323	TRANSFORMER
2		36	1010398-2	TRANSISTOR
1		35	1010376-4	TRANSISTOR
1		34	1010273-2	TRANSISTOR
1		33	1006752	TRANSISTOR
6		32	1010385	SEMICONDUTOR DEVICE DIODE
~~2~~		~~31~~	~~1010322-001~~	~~SEMICONDUCTOR DEVICE DIODE~~
1		30	1010372-22	SEMICONDUCTOR DEVICE, DIODE
2		29	1010410-13	CAPACITOR FIXED
5		28	1010438-1	CAPACITOR FIXED
1		27	1006789-002	CAPACITOR FIXED
2		26	1006771-30	CAPACITOR FIXED
2		25	1010316-40	CAPACITOR, FIXED
2		24	1010369-141	RESISTOR, FIXED
2		23	1010364-381	RESISTOR, FIXTED
2		22	1010363-557	RESISTOR, FIXED
2		21	1006750-74	RESISTOR, FIXED
1		20	1006750-66	RESISTOR, FIXED
3		19	1006750-56	RESISTOR, FIXED
1		18	1006750-49	RESISTOR, FIXED
2		17	1006750-19	RESISTOR, FIXED
2		16	1008025-2	INSULATOR, BUSHING
1		15	1008025-1	INSULATOR, BUSHING
2		14	1008021-2	BUSHING, INSULATOR
2		13	1008071-5	WASHER, FLAT
2		12	1008024-4	WASHER, INSULATOR
2		11	1008024-3	WASHER, INSULATOR
2		10	MS20341-416B	NUT
2		9	MS20341-10B	NUT
1		8	MS20341-4A	NUT
10		7	1006775	INSULATOR
10		6	1006782-5	CONTACT, WRAPOST-MALE
1		5	1015697	INSULATOR
1		4	1015696	INSULATOR
1		3	1015695	INSULATOR
1		2	1015694	INSULATOR
~~1~~		~~1~~	~~1015693~~	~~HEATSINK~~

NEXT ASSY	USED ON	APPLICABLE DASH NO
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS ±.005 ±.02 ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

M.I.T.
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN DATE 13 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

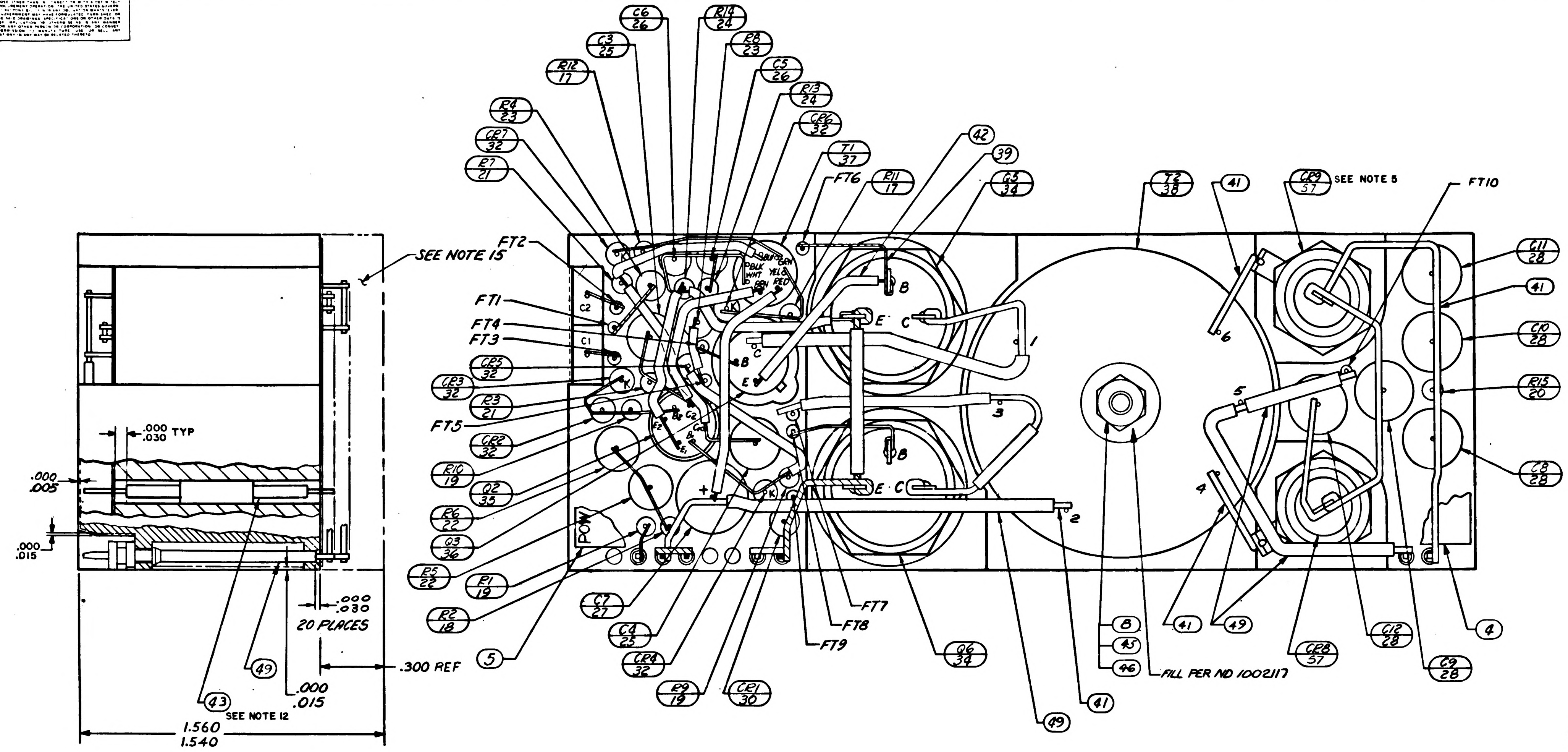
POWER SUPPLY, -28 VDC
MODULE ASSY

CODE IDENT NO 80230
SIZE E
1007542
SCALE 2:1
SHEET 1 OF 2

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17314		15 MAR 65	RJJ
B		REVISED PER TDRR 18104		12 APR 65	EF
C		REVISED PER TDRR 19404		2 JUN 65	EF
D		REVISED PER TDRR 19436		3 JUN 65	HCK PJ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43
SEE NOTE 12
49
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C6 26
R14 24
C3 25
R8 23
R12 17
C5 26
R4 23
R13 24
CR7 32
CR6 32
R7 21
T1 37
FT6
R11 17
42
39
Q5 34
T2 38
41
CR9 57
SEE NOTE 5
FT10
C11 28
41
C10 28
R15 20
C8 28
FT2
FT1
FT4
FT3
CR5 32
CR3 32
R3 21
FT5
CR2 32
R10 19
Q2 35
R6 22
Q3 36
R5 22
R1 19
R2 18
5
C7 27
C4 25
CR4 32
R9 19
CR1 30
FT7
FT8
FT9
Q6 34
49
41
8
45
46
FILL PER ND 1002117
41
49
CR8 57
C12 28
C9 28
4
C1
C2
POW
B
E
C
K
BLU
GRN
BLK
WHT
YEL
BRN
RED
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2
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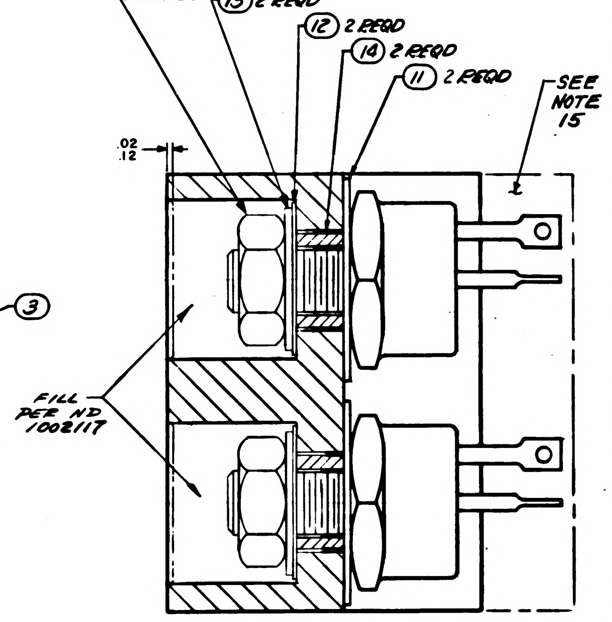
4
5
6

VIEW A-A
BEFORE ENCAPSULATION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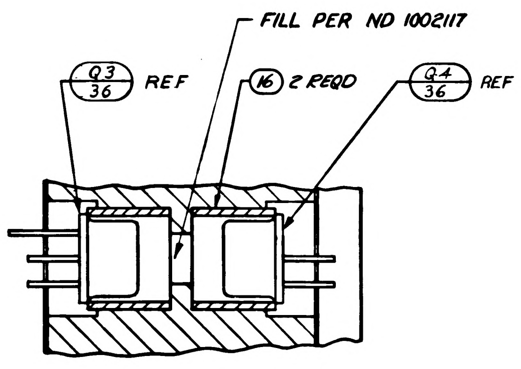
SEE NOTE 8
13 2 REQD
12 2 REQD
14 2 REQD
11 2 REQD
SEE NOTE 15
.02 .12
FILL PER ND 1002117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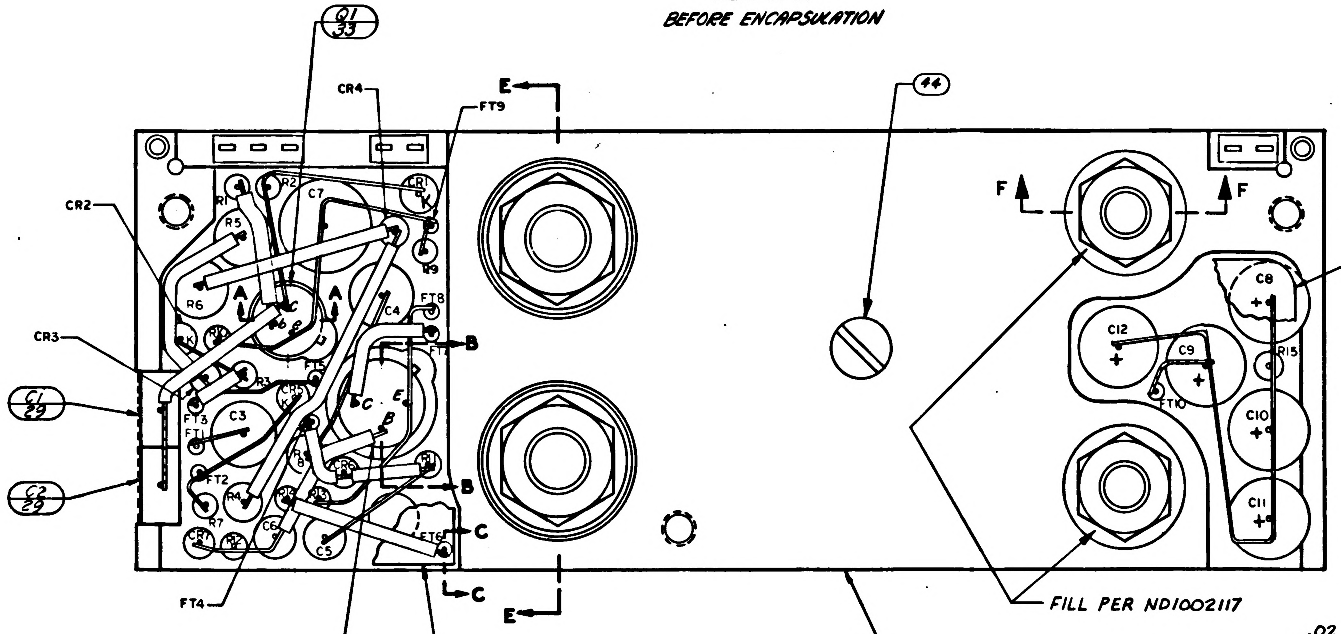
16 2 REQD
Q4 36 REF

PARTIAL SECTION B-B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CR4
FT9
E
44
F
F
3
CR2
CR3
C1 29
C2 29
FT4
B
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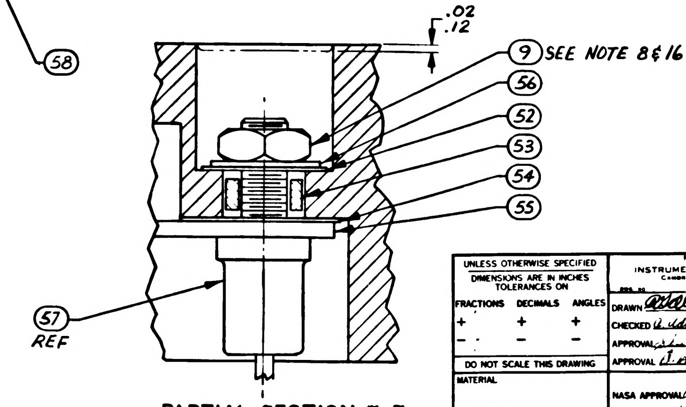
E
R1
R2
R3
R4
R5
R6
R7
R8
CR1
C3
C4
C5
C6
C7
FT1
FT2
FT3
FT6
FT8
C8
C9
C10
C11
C12
R15
FT10
FILL PER ND1002117
Q4 36
2
58

VIEW B-B
BEFORE ENCAPSULATION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9 SEE NOTE 8&16
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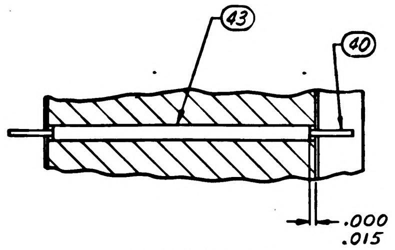
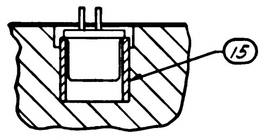
53
54
55
57 REF

SECTION E-E

PARTIAL SECTION F-F


43
40
.000 .015

PARTIAL SECTION C-C
TYPICAL FOR FT1 THRU FT10



PARTIAL SECTION A-A

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + − DECIMALS + − ANGLES + −	MIT INSTRUMENTATION LAB Cambridge Mass	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN R.W. Allen DATE 13 AUG 64 CHECKED A. Udovich 27 AUG 64 APPROVAL APPROVAL 0-5-64	POWER SUPPLY -28 VDC MODULE ASSEMBLY
MATERIAL	NASA APPROVAL	CODE IDENT NO. 80230 | SIZE E | 1007542
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 4:1 | SHEET 2 OF 2

1007542 D

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TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

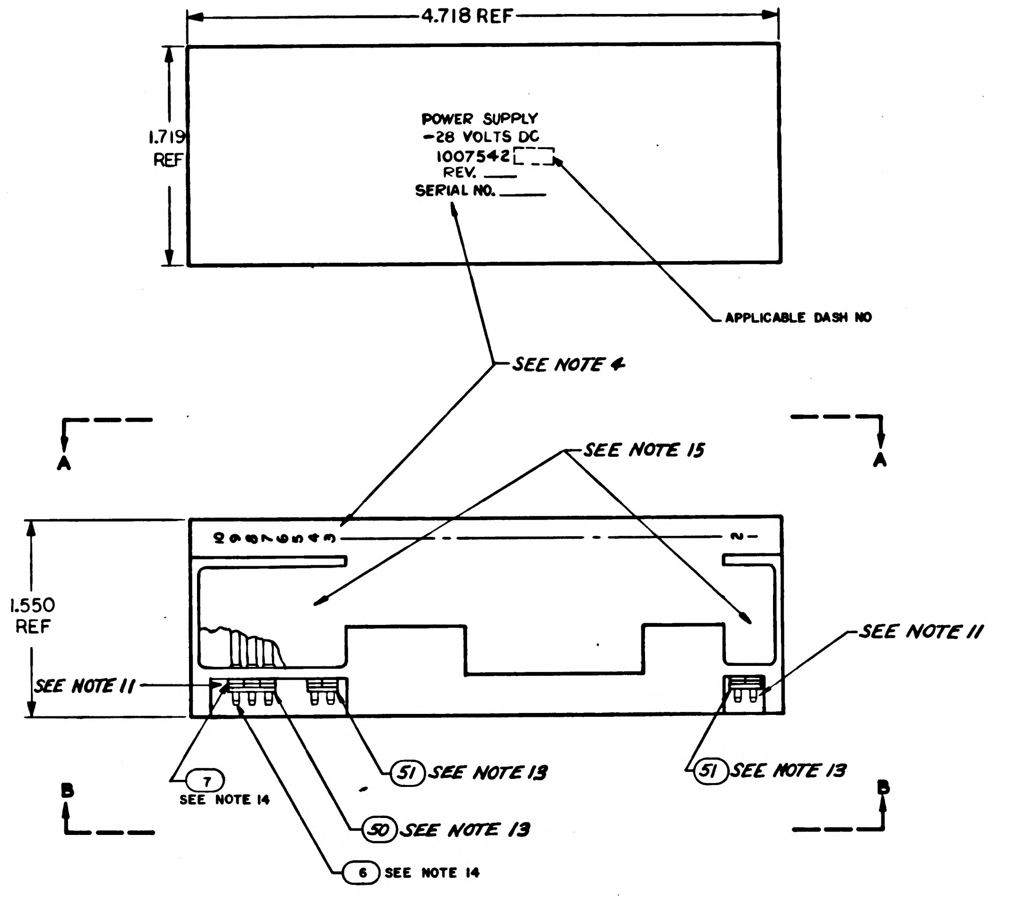
REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17314		15 MAR 65	RJJ
B		REVISED PER TDRR 18104		12 APR 65	
C		REVISED PER TDRR 19404		2 JUN 65	
D		REVISED PER TDRR 19436		3 JUN 65	CK
E		REVISED PER TDRR 19508		7 JUN 65	

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. PROCURE PER PS 1007042.
3. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND 1002009. METHOD H.
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. CONNECTIONS TO Q5, Q6, CR8, & CR9 SHALL BE MADE BY SOLDERING PER ND 1002071.
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
7. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
8. MOUNTING TORQUE SHALL BE AS FOLLOWS:
   - (57) 12 ±2 INCH POUNDS
   - (34) 24 ±2 INCH POUNDS
9. ON ITEMS ②, ③, ④ AND ⑤ BROKEN PATH INDICATES SLEEVING

   K : CATHODE SIDE OF DIODE
   FT( ): FEED THRU
   PLUS(+) : POSITIVE SIDE OF CAPACITOR
   C : COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C_2 : COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B_2: BASE
   E_2 : EMITTER
10. UNLESS OTHERWISE SPECIFIED:
    a. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    b. WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. AREA INDICATED MUST BE FREE OF ENCAPSULATING COMPOUND.
12. TYPICAL SLEEVING FOR: R1, R2, R3, R9 THRU R15 & CR2 THRU CR7.
13. BOND (50) AND (51) TO ⑦ PER ND 1002237.
14. ASSEMBLE PER ND1002136.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
17. APPLY SEALING COMPOUND PER MIL-S-22473, GRADE A.
18. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
20. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.



LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED			011	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
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			2		57	1010777-1	SEMICONDUCTOR DEVICE, DIODE
			2		56	1008071-4	WASHER, FLAT
			2		55	2008013-4	TERMINAL LUG, SOLDER, FLAT
			2		54	1008024-2	WASHER, INSULATOR
			2		53	1008021-1	BUSHING, INSULATOR
			2		52	1008024-1	WASHER, INSULATOR
			☒		REF	1010025	SCHEMATIC
			2		51	1008540-2	GASKET, CONNECTOR MINIATURE
			1		50	1008540-3	GASKET, CONNECTOR MINIATURE
			AR		49	1006776-20	INSULATION SLEEVING ELECTRICAL
			~~2~~		~~48~~	~~MS35338-81~~	~~WASHER, LOCK~~
			~~2~~		~~47~~	~~1008070-9~~	~~WASHER, FLAT~~
			1		46	MS35338-78	WASHER, LOCK
			1		45	1008070-5	WASHER, FLAT
			1		44	MS 35234-22	SCREW, PAN HEAD
			AR		43	1006776-22	INSULATION. SLEEVING
			AR		42	1006776-21	INSULATION SLEEVING
			AR		41	1006757-9	WIRE .032 DIA
			AR		40	1006757-8	WIRE .020 DIA
			AR		39	1006757-1	RIBBON .010 X.020
			1		38	1010339	TRANSFORMER
			1		37	1010323	TRANSFORMER
			2		36	1010398-2	TRANSISTOR
			1		35	1010376-4	TRANSISTOR
			1		34	1010273-2	TRANSISTOR
			1		33	1006752	TRANSISTOR
			6		32	1010385	SEMICONDUTOR DEVICE DIODE
			~~2~~		~~31~~	~~1010322-001~~	~~SEMICONDUCTOR DEVICE DIODE~~
			1		30	1010372-22	SEMICONDUCTOR DEVICE, DIODE
			2		29	1010410-13	CAPACITOR FIXED
			5		28	1010438-1	CAPACITOR FIXED
			1		27	1006789-002	CAPACITOR FIXED
			2		26	1006771-30	CAPACITOR FIXED
			2		25	1010316-40	CAPACITOR, FIXED
			2		24	1010369-141	RESISTOR, FIXED
			2		23	1010364-381	RESISTOR, FIXTED
			2		22	1010363-557	RESISTOR, FIXED
			2		21	1006750-74	RESISTOR, FIXED
			1		20	1006750-66	RESISTOR, FIXED
			3		19	1006750-56	RESISTOR, FIXED
			1		18	1006750-49	RESISTOR, FIXED
			2		17	1006750-19	RESISTOR, FIXED
			2		16	1008025-2	INSULATOR, BUSHING
			1		15	1008025-1	INSULATOR, BUSHING
			2		14	1008021-2	BUSHING, INSULATOR
			2		13	1008071-5	WASHER, FLAT
			2		12	1008024-4	WASHER, INSULATOR
			2		11	1008024-3	WASHER, INSULATOR
			2		10	MS20341-416B	NUT
			2		9	MS20341-10B	NUT.
			1		8	MS20341-4A	NUT
			10		7	1006775	INSULATOR
			10		6	1006782-5	CONTACT, WRAPOST-MALE
			~~1~~		~~5~~	~~1015697~~	~~INSULATOR~~
			~~1~~		~~4~~	~~1015696~~	~~INSULATOR~~
			~~1~~		~~3~~	~~1015695~~	~~INSULATOR~~
			~~1~~		~~2~~	~~1015694~~	~~INSULATOR~~
			~~1~~		~~1~~	~~1015693~~	~~HEATSINK~~

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS ±.005 ±.02 ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN DATE 13 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL 11-5-64
NASA APPROVAL 12-9-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLY, -28 VDC
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007542
SCALE 2:1
SHEET 1 OF 2

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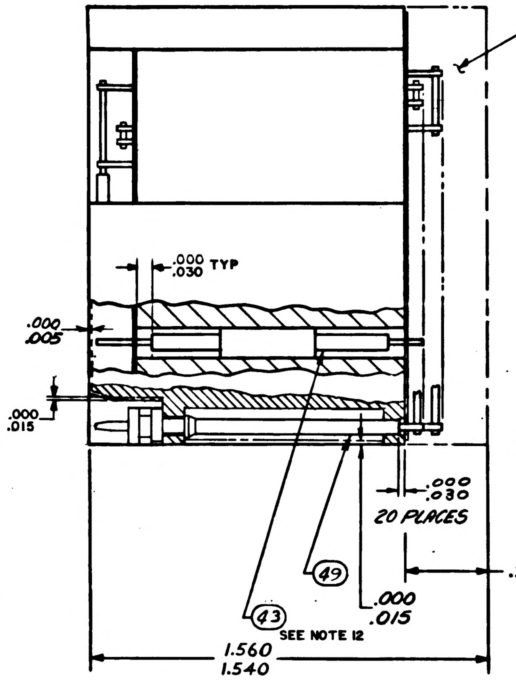
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17314		15 MAR 65	RJJ
B		REVISED PER TDRR 18…		1 APR 65	
C		REVISED PER TDRR 1940…		2 JUN 65	
D		REVISED PER TDRR 1943…		3 JUN 65	HCK
E		REVISED PER TDRR 19508		7 JUN 65	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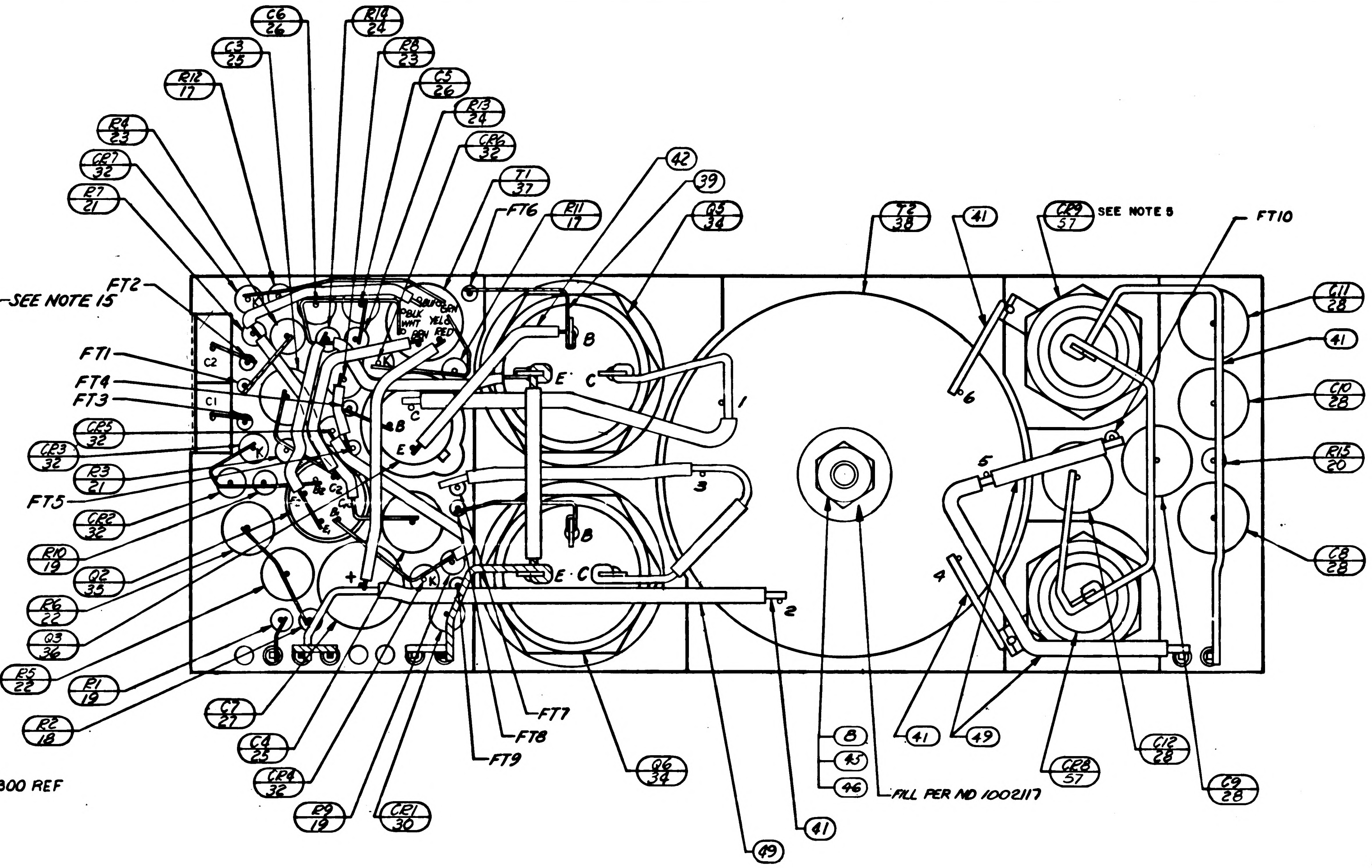
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FT2
FT6
R11 17
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39
Q5 34
T2 38
41
CR9 37
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FT1
FT4
FT3
CR5 32
CR3 32
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FT5
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R6 22
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R5 22
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R2 18
C7 27
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R9 19
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FT7
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FILL PER ND 1002117
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CR8 37
C12 28
C9 28
49
41
C11 28
41
C10 28
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E
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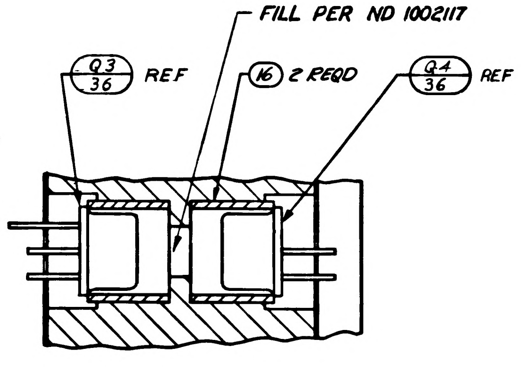
VIEW A-A

BEFORE ENCAPSULATION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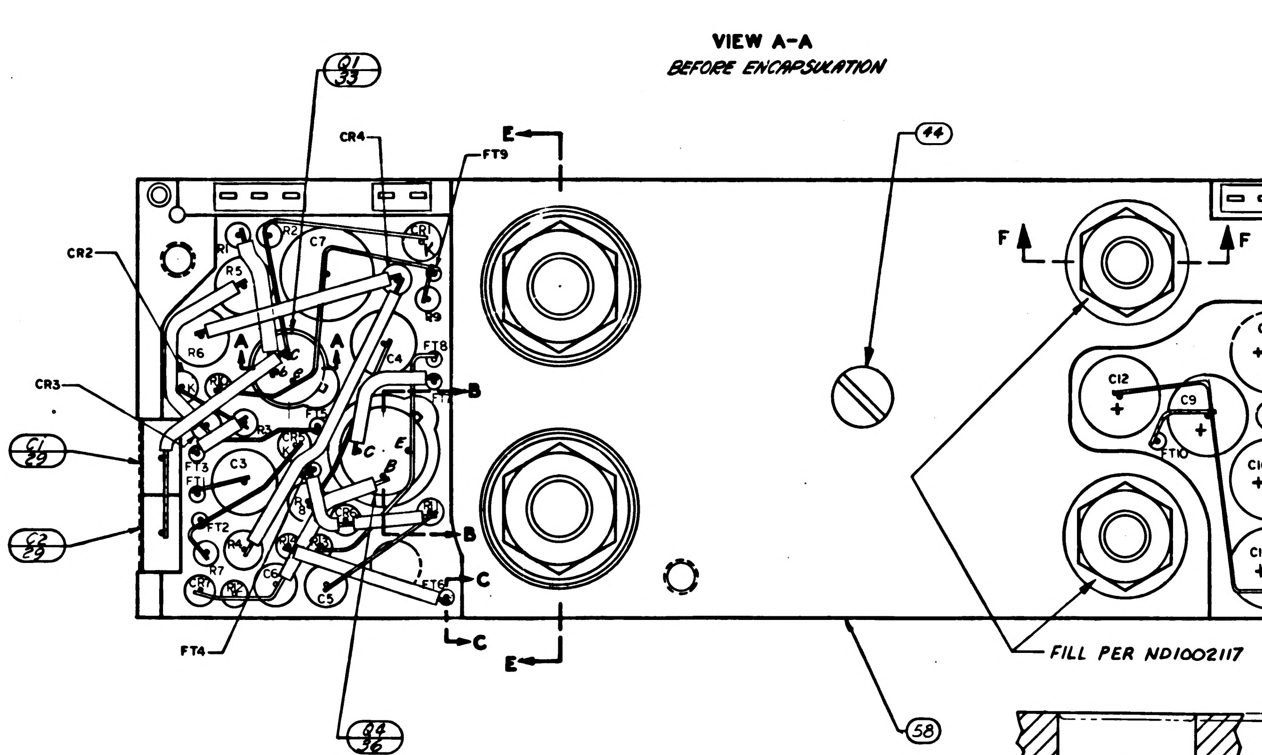
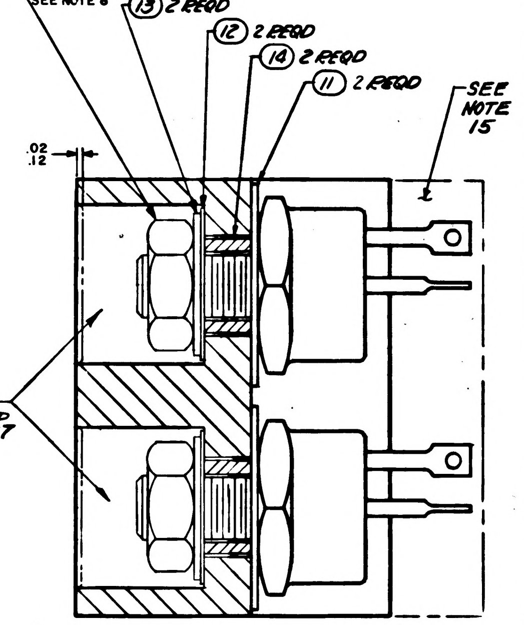
Q4 36 REF

PARTIAL SECTION B-B


Q1 33
CR4
E
FT9
44
CR2
CR3
C1 29
C2 29
FT4
Q4 36
F
F
C7
R1
R2
R5
R6
CR1
R9
FT8
C4
B
B
C
C3
FT1
FT2
FT3
FT6
R3
R4
R7
C6
C5
CR7
E
C
C8
C12
C9
R15
FT10
C10
C11
FILL PER ND1002117
58

VIEW B-B

BEFORE ENCAPSULATION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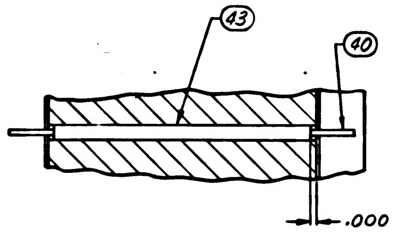
SEE NOTE 8
13 2 REQD
12 2 REQD
14 2 REQD
11 2 REQD
SEE NOTE 15
.02
.12
FILL PER ND 1002117

SECTION E-E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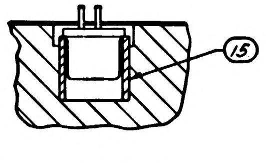
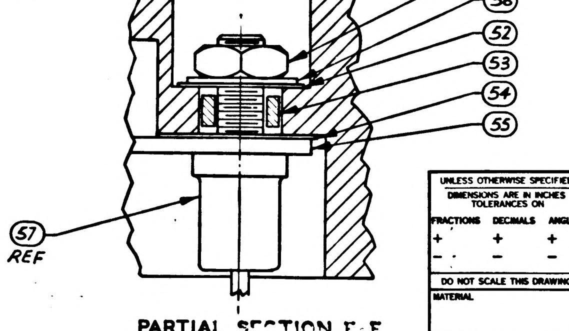
.015

PARTIAL SECTION C-C

TYPICAL FOR FT1 THRU FT10



PARTIAL SECTION A-A


.02
.12
9 SEE NOTE 8 & 16
56
52
53
54
55
57 REF

PARTIAL SECTION F-F

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN DATE 13 AUG 64 CHECKED A. Udovich 27 AUG 64 APPROVAL APPROVAL 0-5-64	POWER SUPPLY -28 VDC MODULE ASSEMBLY
MATERIAL	NASA APPROVAL	CODE IDENT NO. 80230 · SIZE E · 1007542
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 4:1 · SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 17314		15 MAR 65	RJJ
B		REVISED PER TDRR 18104		12 APR 65	
C		REVISED PER TDRR 19404		2 JUN 65	
D		REVISED PER TDRR 19436		3 JUN 65	CA
E		REVISED PER TDRR 19508		7 JUN 65	
F		REVISED PER TDRR 20 43		9 JUN 65	RC

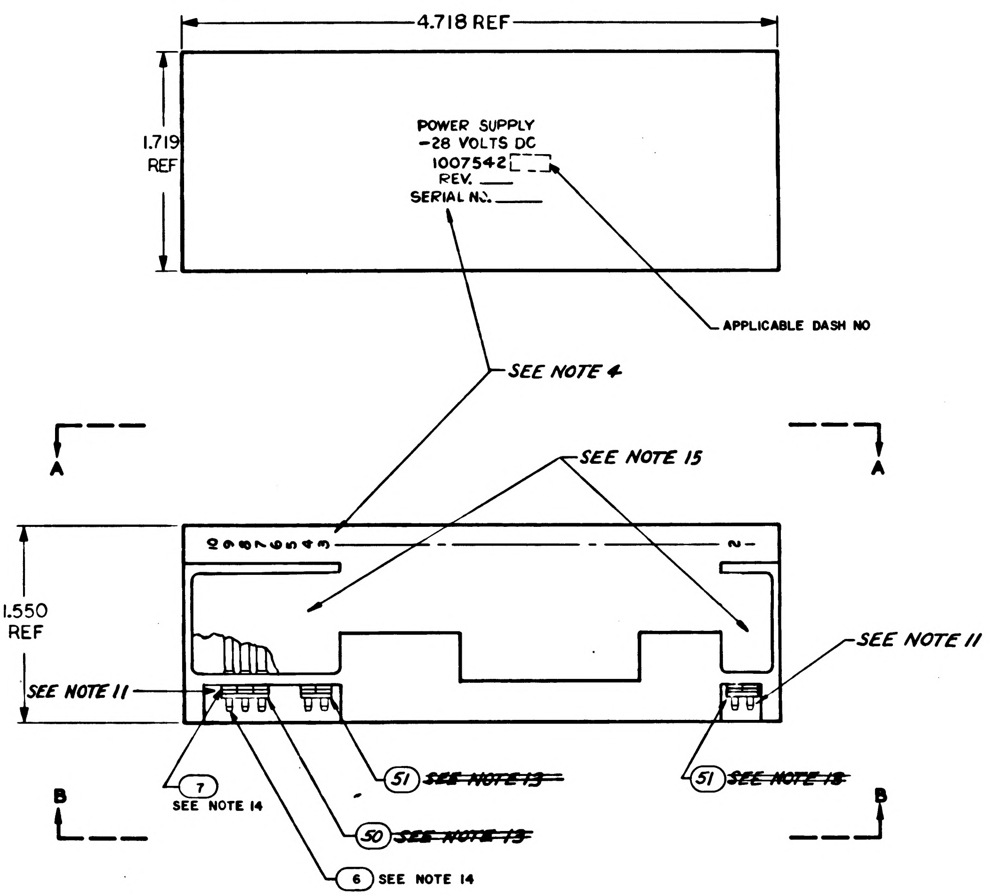
TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. PROCURE PER PS 1007042.
3. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND 1002009. METHOD H.
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. CONNECTIONS TO Q5, Q6, CR8, & CR9 SHALL BE MADE BY SOLDERING PER ND 1002071.
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
7. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
8. MOUNTING TORQUE SHALL BE AS FOLLOWS:
   - (5) 12 ± 2 INCH POUNDS
   - (34) 24 ± 2 INCH POUNDS
9. ON ITEMS (2), (3), (4) AND (5) BROKEN PATH INDICATES SLEEVING

   K : CATHODE SIDE OF DIODE
   FT( ): FEED THRU
   PLUS(+) : POSITIVE SIDE OF CAPACITOR
   C : COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C_2 : COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B_2: BASE
   E_2 : EMITTER
10. UNLESS OTHERWISE SPECIFIED:
    a. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    b. WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. AREA INDICATED MUST BE FREE OF ENCAPSULATING COMPOUND.
12. TYPICAL SLEEVING FOR: R1, R2, R3, R9 THRU R15 & CR2 THRU CR7.
13. ~~BOND (50) AND (51) TO (7) PER ND 1002237.~~
14. ASSEMBLE PER ND1002136.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
17. APPLY SEALING COMPOUND PER MIL-S-22473, GRADE A.
18. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
20. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.



LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED			011	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			1		58	1008309	HEATSINK
			2		57	1010777-1	SEMICONDUCTOR DEVICE, DIODE
			2		56	1008071-4	WASHER, FLAT
			2		55	2008013-4	TERMINAL LUG, SOLDER, FLAT
			2		54	1008024-2	WASHER, INSULATOR
			2		53	1008021-1	BUSHING, INSULATOR
			2		52	1008024-1	WASHER, INSULATOR
			☒		REF	1010025	SCHEMATIC
			2		51	1008540-2	GASKET, CONNECTOR MINIATURE
			1		50	1008540-3	GASKET, CONNECTOR MINIATURE
			AR		49	1006776-20	INSULATION SLEEVING ELECTRICAL
			~~2~~		~~48~~	~~MS 35338-81~~	~~WASHER, LOCK~~
			~~2~~		~~47~~	~~1008070-9~~	~~WASHER, FLAT~~
			1		46	MS35338-78	WASHER, LOCK
			1		45	1008070-5	WASHER, FLAT
			1		44	MS 35234-22	SCREW, PAN HEAD
			AR		43	1006776-22	INSULATION SLEEVING
			AR		42	1006776-21	INSULATION SLEEVING
			AR		41	1006757-9	WIRE .032 DIA
			AR		40	1006757-8	WIRE .020 DIA
			AR		39	1006757-1	RIBBON .010 X .020
			1		38	1010339	TRANSFORMER
			1		37	1010323	TRANSFORMER
			2		36	1010398-2	TRANSISTOR
			1		35	1010376-4	TRANSISTOR
			1		34	1010273-2	TRANSISTOR
			1		33	1006752	TRANSISTOR
			6		32	1010385	SEMICONDUTOR DEVICE DIODE
			~~2~~		~~31~~	~~1010322-001~~	~~SEMICONDUCTOR DEVICE DIODE~~
			1		30	1010372-22	SEMICONDUCTOR DEVICE, DIODE
			2		29	1010410-13	CAPACITOR FIXED
			5		28	1010438-1	CAPACITOR FIXED
			1		27	1006789-002	CAPACITOR FIXED
			2		26	1006777-30	CAPACITOR FIXED
			2		25	1010316-40	CAPACITOR, FIXED
			2		24	1010369-141	RESISTOR, FIXED
			2		23	1010364-381	RESISTOR, FIXTED
			2		22	1010363-557	RESISTOR, FIXED
			2		21	1006750-74	RESISTOR, FIXED
			1		20	1006750-66	RESISTOR, FIXED
			3		19	1006750-56	RESISTOR, FIXED
			1		18	1006750-49	RESISTOR, FIXED
			2		17	1006750-19	RESISTOR, FIXED
			2		16	1008025-2	INSULATOR, BUSHING
			1		15	1008025-1	INSULATOR, BUSHING
			2		14	1008021-2	BUSHING, INSULATOR
			2		13	1008071-5	WASHER, FLAT
			2		12	1008024-4	WASHER, INSULATOR
			2		11	1008024-3	WASHER, INSULATOR
			2		10	MS20341-416B	NUT
			2		9	MS20341-10B	NUT
			1		8	MS20341-4A	NUT
			10		7	1006775	INSULATOR
			10		6	1006782-5	CONTACT, WRAPOST-MALE
			~~1~~		~~5~~	~~1015697~~	~~INSULATOR~~
			~~1~~		~~4~~	~~1015696~~	~~INSULATOR~~
			~~1~~		~~3~~	~~1015695~~	~~INSULATOR~~
			~~1~~		~~2~~	~~1015694~~	~~INSULATOR~~
			~~1~~		~~1~~	~~1015693~~	~~HEATSINK~~

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + - DECIMALS ±.005 ±.02 ANGLES + -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN A. Allison DATE 13 AUG 64
CHECKED A. Womack 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

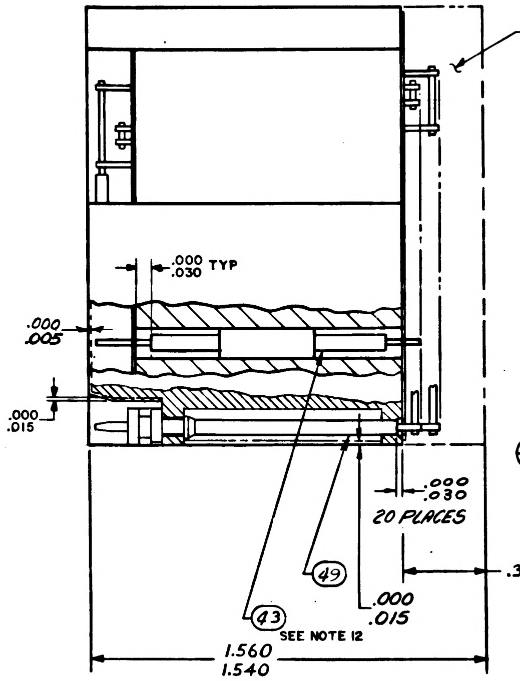
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLY, -28 VDC
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007542
SCALE 2:1
SHEET 1 OF 2

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17314		15 MAR 65	RJJ
B		REVISED PER TDRR 18104		12 APR 65	
C		REVISED PER TDRR 19404		2 JUN 65	
D		REVISED PER TDRR 19436		3 JUN 65	
E		REVISED PER TDRR 19508		7 JUN 65	
F		REVISION STATUS CHANGED		19 JUN 65	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.000 .005
.000 .015
.000 .030
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.300 REF
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SEE NOTE 12
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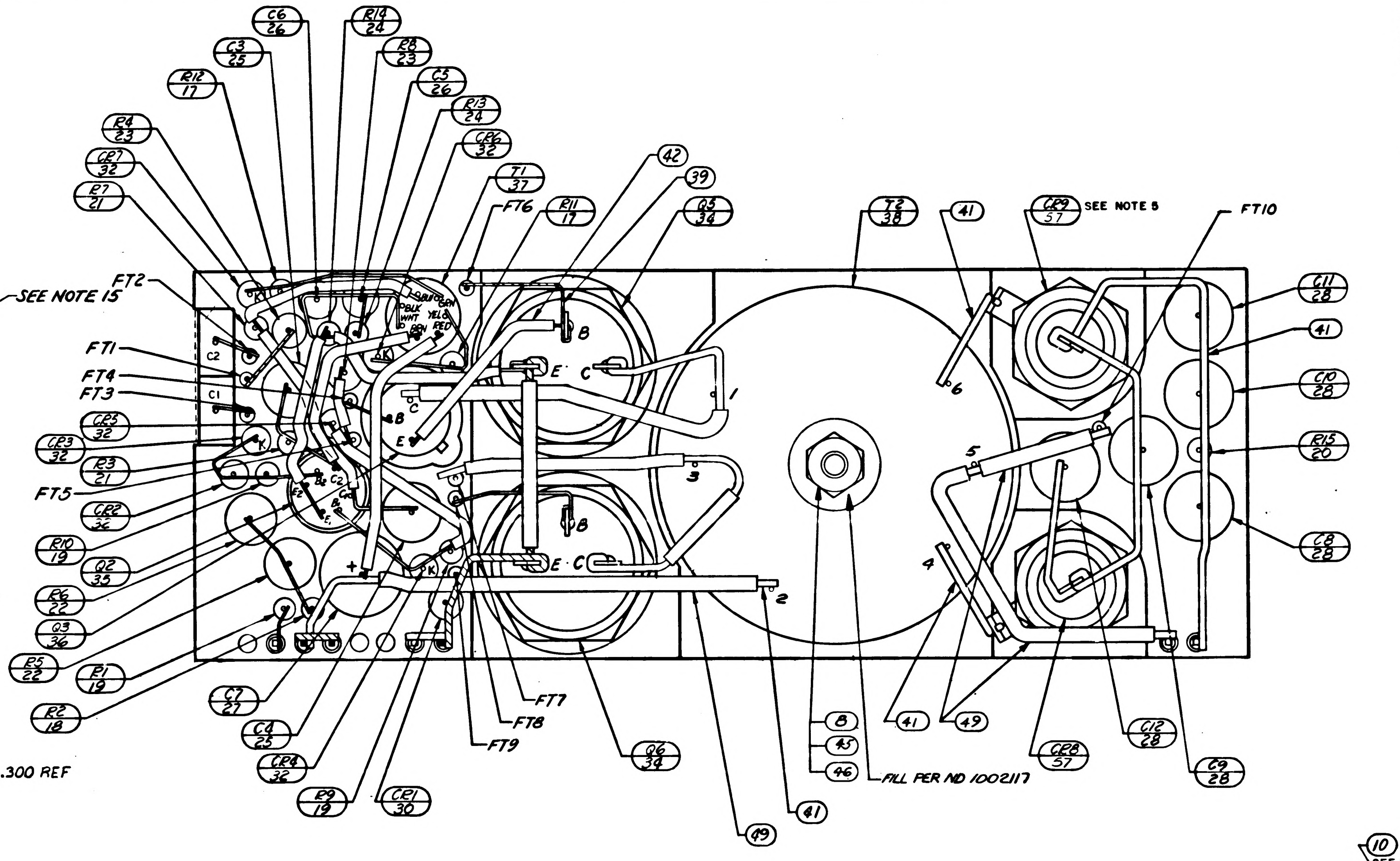
1.540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C5 26
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CR7 32
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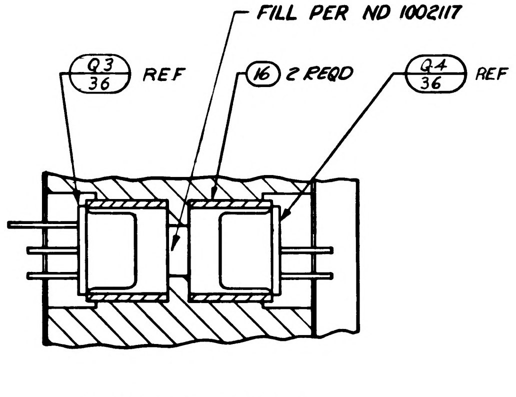
FT6
R11 17
42
39
Q5 34
T2 38
41
CR9 37
SEE NOTE 8
FT10
C11 28
41
C10 28
R15 20
C8 28
FT2
FT1
FT4
FT3
CR5 32
CR3 32
R3 21
FT5
CR2 36
R10 19
Q2 35
R6 22
Q3 36
R5 22
R1 19
R2 18
C7 27
C4 25
CR4 36
R9 19
CR1 30
FT7
FT8
FT9
Q6 34
8
45
46
FILL PER ND 1002117
41
49
41
49
CR8 37
C12 28
C9 28
B
E
C
1
2
3
4
5
6

VIEW A-A
BEFORE ENCAPSULATION


FILL PER ND 1002117
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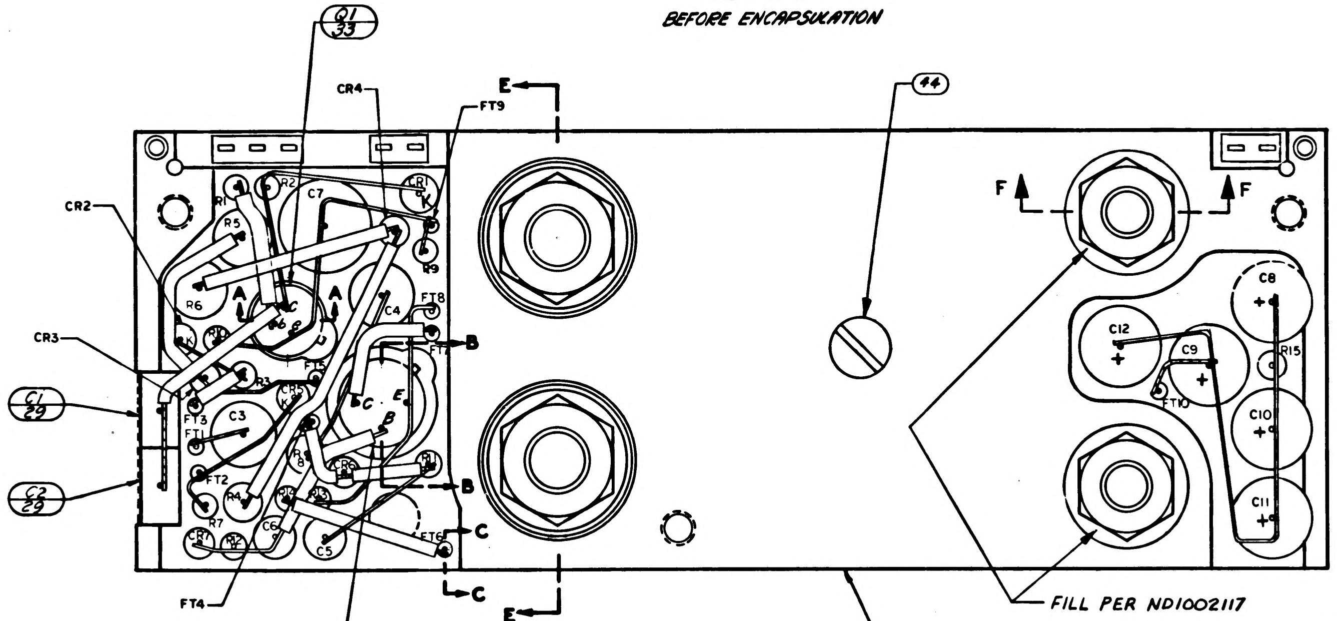
16 2 REQD
Q4 36
REF

PARTIAL SECTION B-B


Q1 33
CR4
FT9
E
44
CR2
CR3
C1 29
C2 29
FT4
F
F
B
B
C
C
E
FILL PER ND1002117
R1
R2
R5
R6
C7
CR1
R9
C4
FT8
FT3
FT1
C3
FT2
R4
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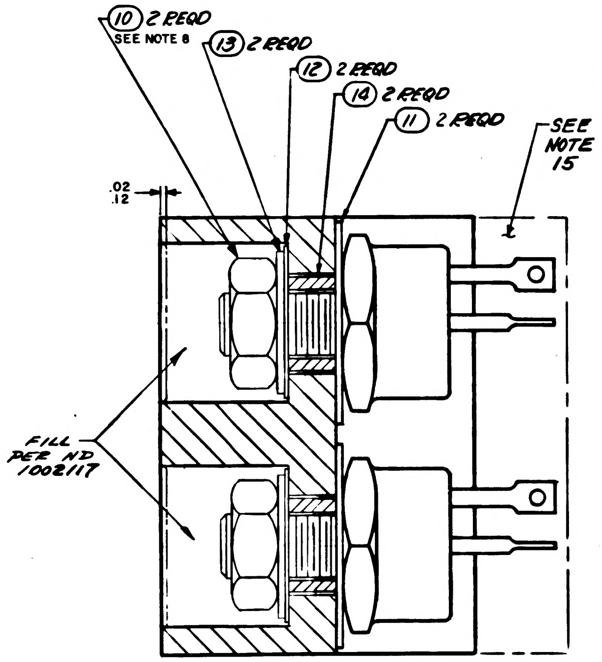
C8
R15
FT10
C10
C11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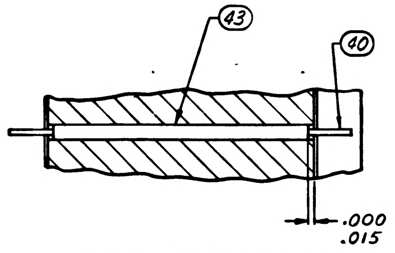
SEE NOTE 8
13 2 REQD
12 2 REQD
14 2 REQD
11 2 REQD
SEE NOTE 15
.02 .12
FILL PER ND 1002117

SECTION E-E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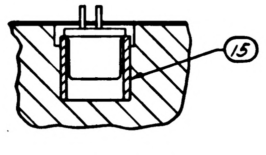
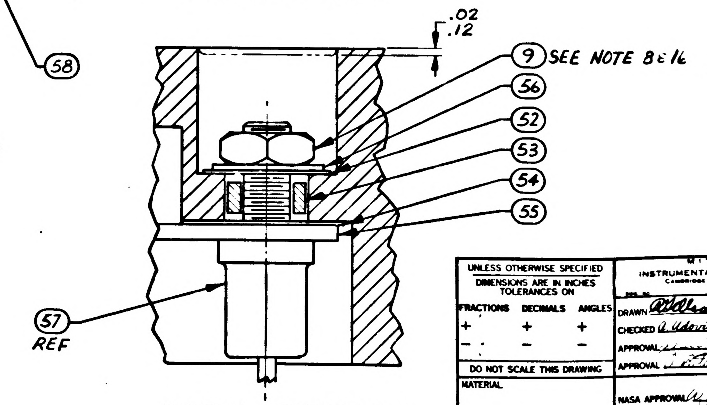
.000 .015

PARTIAL SECTION C-C
TYPICAL FOR FT1 THRU FT10



PARTIAL SECTION A-A

VIEW B-B
BEFORE ENCAPSULATION


58
.02 .12
9 SEE NOTE 8 & 16
56
52
53
54
55
57 REF

PARTIAL SECTION F-F

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
FRACTIONS ± DECIMALS ± ANGLES ±	DRAWN A.W.Olson DATE 13 AUG 64 CHECKED A. Udovich 27 AUG 64 APPROVAL APPROVAL	POWER SUPPLY -28 VDC MODULE ASSEMBLY
DO NOT SCALE THIS DRAWING		
MATERIAL	NASA APPROVAL	CODE IDENT NO. 80230 SIZE E 1007542
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 4:1 SHEET 2 OF 2

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TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17314		15 MAR 65	RJJ
B		REVISED PER TDRR 18104		[illegible] 65	[illegible]
C		REVISED PER TDRR 19404		[illegible] 65	[illegible]
D		REVISED PER TDRR 19436		3 JUN 65	HCK
E		REVISED PER TDRR 19508		[illegible] 65	[illegible]
F		REVISED PER TDRR 20143		[illegible] 65	[illegible]
G		REVISED PER TDRR 2 278		3 [illegible] 65	[illegible]

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. PROCURE PER PS 1007042.
3. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND 1002009. METHOD H.
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. CONNECTIONS TO Q5, Q6, CR8, & CR9 SHALL BE MADE BY SOLDERING PER ND 1002071.
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7. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
8. MOUNTING TORQUE SHALL BE AS FOLLOWS:
   - (57) 12 ±2 INCH POUNDS
   - (34) 24 ±2 INCH POUNDS
9. ON ITEMS ②, ③, ④ AND ⑤ BROKEN PATH INDICATES SLEEVING

   K : CATHODE SIDE OF DIODE
   FT( ): FEED THRU
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   B : BASE ↓ ↓ ↓
   E : EMITTER
   C_2 : COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
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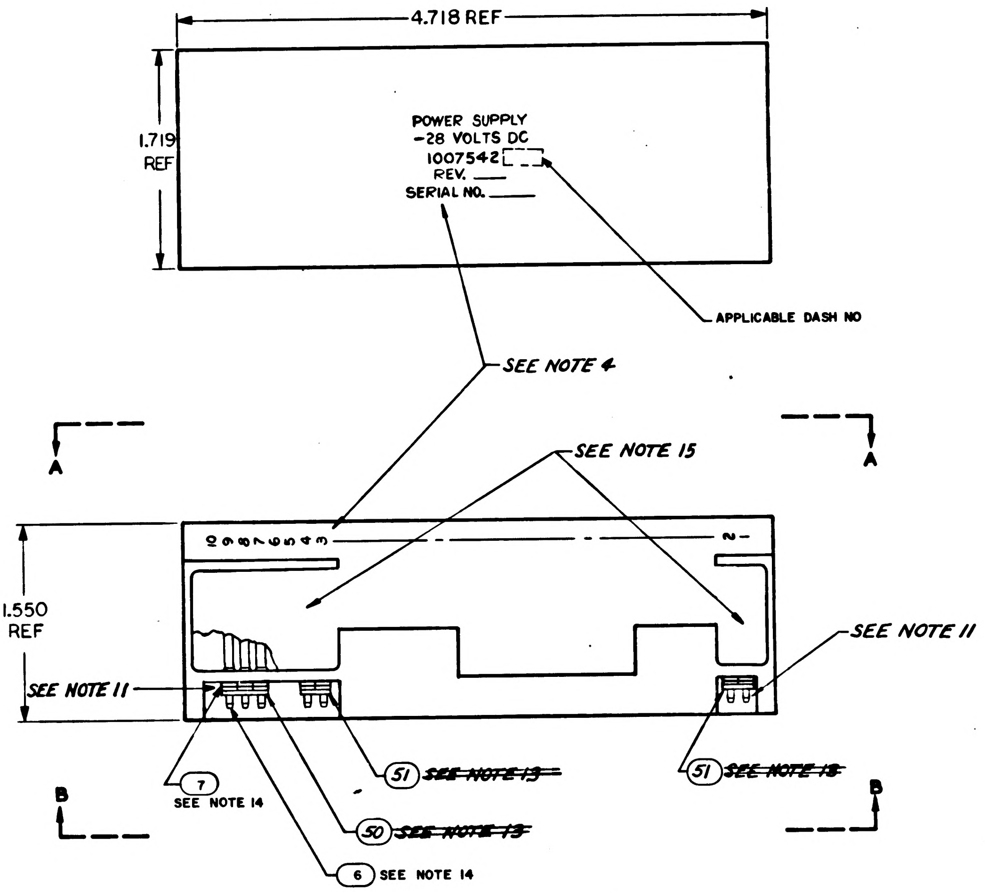
   E_2 : EMITTER
10. UNLESS OTHERWISE SPECIFIED:
    a. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    b. WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. AREA INDICATED MUST BE FREE OF ENCAPSULATING COMPOUND.
12. TYPICAL SLEEVING FOR: R1, R2, R3, R9 THRU R15 & CR2 THRU CR7.
13. ~~BOND (50) AND (51) TO ⑦ PER ND 1002237.~~
14. ASSEMBLE PER ND1002136.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
17. APPLY SEALING COMPOUND PER MIL-S-22473, GRADE A.
18. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
20. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.



			011	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			1		59	1010966-1	TRANSISTOR
			1		58	1008309	HEATSINK
			2		57	1010777-1	SEMICONDUCTOR DEVICE, DIODE
			2		56	1008071-4	WASHER, FLAT
			2		55	2008013-4	TERMINAL LUG, SOLDER, FLAT
			2		54	1008024-2	WASHER, INSULATOR
			2		53	1008021-1	BUSHING, INSULATOR
			2		52	1008024-1	WASHER, INSULATOR
			X		REF	1010025	SCHEMATIC
			2		51	1008540-2	GASKET, CONNECTOR MINIATURE
			1		50	1008540-3	GASKET, CONNECTOR MINIATURE
			AR		49	1006776-20	INSULATION SLEEVING ELECTRICAL
			~~2~~		~~48~~	~~MS 35338-81~~	~~WASHER, LOCK~~
			~~2~~		~~47~~	~~1008070-9~~	~~WASHER, FLAT~~
			1		46	MS35338-78	WASHER, LOCK
			1		45	1008070-5	WASHER, FLAT
			1		44	MS 35234-22	SCREW, PAN HEAD
			AR		43	1006776-22	INSULATION. SLEEVING
			AR		42	1006776-21	INSULATION SLEEVING
			AR		41	1006757-9	WIRE .032 DIA
			AR		40	1006757-8	WIRE .020 DIA
			AR		39	1006757-1	RIBBON .010 X .020
			1		38	1010339	TRANSFORMER
			1		37	1010323	TRANSFORMER
			2		36	1010398-2	TRANSISTOR
			1		35	1010376-4	TRANSISTOR
			1		34	1010273-2	TRANSISTOR
			~~1~~		~~33~~	~~1006752~~	~~TRANSISTOR~~
			6		32	1010385	SEMICONDUTOR DEVICE DIODE
			~~2~~		~~31~~	~~1010322-001~~	~~SEMICONDUCTOR DEVICE DIODE~~
			1		30	1010372-22	SEMICONDUCTOR DEVICE, DIODE
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			5		28	1010438-1	CAPACITOR FIXED
			1		27	1006789-002	CAPACITOR FIXED
			2		26	1006777-30	CAPACITOR FIXED
			2		25	1010316-40	CAPACITOR, FIXED
			2		24	1010369-141	RESISTOR, FIXED
			2		23	1010364-381	RESISTOR, FIXTED
			2		22	1010363-557	RESISTOR, FIXED
			2		21	1006750-74	RESISTOR, FIXED
			1		20	1006750-66	RESISTOR, FIXED
			3		19	1006750-56	RESISTOR, FIXED
			1		18	1006750-49	RESISTOR, FIXED
			2		17	1006750-19	RESISTOR, FIXED
			2		16	1008025-2	INSULATOR, BUSHING
			1		15	1008025-1	INSULATOR, BUSHING
			2		14	1008021-2	BUSHING, INSULATOR
			2		13	1008071-5	WASHER, FLAT
			2		12	1008024-4	WASHER, INSULATOR
			2		11	1008024-3	WASHER, INSULATOR
			2		10	MS20341-416B	NUT
			2		9	MS20341-10B	NUT
			1		8	MS20341-4A	NUT
			10		7	1006775	INSULATOR
			10		6	1006782-5	CONTACT, WRAPOST-MALE
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			~~1~~		~~4~~	~~1015696~~	~~INSULATOR~~
			~~1~~		~~3~~	~~1015695~~	~~INSULATOR~~
			~~1~~		~~2~~	~~1015694~~	~~INSULATOR~~
			~~1~~		~~1~~	~~1015693~~	~~HEATSINK~~
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ ±.005 +
- ±.02 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN A. Wilson DATE 13 AUG 64
CHECKED A. Udovich 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

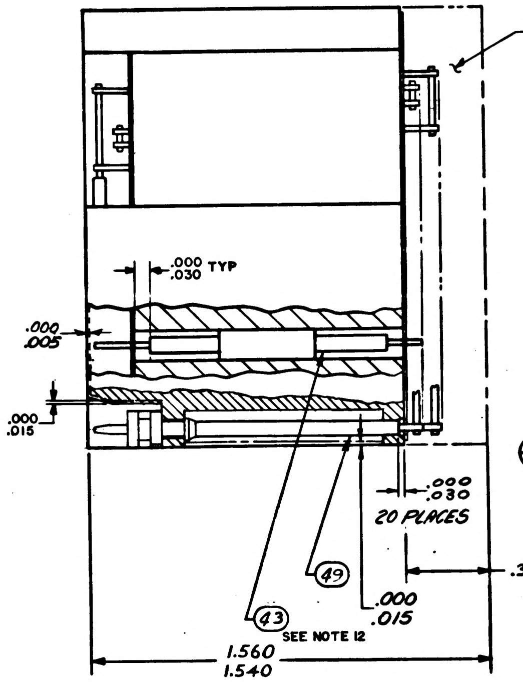
POWER SUPPLY, -28 VDC
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007542
SCALE 2:1
SHEET 1 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17314		15 MAR 65	RJJ
B		REVISED PER TDRR 18104		12 APR 65	
C		REVISED PER TDRR 19404		2 JUN 65	
D		REVISED PER TDRR 19436		3 JUN 65	HLA
E		REVISED PER TDRR 19508		7 JUN 65	
F		REVISION STATUS CHANGED		19 JUN 65	
G		REVISED PER TDRR 21278		31 JUL 65	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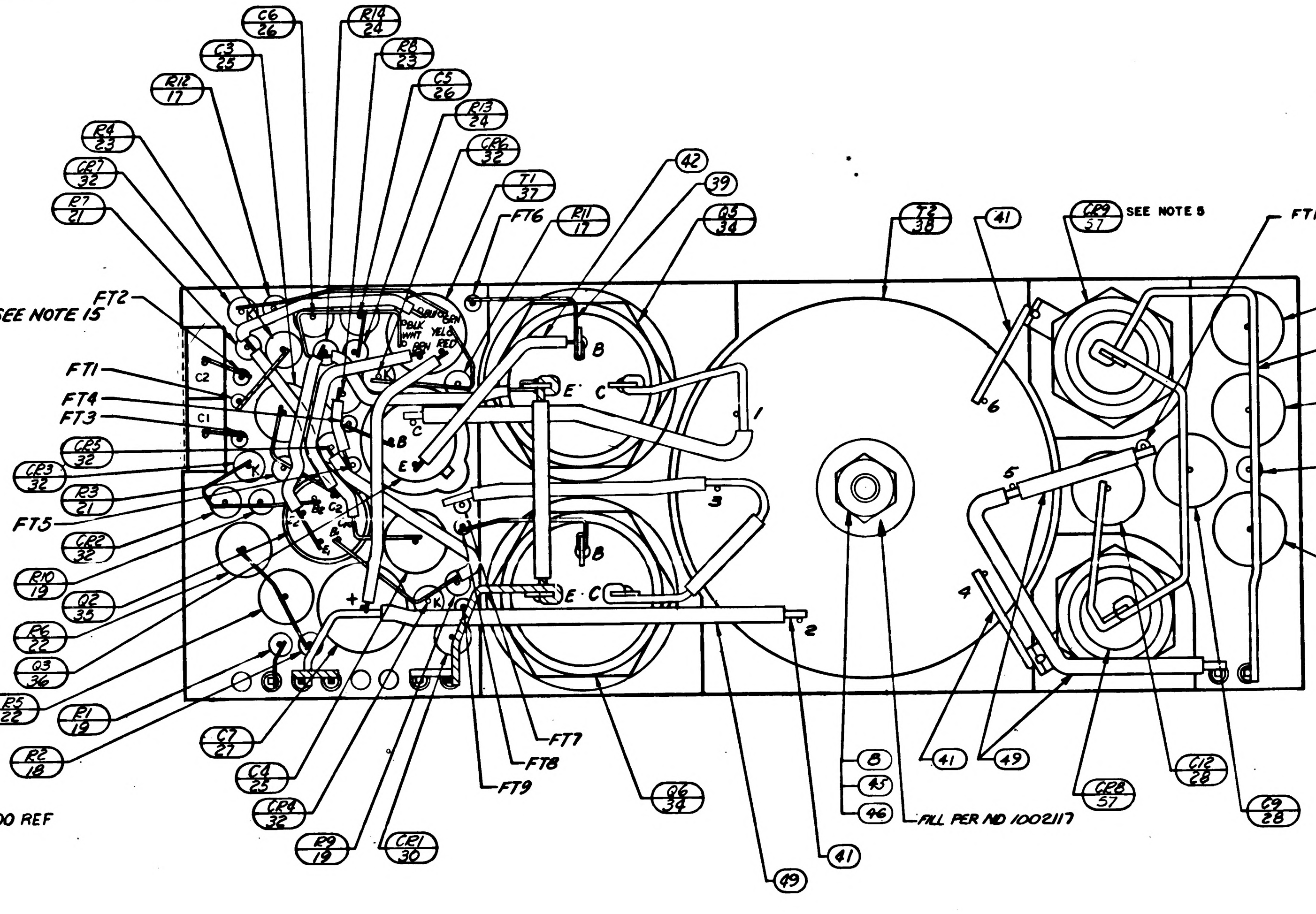
1.540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C3 25
R8 23
R12 17
C5 26
R13 24
R4 23
CR6 32
CR7 32
T1 37
R7 21
FT6
R11 17
42
39
Q5 34
T2 38
41
CR9 37
SEE NOTE 5
FT10
FT2
C11 28
FT1
41
FT4
FT3
C10 28
CR5 32
CR3 32
R15 20
R3 21
FT5
CR2 32
R10 19
Q2 35
R6 22
Q3 36
R5 22
P1 19
R2 18
C7 27
C4 25
CR4 32
R9 19
CR1 30
FT7
FT8
FT9
Q6 34
8
45
46
FILL PER ND 1002117
41
49
CR8 37
C12 28
C9 28
C8 28
49
41
C2
C1
B
E
C
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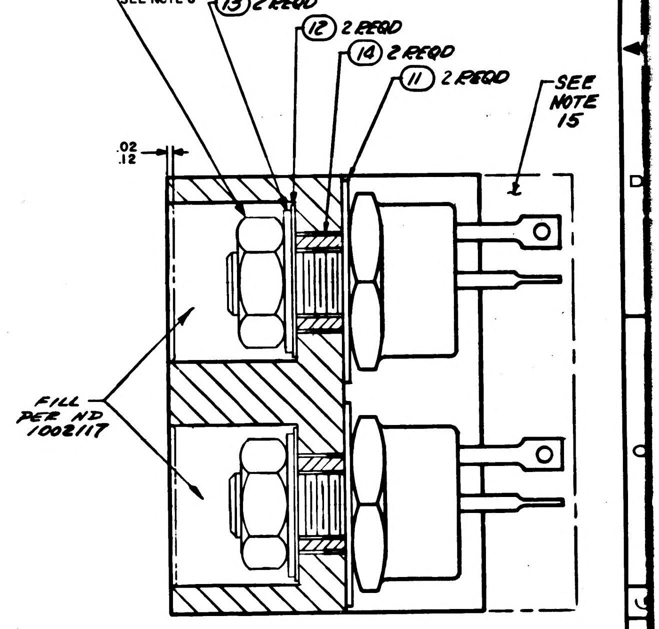
2
3
4
5
6

VIEW A-A
BEFORE ENCAPSULATION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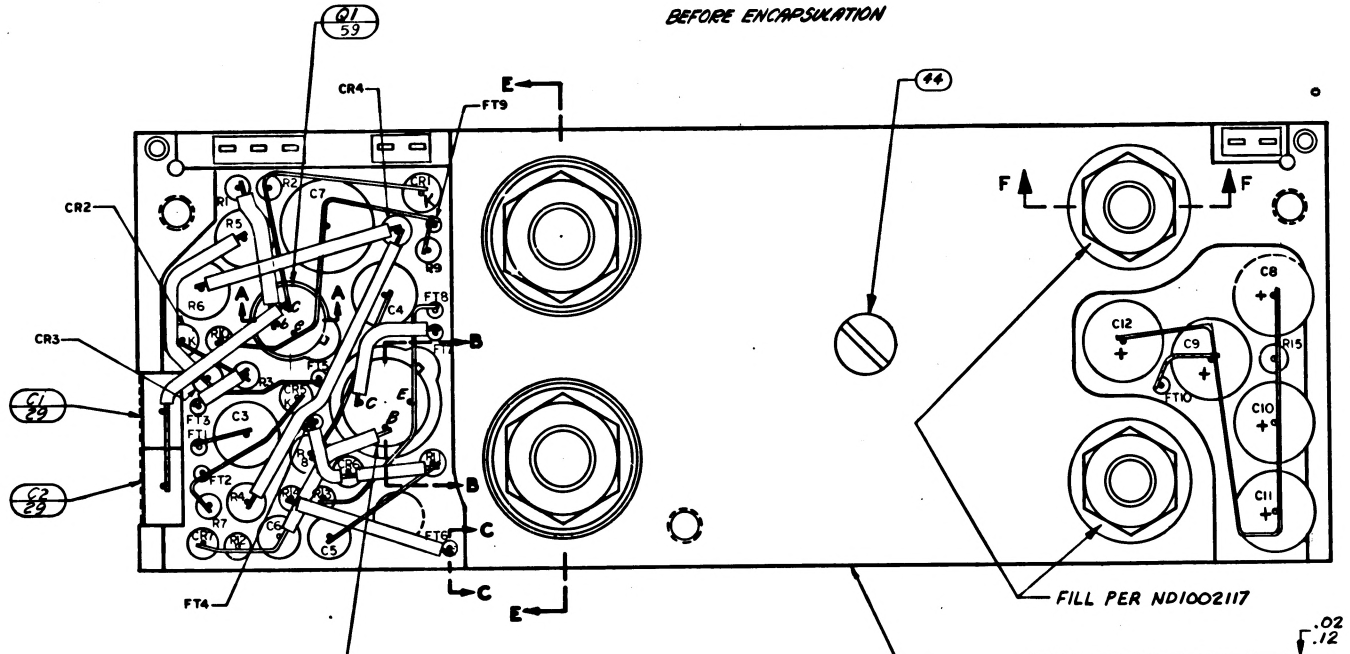
13 2 REQD
12 2 REQD
14 2 REQD
11 2 REQD
SEE NOTE 15
.02
.12
FILL PER ND 1002117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CR4
FT9
E
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CR2
CR3
C1 29
C2 29
FT4
Q4 36
F
F
C8
C12
C9
R15
C10
C11
FT10
B
B
C
C
E
R1
R2
R3
R4
R5
R6
R7
R8
R9
C3
C4
C5
C6
C7
CR1
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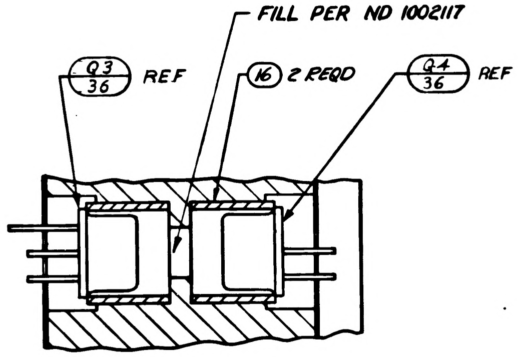
FT2
FT3
FT5
FT6
FT7
FT8
FILL PER ND1002117
58

VIEW B-B
BEFORE ENCAPSULATION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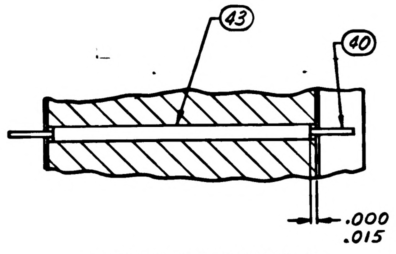
16 2 REQD
Q4 36 REF

PARTIAL SECTION B-B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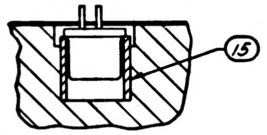
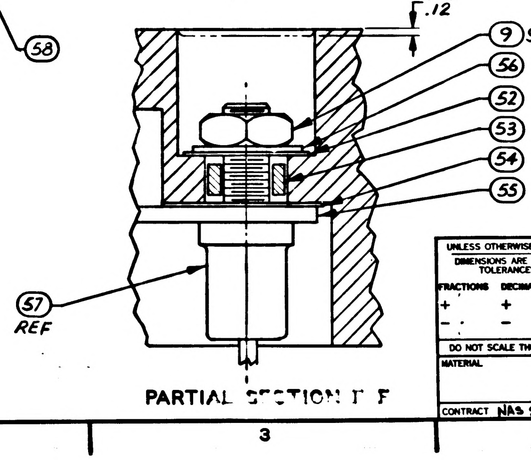
PARTIAL SECTION C-C
TYPICAL FOR FT1 THRU FT10



PARTIAL SECTION A-A


.02
.12
9 SEE NOTE 8 & 16
56
52
53
54
55
57 REF

PARTIAL SECTION F-F

SECTION E-E

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN 13 AUG 64 DATE CHECKED A. Udovich 27 AUG 64 APPROVAL APPROVAL 9-5-64	POWER SUPPLY -28 VDC MODULE ASSEMBLY
MATERIAL	NASA APPROVAL 10-6-64	CODE IDENT NO. 80230 | SIZE E | 1007542
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 4:1 | SHEET 2 OF 2

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

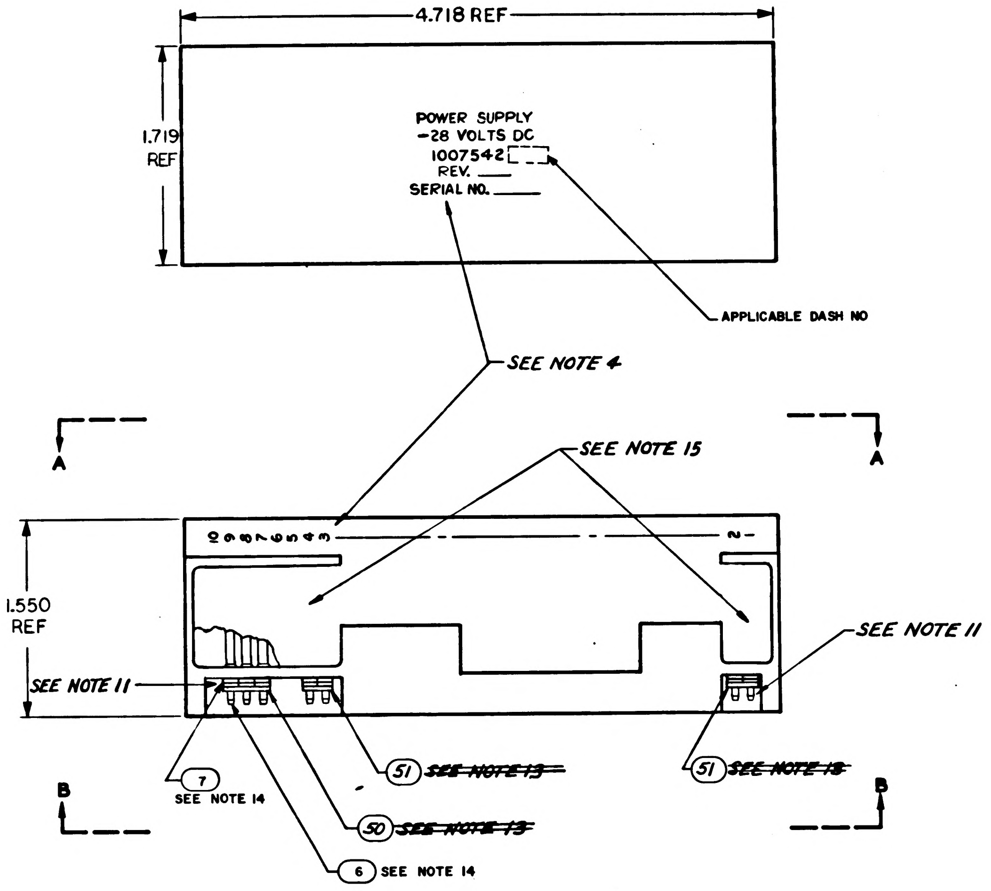
REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17314		15 MAR 65	RJJ
B		REVISED PER TDRR 18104		[illegible] 65	[illegible]
C		REVISED PER TDRR 19404		[illegible] 65	[illegible]
D		REVISED PER TDRR 19436		3 JUN 65	[illegible]
E		REVISED PER TDRR 19508		[illegible] 65	[illegible]
F		REVISED PER TDRR 20143		[illegible] 65	[illegible]
G		REVISED PER TDRR 21278		31 JUL 65	[illegible]
H		REVISED PER TDRR 21773		[illegible] 65	[illegible]

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. PROCURE PER PS 1007042.
3. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND 1002009. METHOD H.
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. CONNECTIONS TO Q5, Q6, CR8, & CR9 SHALL BE MADE BY SOLDERING PER ND 1002071.
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
7. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
8. MOUNTING TORQUE SHALL BE AS FOLLOWS:
   (57) 12 ±2 INCH POUNDS
   (34) 24 ±2 INCH POUNDS
9. ON ITEMS ②, ③, ④ AND ⑤ BROKEN PATH INDICATES SLEEVING

   K : CATHODE SIDE OF DIODE
   FT( ): FEED THRU
   PLUS(+): POSITIVE SIDE OF CAPACITOR
   C : COLLECTOR LEAD OF TRANSISTOR
   B: BASE ↓ ↓ ↓
   E: EMITTER
   C₂ : COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B₂: BASE ↓ ↓ ↓ ↓
   E₂: EMITTER
10. UNLESS OTHERWISE SPECIFIED:
    a. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    b. WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. AREA INDICATED MUST BE FREE OF ENCAPSULATING COMPOUND.
12. TYPICAL SLEEVING FOR: R1, R2, R3, R9 THRU R15 & CR2 THRU CR7.
13. ~~BOND (50) AND (51) TO ⑦ PER ND 1002237.~~
14. ASSEMBLE PER ND1002136.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
17. APPLY SEALING COMPOUND PER MIL-S-22473, GRADE A.
18. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
20. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.



LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1		59	1010966-1	TRANSISTOR
1		58	1008309	HEATSINK
2		57	1010777-1	SEMICONDUCTOR DEVICE, DIODE
2		56	1008071-4	WASHER, FLAT
2		55	2008013-4	TERMINAL LUG, SOLDER, FLAT
2		54	1008024-2	WASHER, INSULATOR
2		53	1008021-1	BUSHING, INSULATOR
2		52	1008024-1	WASHER, INSULATOR
☒		REF	1010025	SCHEMATIC
2		51	1008540-2	GASKET, CONNECTOR MINIATURE
1		50	1008540-3	GASKET, CONNECTOR MINIATURE
AR		49	1006776-20	INSULATION SLEEVING ELECTRICAL
~~2~~		~~48~~	~~MS35338-81~~	~~WASHER, LOCK~~
~~2~~		~~47~~	~~1008070-9~~	~~WASHER, FLAT~~
1		46	MS35338-78	WASHER, LOCK
1		45	1008070-5	WASHER, FLAT
1		44	MS 35234-22	SCREW, PAN HEAD
AR		43	1006776-22	INSULATION SLEEVING
AR		42	1006776-21	INSULATION SLEEVING
AR		41	1006757-9	WIRE .032 DIA
AR		40	1006757-8	WIRE .020 DIA
AR		39	1006757-1	RIBBON .010 X .020
1		38	1010339	TRANSFORMER
1		37	1010323	TRANSFORMER
2		36	1010398-2	TRANSISTOR
1		35	1010376-4	TRANSISTOR
1		34	1010273-2	TRANSISTOR
~~1~~		~~33~~	~~1006752~~	~~TRANSISTOR~~
6		32	1010385	SEMICONDUTOR DEVICE DIODE
~~2~~		~~31~~	~~1010322-001~~	~~SEMICONDUCTOR DEVICE DIODE~~
1		30	1010372-22	SEMICONDUCTOR DEVICE, DIODE
2		29	1010410-13	CAPACITOR FIXED
5		28	1010438-1	CAPACITOR FIXED
1		27	1006789-002	CAPACITOR FIXED
2		26	1006777-30	CAPACITOR FIXED
2		25	1010316-40	CAPACITOR, FIXED
2		24	1010369-141	RESISTOR, FIXED
2		23	1010364-381	RESISTOR, FIXTED
2		22	1010363-557	RESISTOR, FIXED
2		21	1006750-74	RESISTOR, FIXED
1		20	1006750-66	RESISTOR, FIXED
3		19	1006750-56	RESISTOR, FIXED
1		18	1006750-49	RESISTOR, FIXED
2		17	1006750-19	RESISTOR, FIXED
2		16	1008025-2	INSULATOR, BUSHING
1		15	1008025-1	INSULATOR, BUSHING
2		14	1008021-2	BUSHING, INSULATOR
2		13	1008071-5	WASHER, FLAT
2		12	1008024-4	WASHER, INSULATOR
2		11	1008024-3	WASHER, INSULATOR
2		10	MS20341-416B	NUT
2		9	MS20341-10B	NUT
1		8	MS35650-44	NUT
10		7	1006775	INSULATOR
10		6	1006782-5	CONTACT, WRAPOST-MALE
~~1~~		~~5~~	~~1015697~~	~~INSULATOR~~
~~1~~		~~4~~	~~1015696~~	~~INSULATOR~~
~~1~~		~~3~~	~~1015695~~	~~INSULATOR~~
~~1~~		~~2~~	~~1015694~~	~~INSULATOR~~
~~1~~		~~1~~	~~1015693~~	~~HEATSINK~~

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS ±.005 ±.02 ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DRAWN Allison DATE 13 AUG 64
CHECKED A. Warrick 27 AUG 64
APPROVAL [illegible]
APPROVAL [illegible] 10-5-64
NASA APPROVAL [illegible] 10-6-64
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLY, -28 VDC
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007542
SCALE 2:1
SHEET 1 OF 2

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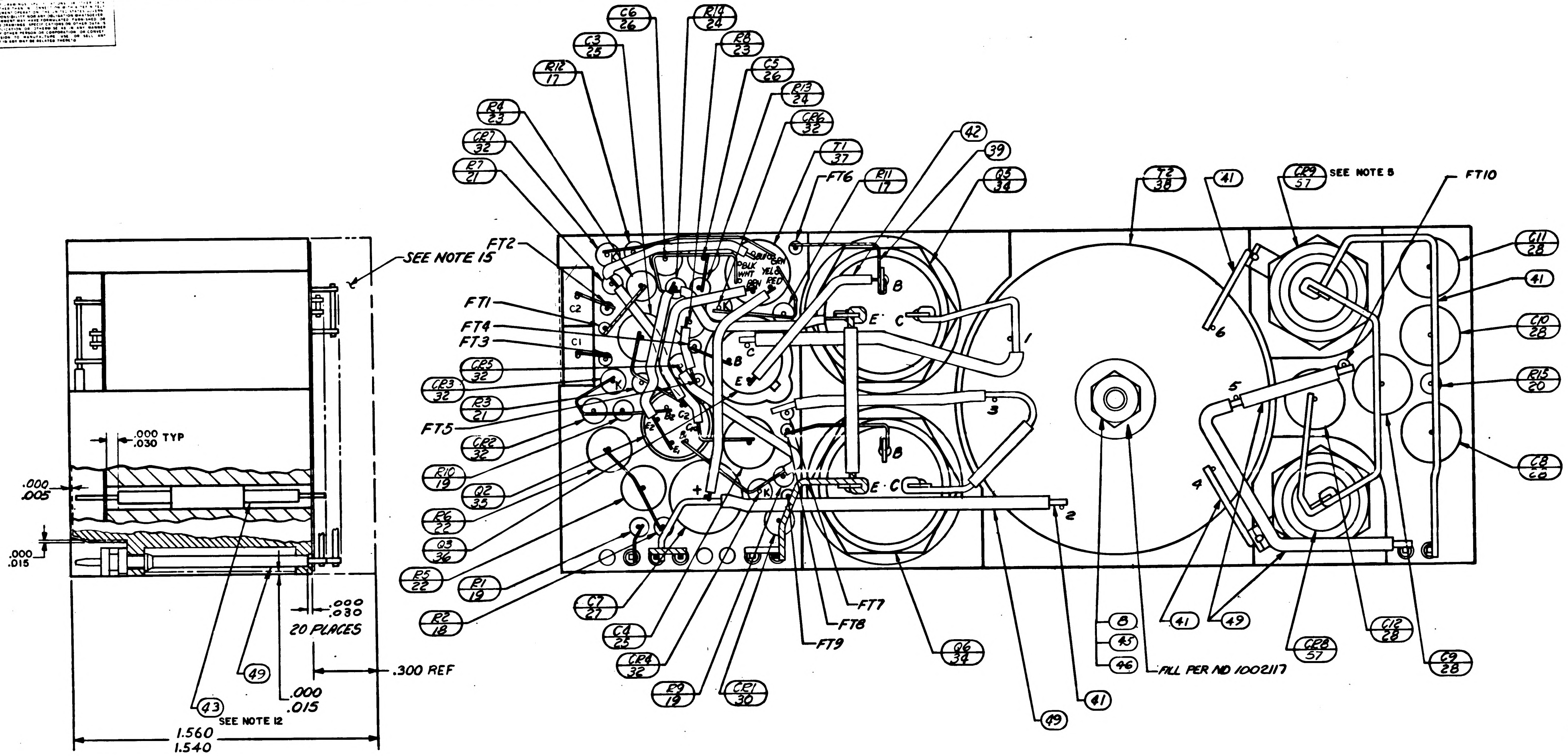
A		REVISED PER TDRR 17314		15 MAR 65	RJJ
B		REVISED PER TDRR 18104		1 APR 65	
C		REVISED PER TDRR 19404		2 JUN 65	
D		REVISED PER TDRR 19436		3 JUN 65	
E		REVISED PER TDRR 19508		7 JUN 65	
F		REVISION STATUS CHANGED		19 JUN 65	
G		REVISED PER TDRR 21278		31 JUL 65	
H		REVISION STATUS CHANGED		1 SEP 65	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R4 23
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CR7 32
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R7 21
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R11 17
42
39
Q5 34
T2 38
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CR9 57
SEE NOTE 8
FT10
FT2
SEE NOTE 15
FT1
FT4
FT3
CR5 32
CR3 32
R3 21
FT5
CR2 32
R10 19
Q2 35
R6 22
Q3 36
R5 22
R1 19
R2 18
C7 27
C4 25
CR4 32
R9 19
CR1 30
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FT8
FT9
Q6 34
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C9 28
C11 28
41
C10 28
R15 20
C8 28
C2
C1
BLU
GRN
BLK
WHT
YEL
BRN
RED
B
E
C
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2
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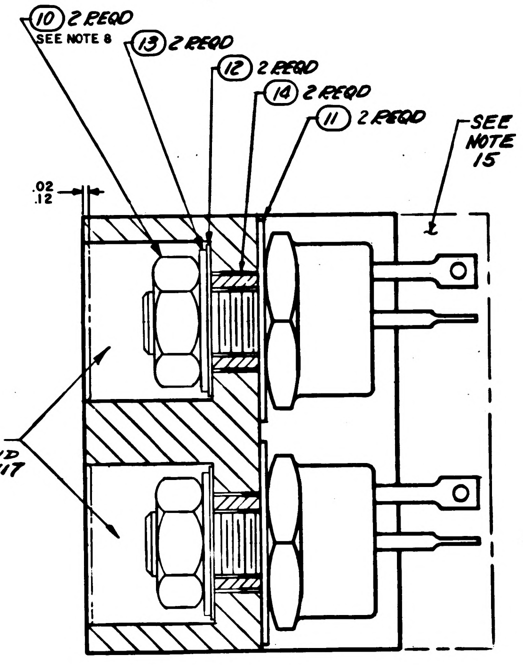
1.560 1.540

VIEW A-A
BEFORE ENCAPSULATION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13 2 REQD
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SEE NOTE 15
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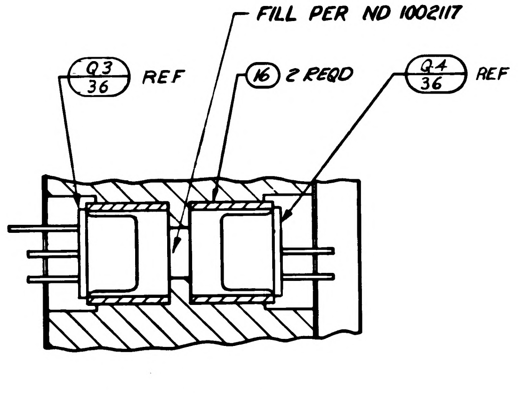
FILL PER ND 1002117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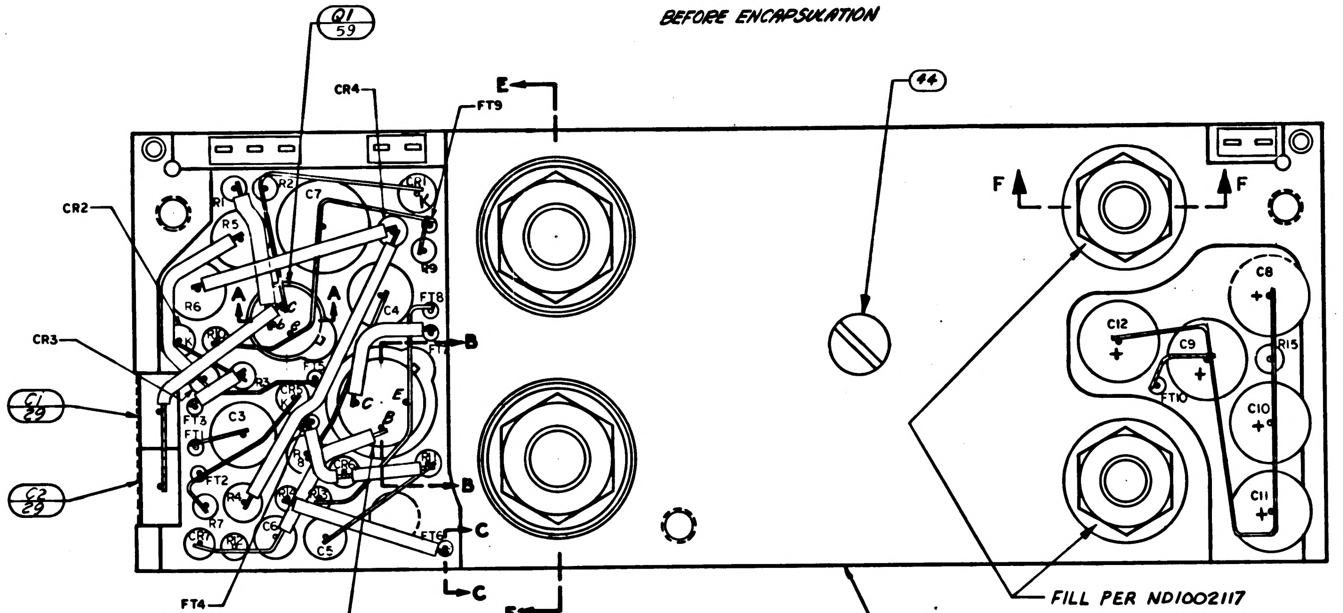
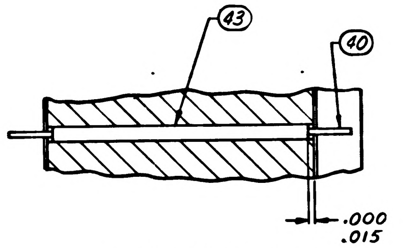
FILL PER ND 1002117
16 2 REQD
Q4 36 REF

PARTIAL SECTION B-B


Q1 59
CR4
FT9
E
CR2
CR3
C1 29
C2 29
FT4
Q4 36
B
B
C
C
E
44
F
F
R1
R2
C7
CR1
R5
R9
R6
A
A
C4
FT8
FT7
R10
R3
FT5
CR5
FT3
C3
FT1
FT2
R7
R4
R14
R13
R8
CR6
R11
CR7
R12
C6
C5
FT6
C8
C12
C9
R15
FT10
C10
C11
FILL PER ND1002117

VIEW B-B
BEFORE ENCAPSULATION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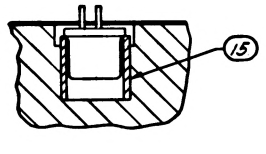
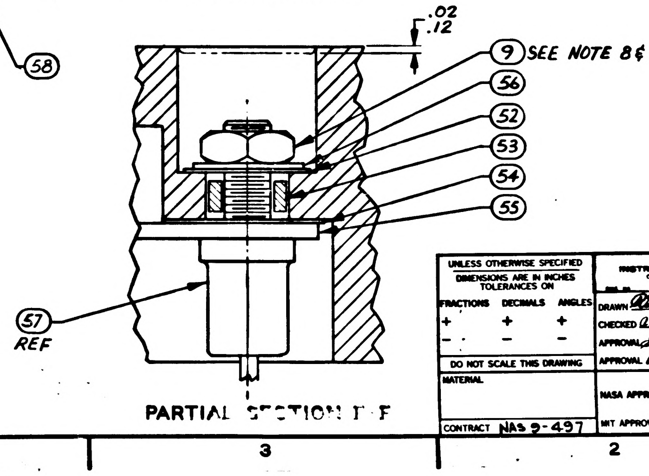
40
.000 .015

PARTIAL SECTION C-C
TYPICAL FOR FT1 THRU FT10



PARTIAL SECTION A-A


58
.02 .12
9 SEE NOTE 8 & 16
56
52
53
54
55
57 REF

SECTION E-E

PARTIAL SECTION F-F

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DO NOT SCALE THIS DRAWING	DRAWN R.Allen DATE 13 AUG 64 CHECKED A. Udorich 27 AUG 64 APPROVAL APPROVAL A. Betfast 10-5-64	POWER SUPPLY -28 VDC MODULE ASSEMBLY	
MATERIAL	NASA APPROVAL	CODE IDENT NO. 80230	SIZE E
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 4:1	1007542 SHEET 2 OF 2

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

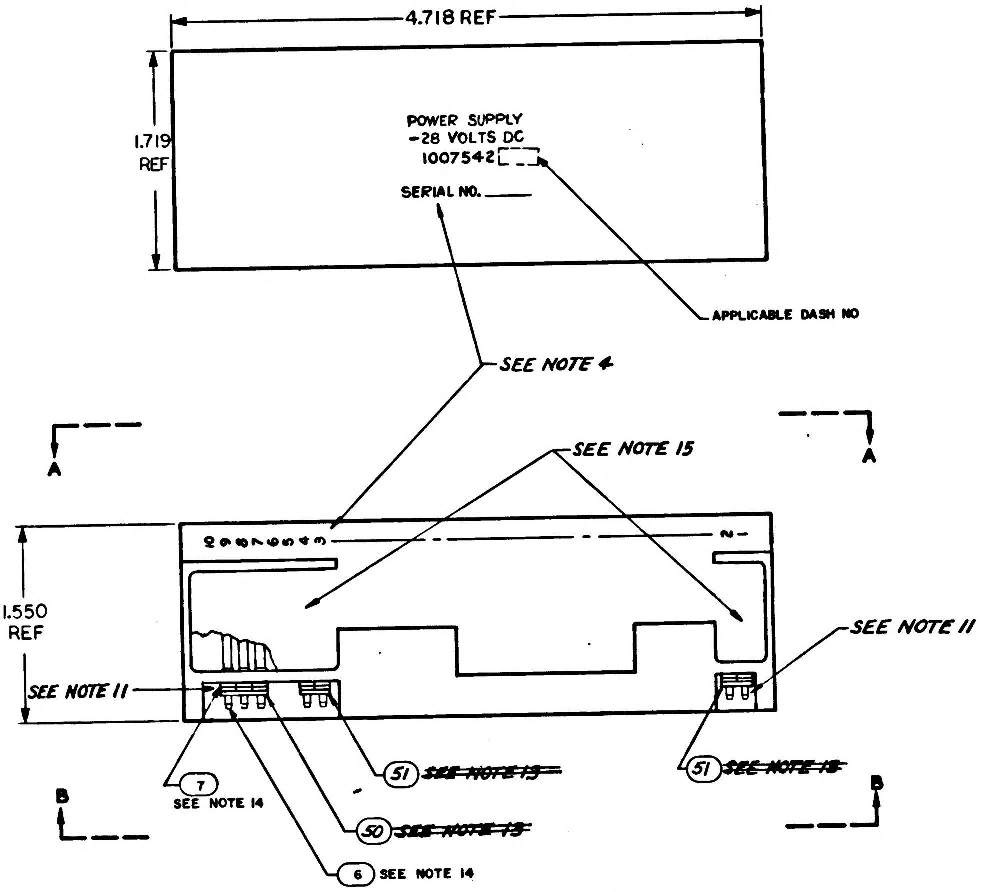
REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17314		15 MAR 65	RJJ [illegible]
B		REVISED PER TDRR 18104		[illegible] 65	[illegible]
C		REVISED PER TDRR 19404		[illegible] 65	[illegible]
D		REVISED PER TDRR 19436		3 JUN 65	[illegible]
E		REVISED PER TDRR 19508		7 JUN 65	[illegible]
F		REVISED PER TDRR 20143		9 JUN 65	[illegible]
G		REVISED PER TDRR 21278		31 JUL 65	[illegible]
H		REVISED PER TDRR 21773		[illegible] SEP 65	[illegible]
J		REVISED PER TDRR 22962		12 OCT 65	[illegible]

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. PROCURE PER PS 1007042.
3. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND 1002009. METHOD J.
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. CONNECTIONS TO Q5, Q6, CR8, & CR9 SHALL BE MADE BY SOLDERING PER ND 1002071.
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
7. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
8. MOUNTING TORQUE SHALL BE AS FOLLOWS:
   (57) 12 ±2 INCH POUNDS
   (34) 24 ±2 INCH POUNDS
9. ON ITEMS ②, ③, ④ AND ⑤ BROKEN PATH INDICATES SLEEVING

   K : CATHODE SIDE OF DIODE
   FT ( ): FEED THRU
   PLUS (+): POSITIVE SIDE OF CAPACITOR
   C : COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C_2: COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B_2: BASE
   E_2: EMITTER
10. UNLESS OTHERWISE SPECIFIED:
    a. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    b. WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. AREA INDICATED MUST BE FREE OF ENCAPSULATING COMPOUND.
12. TYPICAL SLEEVING FOR: R1, R2, R3, R9 THRU R15 & CR2 THRU CR7.
13. ~~BOND (50) AND (51) TO ⑦ PER ND 1002237.~~
14. ASSEMBLE PER ND1002136.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
17. APPLY SEALING COMPOUND PER MIL-S-22473, GRADE A.
18. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
20. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.



LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED				EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			011				
			1		59	1010966-1	TRANSISTOR
			1		58	1008309	HEATSINK
			2		57	1010777-1	SEMICONDUCTOR DEVICE, DIODE
			2		56	1008071-4	WASHER, FLAT
			2		55	2008013-4	TERMINAL LUG, SOLDER, FLAT
			2		54	1008024-2	WASHER, INSULATOR
			2		53	1008021-1	BUSHING, INSULATOR
			2		52	1008024-1	WASHER, INSULATOR
			☒		REF	1010025	SCHEMATIC
			2		51	1008540-2	GASKET, CONNECTOR MINIATURE
			1		50	1008540-3	GASKET, CONNECTOR MINIATURE
			AR		49	1006776-20	INSULATION SLEEVING ELECTRICAL
			~~2~~		~~48~~	~~MS35338-81~~	~~WASHER, LOCK~~
			~~2~~		~~47~~	~~1008070-9~~	~~WASHER, FLAT~~
			1		46	MS35338-78	WASHER, LOCK
			1		45	1008070-5	WASHER, FLAT
			1		44	MS35234-22	SCREW, PAN HEAD
			AR		43	1006776-22	INSULATION, SLEEVING
			AR		42	1006776-21	INSULATION SLEEVING
			AR		41	1006757-9	WIRE .032 DIA
			AR		40	1006757-8	WIRE .020 DIA
			AR		39	1006757-1	RIBBON .010 X .020
			1		38	1010339	TRANSFORMER
			1		37	1010323	TRANSFORMER
			2		36	1010398-2	TRANSISTOR
			1		35	1010376-4	TRANSISTOR
			1		34	1010273-2	TRANSISTOR
			~~1~~		~~33~~	~~1006752~~	~~TRANSISTOR~~
			6		32	1010385	SEMICONDUTOR DEVICE DIODE
			~~2~~		~~31~~	~~1010322-001~~	~~SEMICONDUCTOR DEVICE DIODE~~
			1		30	1010372-22	SEMICONDUCTOR DEVICE, DIODE
			2		29	1010410-13	CAPACITOR FIXED
			5		28	1010438-1	CAPACITOR FIXED
			1		27	1006789-002	CAPACITOR FIXED
			2		26	1006771-30	CAPACITOR FIXED
			2		25	1010316-40	CAPACITOR, FIXED
			2		24	1010369-141	RESISTOR, FIXED
			2		23	1010364-381	RESISTOR, FIXTED
			2		22	1010363-557	RESISTOR, FIXED
			2		21	1006750-74	RESISTOR, FIXED
			1		20	1006750-66	RESISTOR, FIXED
			3		19	1006750-56	RESISTOR, FIXED
			1		18	1006750-49	RESISTOR, FIXED
			2		17	1006750-19	RESISTOR, FIXED
			2		16	1008025-2	INSULATOR, BUSHING
			1		15	1008025-1	INSULATOR, BUSHING
			2		14	1008021-2	BUSHING, INSULATOR
			2		13	1008071-5	WASHER, FLAT
			2		12	1008024-4	WASHER, INSULATOR
			2		11	1008024-3	WASHER, INSULATOR
			2		10	MS20341-416B	NUT
			2		9	MS20341-10B	NUT
			1		8	MS35650-44	NUT
			10		7	1006775	INSULATOR
			10		6	1006782-5	CONTACT, WRAPOST-MALE
			~~1~~		~~5~~	~~1015697~~	~~INSULATOR~~
			~~1~~		~~4~~	~~1015696~~	~~INSULATOR~~
			~~1~~		~~3~~	~~1015695~~	~~INSULATOR~~
			~~1~~		~~2~~	~~1015694~~	~~INSULATOR~~
			~~1~~		~~1~~	~~1015693~~	~~HEATSINK~~

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	±.005	+
-	±.02	-

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN [illegible] DATE 13 AUG 64
CHECKED [illegible] 27 AUG 64
APPROVAL [illegible]
APPROVAL [illegible] 11-5-64
NASA APPROVAL [illegible] 12-4-64
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

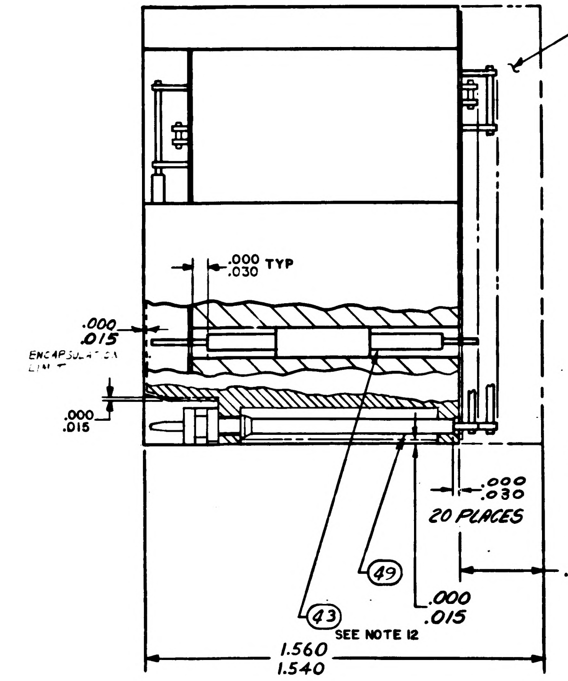
POWER SUPPLY, -28 VDC
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007542
SCALE 2:1
SHEET 1 OF 2

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17514		15 MAR 65	RJJ
B		REVISED PER TDRR 18104		12 APR 65	
C		REVISED PER TDRR 19404		2 JUN 65	
D		REVISED PER TDRR 19436		3 JUN 65	
E		REVISED PER TDRR 19508		7	
F		REVISION STATUS CHANGED		19 JUL	
G		REVISED PER TDRR 2:278		31 65	
H		REVISION STATUS CHANGED		1 SEP 65	
J		REVISED PER TDRR 22962		12 OCT 65	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.000 .015
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.000 .030
20 PLACES
49
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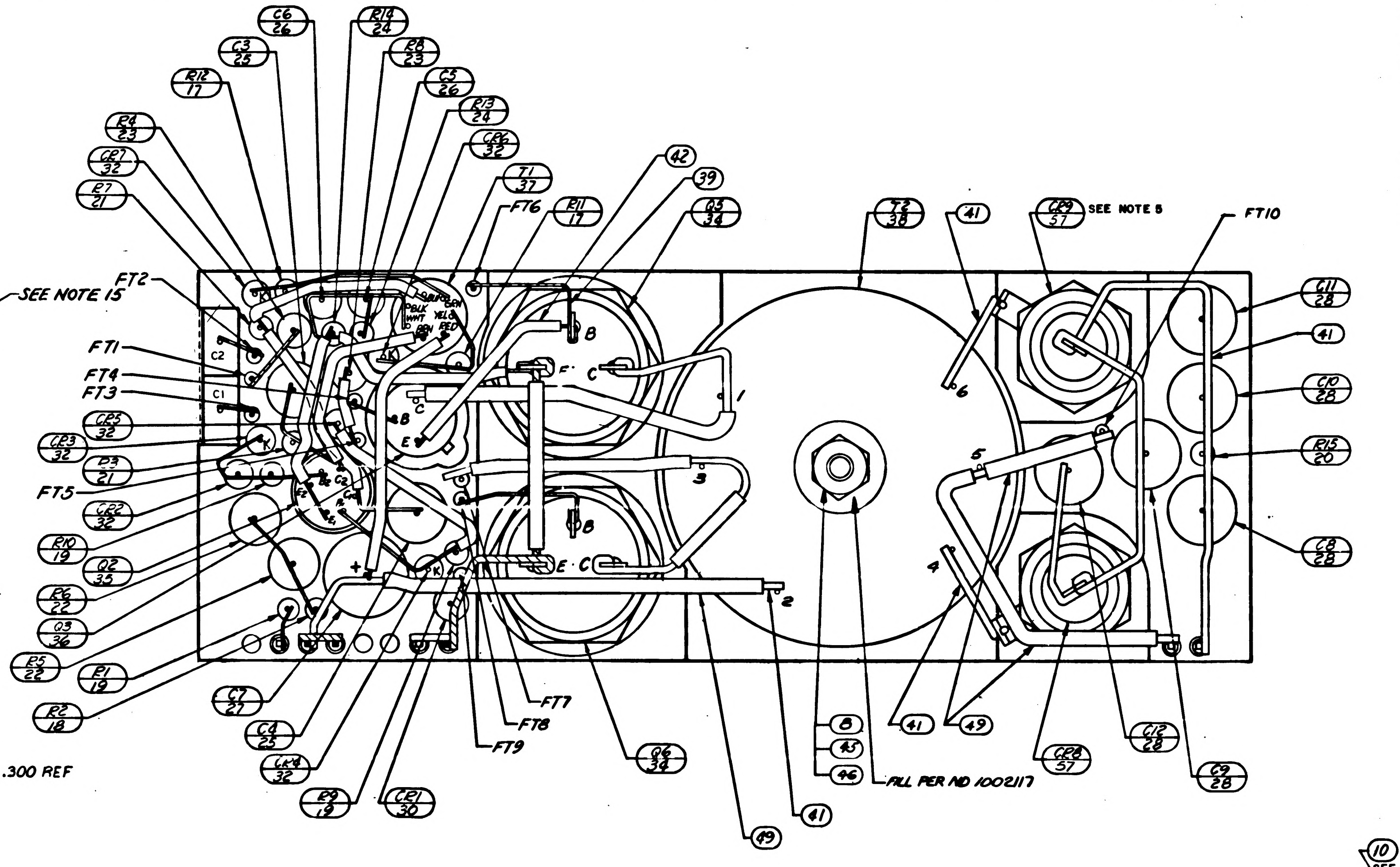
43
SEE NOTE 12
.000 .015
1.560 1.540


C6/26
R14/24
C3/25
R8/23
R12/17
C5/26
R13/24
R4/23
CR6/32
CR7/32
T1/37
R7/21
FT6
R11/17
42
39
Q5/34
T2/38
41
CR9/37 SEE NOTE 5
FT10
FT2
FT1
FT4
FT3
CR5/32
CR3/32
R3/21
FT5
CR2/32
R10/19
Q2/35
R6/22
Q3/36
R5/22
R1/19
R2/18
C7/27
C4/25
CR4/32
R9/19
CR1/30
FT7
FT8
FT9
Q6/34
49
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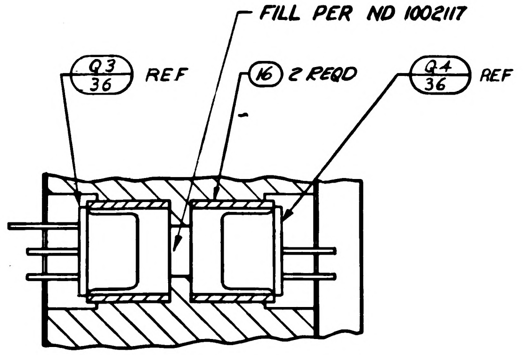
8
45
46
FILL PER ND 1002117
41
49
CR8/37
C12/28
C9/28
C11/28
41
C10/28
R15/20
C8/28
C2
C1
BLK
WHT
BRN
GRN
YEL
RED
B
C
E
K
1
2
3
4
5
6

VIEW A-A
BEFORE ENCAPSULATION


FILL PER ND 1002117
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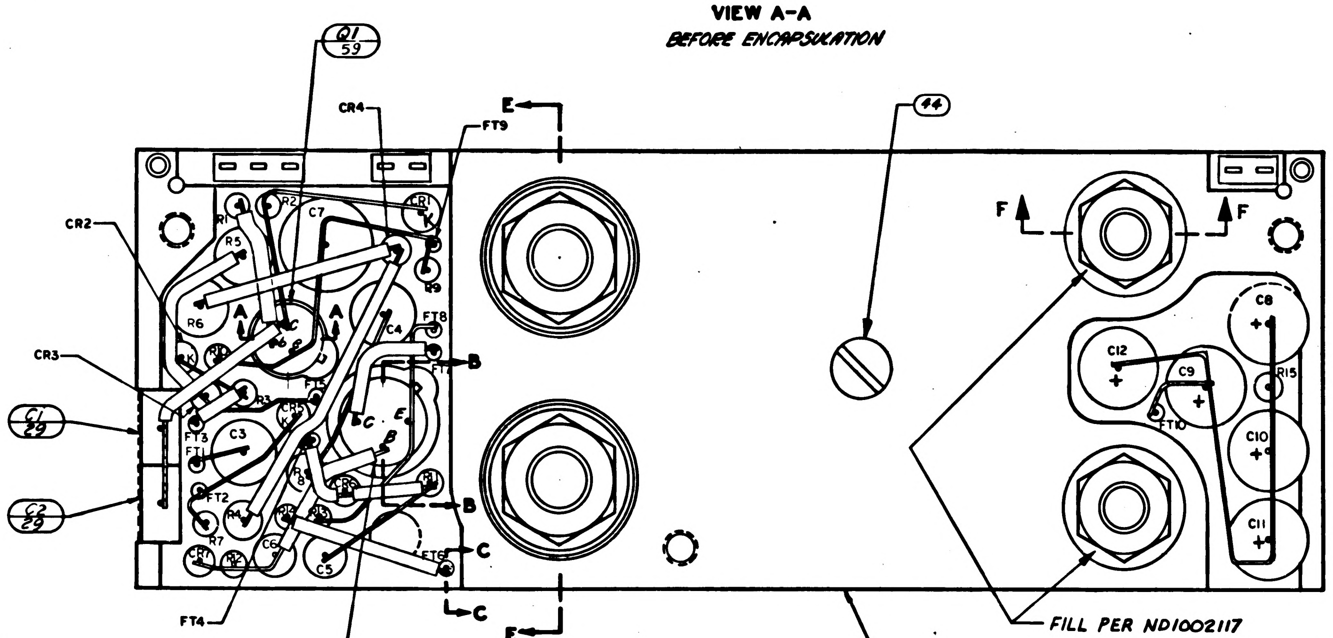
16 2 REQD
Q4/36 REF

PARTIAL SECTION B-B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CR4
FT9
E
44
CR2
CR3
C1/29
C2/29
FT4
Q4/36
F
F
B
C
E
B
C
FILL PER ND1002117
R1
R2
R5
R6
C7
CR1
R9
FT8
C4
R3
FT3
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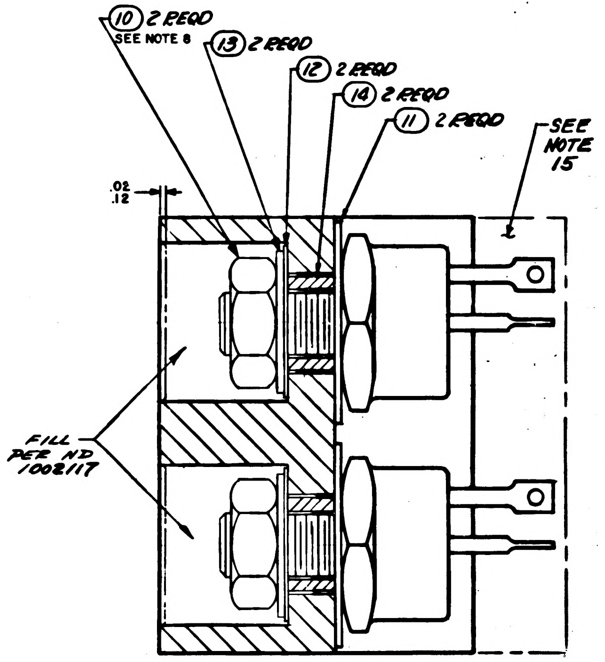
C8
R15
FT10
C10
C11


10 2 REQD
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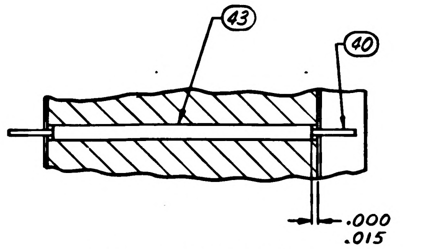
13 2 REQD
12 2 REQD
14 2 REQD
11 2 REQD
SEE NOTE 15
.02 .12
FILL PER ND 1002117

SECTION E-E


43
40
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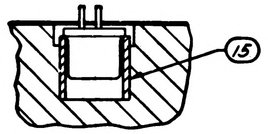
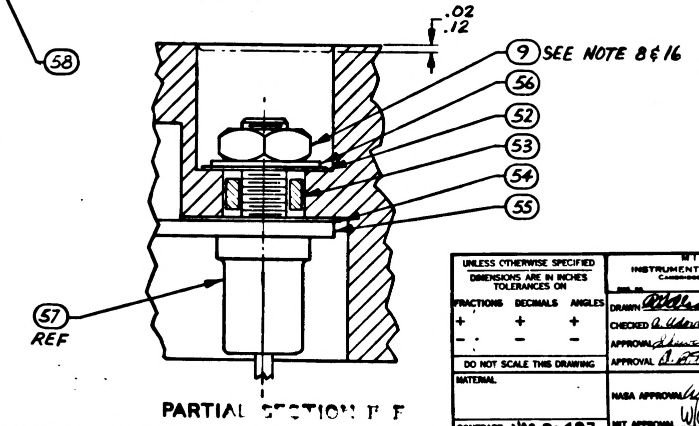
PARTIAL SECTION C-C
TYPICAL FOR FT1 THRU FT10



PARTIAL SECTION A-A

VIEW B-B
BEFORE ENCAPSULATION

58


.02 .12
9 SEE NOTE 8 & 16
56
52
53
54
55
57 REF

PARTIAL SECTION F-F

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ \+ \+
- \- \-
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN DATE 13 AUG 64
CHECKED A. Udovich 27 AUG 64
APPROVAL
APPROVAL 1-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLY -28 VDC
MODULE ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1007542
SCALE 4:1
SHEET 2 OF 2

1007542

TABLE I

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HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17314		15 MAR 65	RJJ
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C		REVISED PER TDRR 19404		2 JUN 65	[illegible]
D		REVISED PER TDRR 19436		3 JUN 65	FCK
E		REVISED PER TDRR 19508		7 JUL 65	[illegible]
F		REVISED PER TDRR 20143		[illegible]	[illegible]
G		REVISED PER TDRR 21278		31 [illegible] 65	[illegible]
H		REVISED PER TDRR 21773		65	[illegible]
J		REVISED PER TDRR 22962		65	[illegible]
K		REVISED PER TDRR 23888		65	[illegible]

NOTES

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   FT( ): FEED THRU

   PLUS(+) : POSITIVE SIDE OF CAPACITOR

   C : COLLECTOR LEAD OF TRANSISTOR

   B: BASE

   E: EMITTER

   C_2 : COLLECTOR LEAD OF MULTISTAGE TRANSISTOR

   B_2: BASE

   E_2: EMITTER
10. UNLESS OTHERWISE SPECIFIED:
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    b. WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
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14. ASSEMBLE PER ND1002136.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
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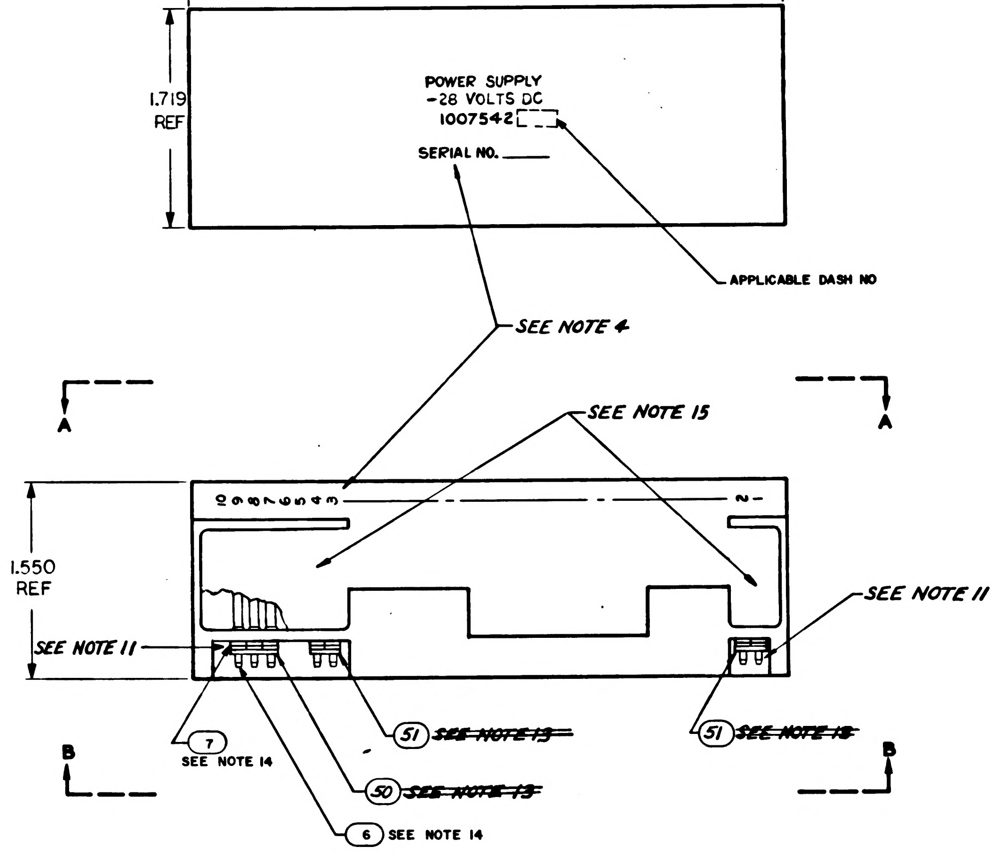
18. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
20. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.



LIST OF PARTS AND MATERIALS

			QUANTITY REQUIRED 011	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			AR		60	1010848-2	WIRE, ELECTRICAL-NICKEL
			1		59	1010966-1	TRANSISTOR
			1		58	1008309	HEATSINK
			2		57	1010777-1	SEMICONDUCTOR DEVICE, DIODE
			2		56	1008071-4	WASHER, FLAT
			2		55	2008013-4	TERMINAL LUG, SOLDER, FLAT
			2		54	1008024-2	WASHER, INSULATOR
			2		53	1008021-1	BUSHING, INSULATOR
			2		52	1008024-1	WASHER, INSULATOR
			☒		REF	1010025	SCHEMATIC
			2		51	1008540-2	GASKET, CONNECTOR MINIATURE
			1		50	1008540-3	GASKET, CONNECTOR MINIATURE
			AR		49	1006776-20	INSULATION SLEEVING ELECTRICAL
			~~2~~		~~48~~	~~MS35338-81~~	~~WASHER, LOCK~~
			~~2~~		~~47~~	~~1008070-9~~	~~WASHER, FLAT~~
			1		46	MS35338-78	WASHER, LOCK
			1		45	1008070-5	WASHER, FLAT
			1		44	MS 35234-22	SCREW, PAN HEAD
			AR		43	1006776-22	INSULATION SLEEVING
			AR		42	1006776-21	INSULATION SLEEVING
			AR		41	1006757-9	WIRE .032 DIA
			~~AR~~		~~40~~	~~1006757-8~~	~~WIRE .020 DIA~~
			AR		39	1006757-1	RIBBON .010 X .020
			1		38	1010339	TRANSFORMER
			1		37	1010323	TRANSFORMER
			2		36	1010398-2	TRANSISTOR
			1		35	1010376-4	TRANSISTOR
			1		34	1010273-2	TRANSISTOR
			~~1~~		~~33~~	~~1006752~~	~~TRANSISTOR~~
			6		32	1010385	SEMICONDUTOR DEVICE DIODE
			~~2~~		~~31~~	~~1010322-001~~	~~SEMICONDUCTOR DEVICE DIODE~~
			1		30	1010372-22	SEMICONDUCTOR DEVICE, DIODE
			2		29	1010410-13	CAPACITOR FIXED
			5		28	1010438-1	CAPACITOR FIXED
			1		27	1006789-002	CAPACITOR FIXED
			2		26	1006777-30	CAPACITOR FIXED
			2		25	1010316-40	CAPACITOR, FIXED
			2		24	1010369-141	RESISTOR, FIXED
			2		23	1010364-381	RESISTOR, FIXTED
			2		22	1010363-557	RESISTOR, FIXED
			2		21	1006750-74	RESISTOR, FIXED
			1		20	1006750-66	RESISTOR, FIXED
			3		19	1006750-56	RESISTOR, FIXED
			1		18	1006750-49	RESISTOR, FIXED
			2		17	1006750-19	RESISTOR, FIXED
			2		16	1008025-2	INSULATOR, BUSHING
			1		15	1008025-1	INSULATOR, BUSHING
			2		14	1008021-2	BUSHING, INSULATOR
			2		13	1008071-5	WASHER, FLAT
			2		12	1008024-4	WASHER, INSULATOR
			2		11	1008024-3	WASHER, INSULATOR
			2		10	MS20341-416B	NUT
			2		9	MS20341-10B	NUT
			1		8	MS35650-44	NUT
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			~~1~~		1	~~1015693~~	~~HEATSINK~~

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS ±.005 ±.02 ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN DATE 13 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL 11-5-64
NASA APPROVAL 10-6-65
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLY, -28 VDC
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007542
SCALE 2:1
SHEET 1 OF 2

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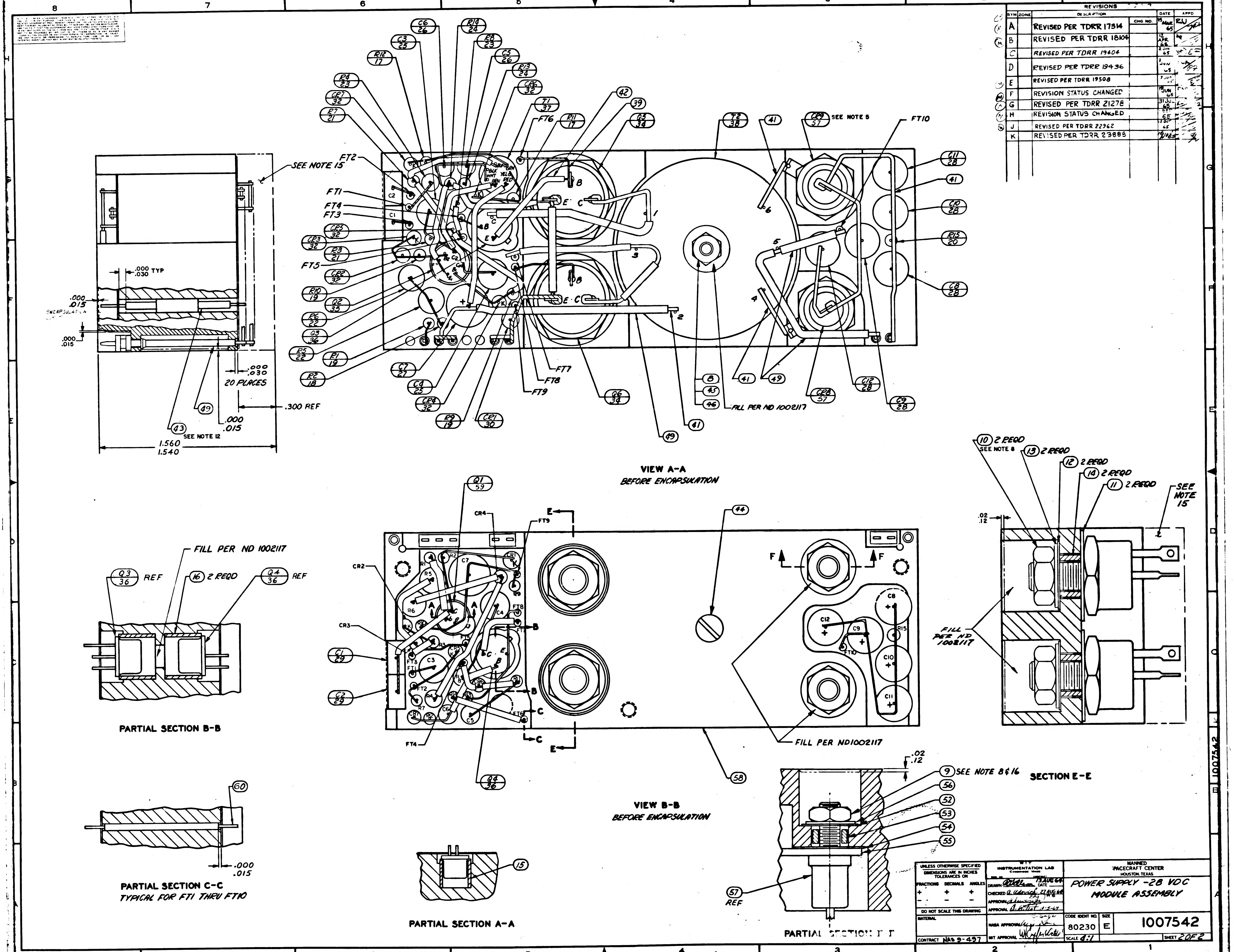

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FT9
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VIEW A-A
BEFORE ENCAPSULATION
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13 2 REQD
12 2 REQD
14 2 REQD
11 2 REQD
SEE NOTE 15
.02
.12
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FT1
C3
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R4
R7
CR1
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FT10
C10
C11
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FILL PER ND 1002117
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PARTIAL SECTION C-C
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PARTIAL SECTION A-A
VIEW B-B
BEFORE ENCAPSULATION
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.12
9 SEE NOTE 8 & 16
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54
55
57 REF
PARTIAL SECTION F-F

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17314		19 MAR 65	RJU
B		REVISED PER TDRR 18104		12 APR 65	
C		REVISED PER TDRR 19404		2 JUN 65	
D		REVISED PER TDRR 19436		3 JUN 65	
E		REVISED PER TDRR 19508		7 JUN 65	
F		REVISION STATUS CHANGED		19 JUN 65	
G		REVISED PER TDRR 21278		31 JUL 65	
H		REVISION STATUS CHANGED		65	
J		REVISED PER TDRR 22962		12 OCT 65	
K		REVISED PER TDRR 23889		15 NOV 65	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
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MIT
INSTRUMENTATION LAB
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MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS
POWER SUPPLY -28 VDC
MODULE ASSEMBLY
CODE IDENT NO. 80230
SIZE E
1007542
SCALE 4:1
SHEET 2 OF 2

1007542

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

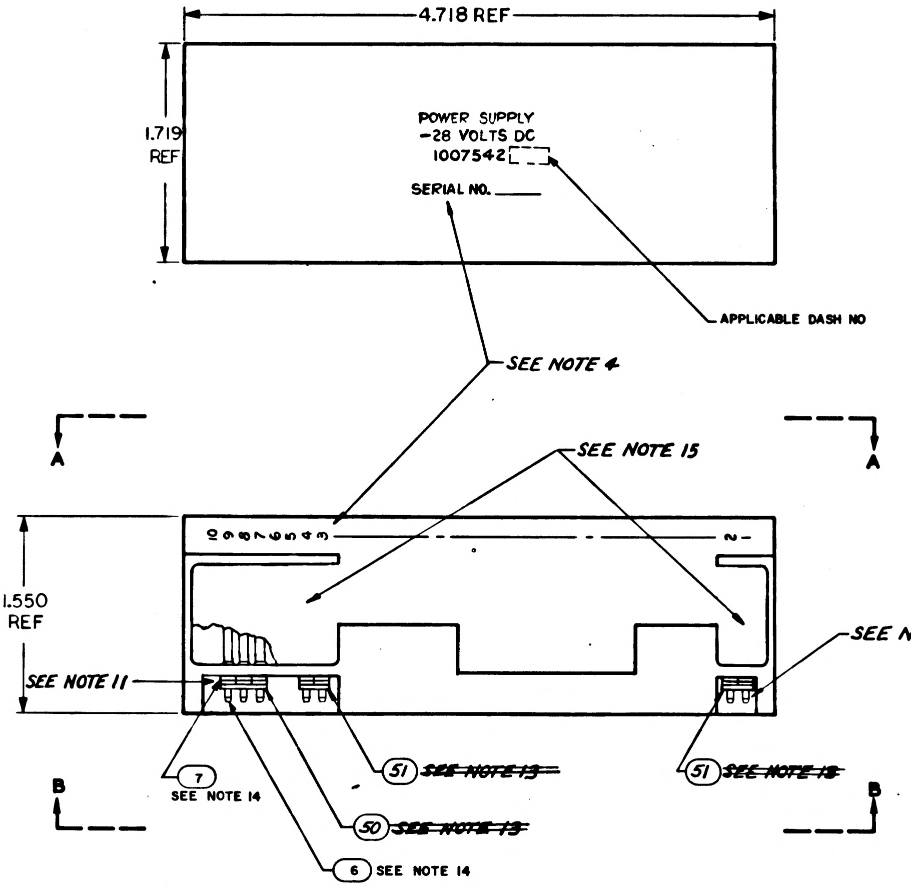
REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17314		15 MAR 65	RJJ
B		REVISED PER TDRR 18104		12 APR 65	[illegible]
C		REVISED PER TDRR 19404		2 JUN 65	[illegible]
D		REVISED PER TDRR 19436		3 JUN 65	HCA
E		REVISED PER TDRR 19508		7 JUN 65	[illegible]
F		REVISED PER TDRR 20143		9 JUN 65	[illegible]
G		REVISED PER TDRR 21278		31 JUL 65	[illegible]
H		REVISED PER TDRR 21773		SEP 65	[illegible]
J		REVISED PER TDRR 22962		2 OCT 65	[illegible]
K		REVISED PER TDRR 23888		16 [illegible] 65	[illegible]
L		REVISED PER TDRR 25056		[illegible]	[illegible]

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. PROCURE PER PS 1007042.
3. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND 1002009. METHOD J.
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. CONNECTIONS TO Q5, Q6, CR8, & CR9 SHALL BE MADE BY SOLDERING PER ND 1002071.
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
7. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
8. MOUNTING TORQUE SHALL BE AS FOLLOWS:
   - (57) 12 ±2 INCH POUNDS
   - (34) 24 ±2 INCH POUNDS
9. ON ITEMS ②, ③, ④ AND ⑤ BROKEN PATH INDICATES SLEEVING

   K : CATHODE SIDE OF DIODE
   FT( ): FEED THRU
   PLUS(+): POSITIVE SIDE OF CAPACITOR
   C : COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C_2 : COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B_2 : BASE
   E_2 : EMITTER
10. UNLESS OTHERWISE SPECIFIED:
    a. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    b. WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. AREA INDICATED MUST BE FREE OF ENCAPSULATING COMPOUND.
12. TYPICAL SLEEVING FOR: R1, R2, R3, R9 THRU R15 & CR2 THRU CR7.
13. ~~BOND (50) AND (51) TO ⑦ PER ND 1002237.~~
14. ASSEMBLE PER ND1002136.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. ~~BOND A .25 MIN WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
17. APPLY SEALING COMPOUND PER MIL-S-22473, GRADE A.
18. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
20. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.



QUANTITY REQUIRED			011	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			AR		60	1010848-2	WIRE, ELECTRICAL-NICKEL
			1		59	1010966-1	TRANSISTOR
			1		58	1008309	HEATSINK
			2		57	1010777-1	SEMICONDUCTOR DEVICE, DIODE
			2		56	1008071-4	WASHER, FLAT
			2		55	2008013-9	TERMINAL LUG, SOLDER, FLAT
			2		54	1008024-2	WASHER, INSULATOR
			2		53	1008021-1	BUSHING, INSULATOR
			2		52	1008024-1	WASHER, INSULATOR
			X		REF	1010025	SCHEMATIC
			2		51	1008540-2	GASKET, CONNECTOR MINIATURE
			1		50	1008540-3	GASKET, CONNECTOR MINIATURE
			AR		49	1006776-20	INSULATION SLEEVING ELECTRICAL
			~~2~~		~~48~~	~~MS35338-81~~	~~WASHER, LOCK~~
			~~2~~		~~47~~	~~1008070-9~~	~~WASHER, FLAT~~
			1		46	MS35338-78	WASHER, LOCK
			1		45	1008070-5	WASHER, FLAT
			1		44	MS 35234-22	SCREW, PAN HEAD
			AR		43	1006776-22	INSULATION SLEEVING
			AR		42	1006776-21	INSULATION SLEEVING
			AR		41	1006757-9	WIRE .032 DIA
			~~AR~~		~~40~~	~~1006757-8~~	~~WIRE .020 DIA~~
			AR		39	1006757-1	RIBBON .010 X.020
			1		38	1010339	TRANSFORMER
			1		37	1010323	TRANSFORMER
			2		36	1010398-2	TRANSISTOR
			1		35	1010376-4	TRANSISTOR
			1		34	1010273-2	TRANSISTOR
			~~1~~		~~33~~	~~1006752~~	~~TRANSISTOR~~
			6		32	1010385	SEMICONDUTOR DEVICE DIODE
			~~2~~		~~31~~	~~1010322-001~~	~~SEMICONDUCTOR DEVICE DIODE~~
			1		30	1010372-22	SEMICONDUCTOR DEVICE, DIODE
			2		29	1010410-13	CAPACITOR FIXED
			5		28	1010438-1	CAPACITOR FIXED
			1		27	1006789-002	CAPACITOR FIXED
			2		26	1006771-30	CAPACITOR FIXED
			2		25	1010316-40	CAPACITOR, FIXED
			2		24	1010369-141	RESISTOR, FIXED
			2		23	1010364-381	RESISTOR, FIXTED
			2		22	1010363-557	RESISTOR, FIXED
			2		21	1006750-74	RESISTOR, FIXED
			1		20	1006750-66	RESISTOR, FIXED
			3		19	1006750-56	RESISTOR, FIXED
			1		18	1006750-49	RESISTOR, FIXED
			2		17	1006750-19	RESISTOR, FIXED
			2		16	1008025-2	INSULATOR, BUSHING
			1		15	1008025-1	INSULATOR, BUSHING
			2		14	1008021-2	BUSHING, INSULATOR
			2		13	1008071-5	WASHER, FLAT
			2		12	1008024-4	WASHER, INSULATOR
			2		11	1008024-3	WASHER, INSULATOR
			2		10	MS20341-416B	NUT
			2		9	MS20341-10B	NUT
			1		8	MS35650-44	NUT
			10		7	1006775	INSULATOR
			10		6	1006782-5	CONTACT, WRAPOST-MALE
			~~1~~		~~5~~	~~1015697~~	~~INSULATOR~~
			~~1~~		~~4~~	~~1015696~~	~~INSULATOR~~
			~~1~~		~~3~~	~~1015695~~	~~INSULATOR~~
			~~1~~		~~2~~	~~1015694~~	~~INSULATOR~~
			~~1~~		~~1~~	~~1015693~~	~~HEATSINK~~

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1021221		
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	±.005	+
-	±.02	-

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN A. Wilson DATE 13 AUG 64
CHECKED A. Ulorck 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

POWER SUPPLY, -28 VDC
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007542
SCALE 2:1
SHEET 1 OF 2

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REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17314		15 MAR 65	RJJ
B		REVISED PER TDRR 18104		12 APR 65	
C		REVISED PER TDRR 19404			
D		REVISED PER TDRR 19436		3 JUN 65	HCK
E		REVISED PER TDRR 19508		7	
F		REVISION STATUS CHANGED		19 JUN 65	
G		REVISED PER TDRR 21278		31 JUL 65	
H		REVISION STATUS CHANGED		65	
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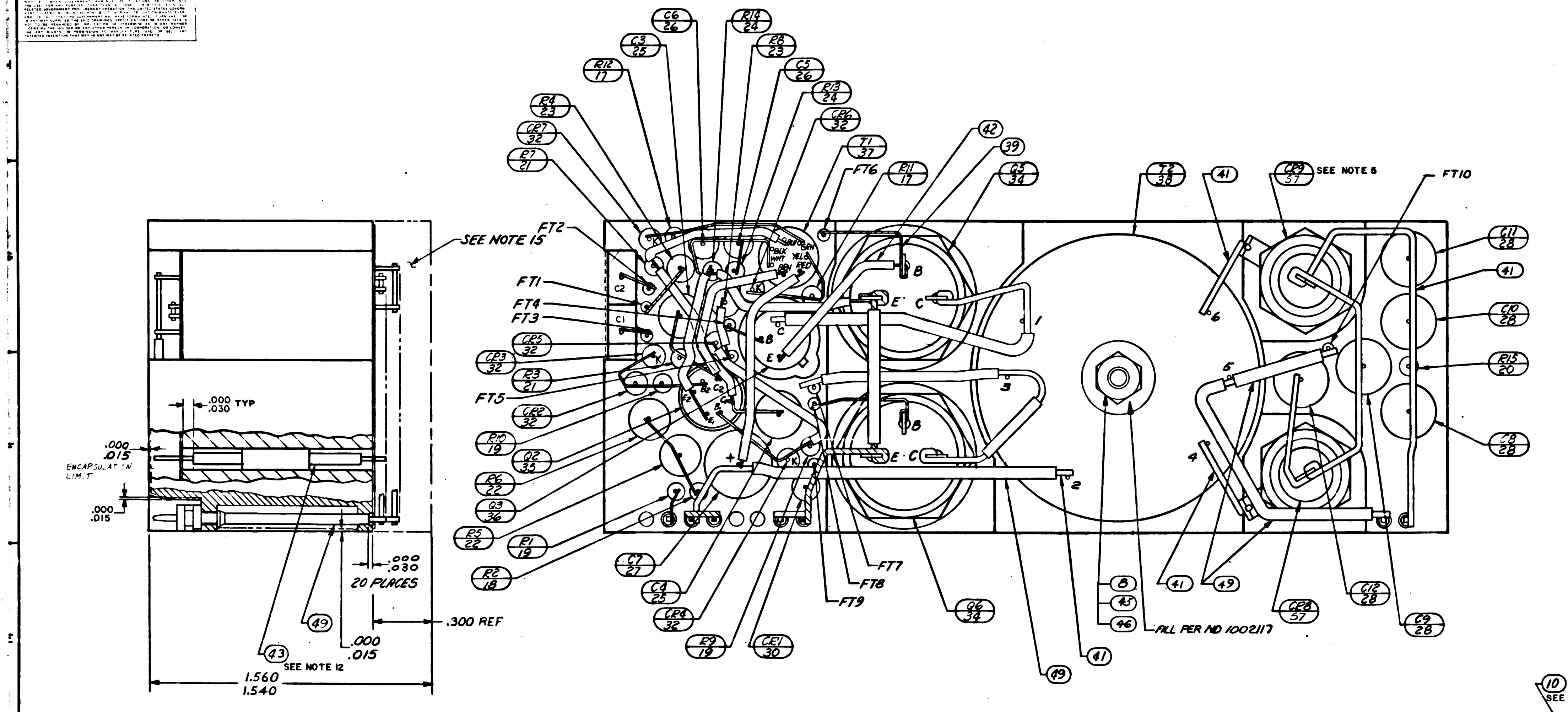
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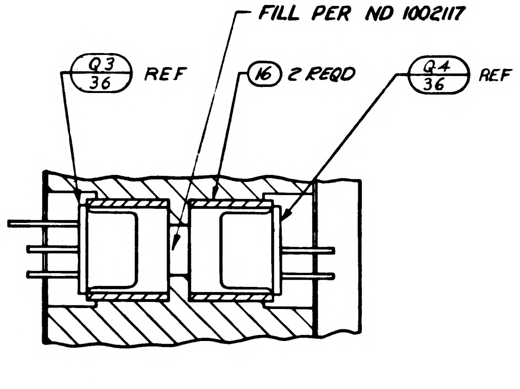
VIEW A-A
BEFORE ENCAPSULATION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Q4 36 REF

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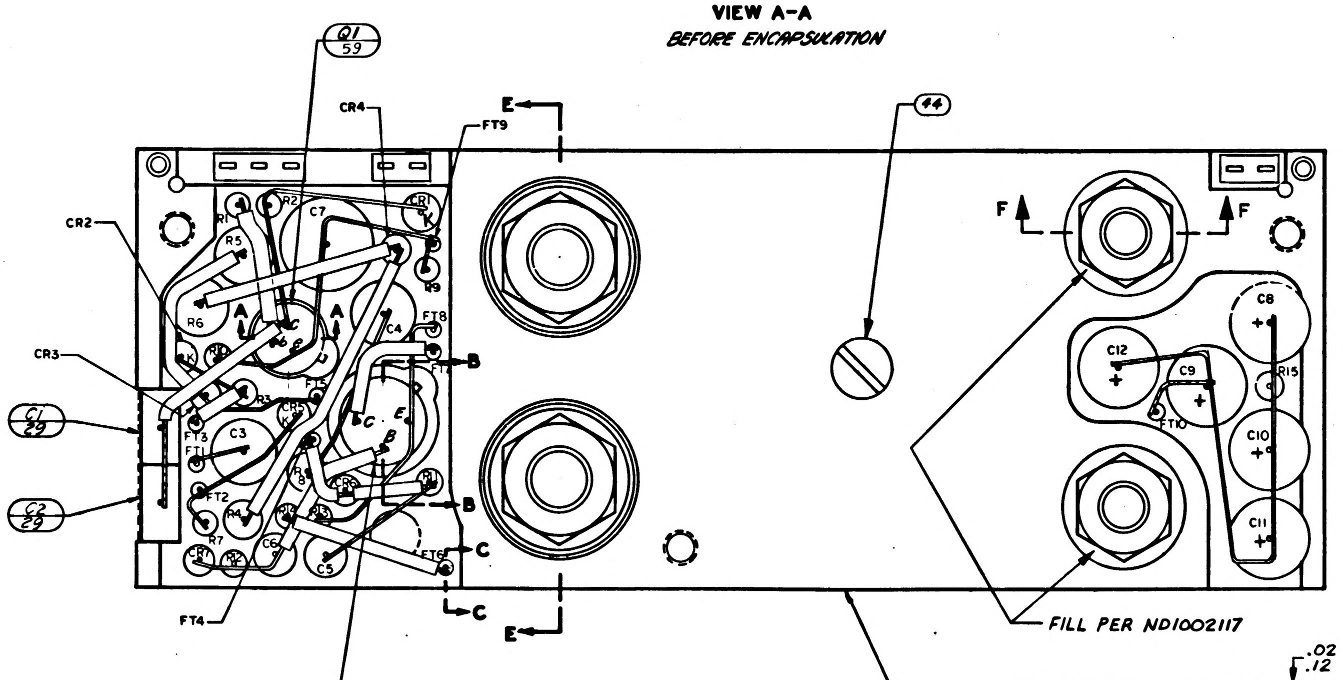
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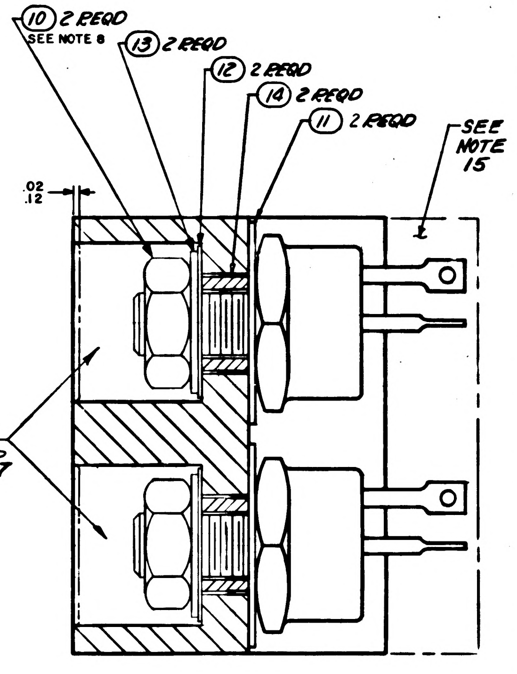
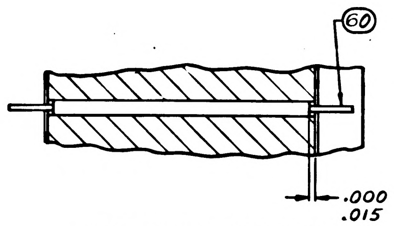
FILL PER ND1002117

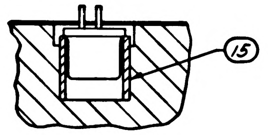
VIEW B-B
BEFORE ENCAPSULATION


10 2 REQD
SEE NOTE 8
13 2 REQD
12 2 REQD
14 2 REQD
11 2 REQD
SEE NOTE 15
.02 .12
FILL PER ND 1002117

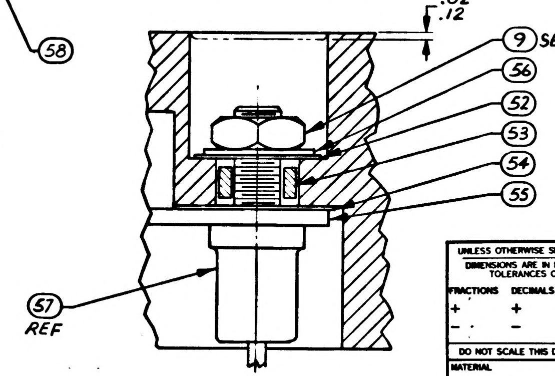
SECTION E-E



PARTIAL SECTION C-C
TYPICAL FOR FT1 THRU FT10



PARTIAL SECTION A-A


58
.02 .12
9 SEE NOTE 8 & 16
56
52
53
54
55
57 REF

PARTIAL SECTION F F

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + − DECIMALS + − ANGLES + − DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB CAMBRIDGE MASS DRAWN R.W. Allen DATE 13 AUG 64 CHECKED A. Udovich 27 AUG 64 APPROVAL APPROVAL 0-5-64	MANNED SPACECRAFT CENTER HOUSTON, TEXAS *POWER SUPPLY -28 VDC MODULE ASSEMBLY*
MATERIAL	NASA APPROVAL	CODE IDENT NO. 80230 SIZE E 1007542
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 4:1 SHEET 2 OF 2

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

REVISIONS

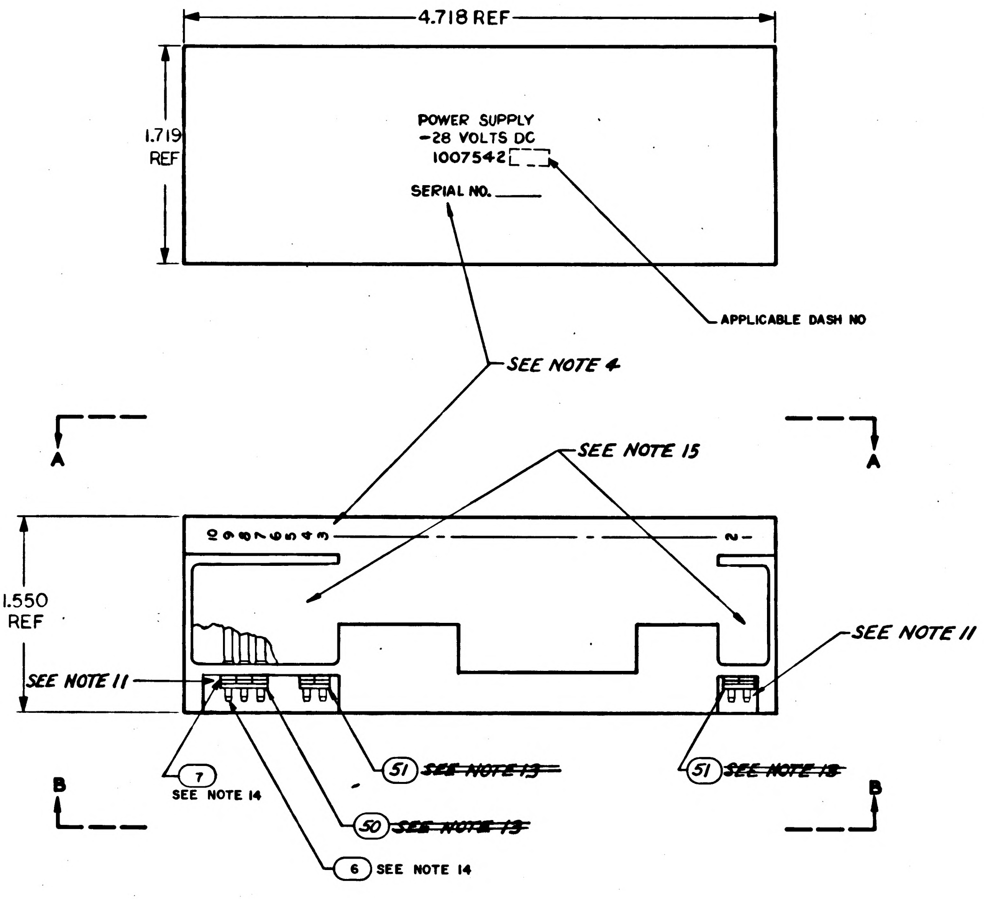
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17314		15 MAR 65	RJJ
B		REVISED PER TDRR 18104		APR 65	
C		REVISED PER TDRR 19404		2 JUN 65	
D		REVISED PER TDRR 19436		3 JUN 65	HCK
E		REVISED PER TDRR 19508		7 JUN 65	
F		REVISED PER TDRR 20143		JUN 65	
G		REVISED PER TDRR 21278		31 JUL 65	
H		REVISED PER TDRR 21773		SEP 65	
J		REVISED PER TDRR 22962		OCT 65	
K		REVISED PER TDRR 23888		16 NOV 65	
L		REVISED PER TDRR 25056		JAN 66	
M		REVISED PER TDRR 26397		24 FEB 66	

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. PROCURE PER PS 1007042.
3. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND 1002009. METHOD J.
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. CONNECTIONS TO Q5, Q6, CR8, & CR9 SHALL BE MADE BY SOLDERING PER ND 1002071.
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
7. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
8. MOUNTING TORQUE SHALL BE AS FOLLOWS:
   - (57) 12 ±2 INCH POUNDS
   - (34) 24 ±2 INCH POUNDS
9. ON ITEMS ②, ③, ④ AND ⑤ BROKEN PATH INDICATES SLEEVING

   K : CATHODE SIDE OF DIODE
   FT( ): FEED THRU
   PLUS(+): POSITIVE SIDE OF CAPACITOR
   C : COLLECTOR LEAD OF TRANSISTOR
   B : BASE
   E : EMITTER
   C_2 : COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B_2 : BASE
   E_2 : EMITTER

10. UNLESS OTHERWISE SPECIFIED:
    a. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    b. WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. AREA INDICATED MUST BE FREE OF ENCAPSULATING COMPOUND.
12. TYPICAL SLEEVING FOR: R1, R2, R3, R9 THRU R15 & CR2 THRU CR7.
13. ~~BOND (50) AND (51) TO ⑦ PER ND 1002237.~~
14. ASSEMBLE PER ND1002136.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
16. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
17. APPLY SEALING COMPOUND PER MIL-S-22473, GRADE A.
18. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
20. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
21. MOISTUREPROOF PER ND1002292 AS REQUIRED BY FIND NO. (61) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.



LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 021	QUANTITY REQUIRED 011	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
AR	—		61	SEE NOTE 21	MOISTUREPROOFING
AR	AR		60	1010848-2	WIRE, ELECTRICAL-NICKEL
1	1		59	1010966-1	TRANSISTOR
1	1		58	1008309	HEATSINK
2	2		57	1010777-1	SEMICONDUCTOR DEVICE, DIODE
2	2		56	1008071-4	WASHER, FLAT
2	2		55	2008013-9	TERMINAL LUG, SOLDER, FLAT
2	2		54	1008024-2	WASHER, INSULATOR
2	2		53	1008021-1	BUSHING, INSULATOR
2	2		52	1008024-1	WASHER, INSULATOR
╳	╳		REF	1010025	SCHEMATIC
2	2		51	1008540-2	GASKET, CONNECTOR MINIATURE
1	1		50	1008540-3	GASKET, CONNECTOR MINIATURE
AR	AR		49	1006776-20	INSULATION SLEEVING ELECTRICAL
	~~2~~		~~48~~	~~MS35338-81~~	~~WASHER, LOCK~~
	~~2~~		~~47~~	~~1008070-9~~	~~WASHER, FLAT~~
1	1		46	MS35338 78	WASHER, LOCK
1	1		45	1008070-5	WASHER, FLAT
1	1		44	MS35234-22	SCREW, PAN HEAD
AR	AR		43	1006776-22	INSULATION. SLEEVING
AR	AR		42	1006776-21	INSULATION SLEEVING
AR	AR		41	1006757-9	WIRE .032 DIA
	~~AR~~		~~40~~	~~1006757-8~~	~~WIRE .020 DIA~~
AR	AR		39	1006757-1	RIBBON .010 X .020
1	1		38	1010339	TRANSFORMER
1	1		37	1010323	TRANSFORMER
2	2		36	1010398-2	TRANSISTOR
1	1		35	1010376-4	TRANSISTOR
1	1		34	1010273-2	TRANSISTOR
	~~1~~		~~33~~	~~1006752~~	~~TRANSISTOR~~
6	6		32	1010385	SEMICONDUTOR DEVICE DIODE
	~~2~~		~~31~~	~~1010322-001~~	~~SEMICONDUCTOR DEVICE DIODE~~
1	1		30	1010372-22	SEMICONDUCTOR DEVICE, DIODE
2	2		29	1010410-13	CAPACITOR FIXED
5	5		28	1010438-1	CAPACITOR FIXED
1	1		27	1006789-002	CAPACITOR FIXED
2	2		26	1006777-30	CAPACITOR FIXED
2	2		25	1010316-40	CAPACITOR, FIXED
2	2		24	1010369-141	RESISTOR, FIXED
2	2		23	1010364-381	RESISTOR, FIXTED
2	2		22	1010363-557	RESISTOR, FIXED
2	2		21	1006750-74	RESISTOR, FIXED
1	1		20	1006750-66	RESISTOR, FIXED
3	3		19	1006750-56	RESISTOR, FIXED
1	1		18	1006750-49	RESISTOR, FIXED
2	2		17	1006750-19	RESISTOR, FIXED
2	2		16	1008025-2	INSULATOR, BUSHING
1	1		15	1008025-1	INSULATOR, BUSHING
2	2		14	1008021-2	BUSHING, INSULATOR
2	2		13	1008071-5	WASHER, FLAT
2	2		12	1008024-4	WASHER, INSULATOR
2	2		11	1008024-3	WASHER, INSULATOR
2	2		10	MS20341-416B	NUT
2	2		9	MS20341-10B	NUT
1	1		8	MS35650-44	NUT
10	10		7	1006775	INSULATOR
10	10		6	1006782-5	CONTACT, WRAPOST-MALE
	~~1~~		~~5~~	~~1015697~~	~~INSULATOR~~
	~~1~~		~~4~~	~~1015696~~	~~INSULATOR~~
	~~1~~		~~3~~	~~1015695~~	~~INSULATOR~~
	~~1~~		~~2~~	~~1015694~~	~~INSULATOR~~
	~~1~~		~~1~~	~~1015693~~	~~HEATSINK~~

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1021221		
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	±.005	+
-	±.02	-

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN [illegible] DATE 13 AUG 64
CHECKED Q. Udovich 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

POWER SUPPLY, -28 VDC
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007542
SCALE 2:1
SHEET 1 OF 2

MIL 10775-P

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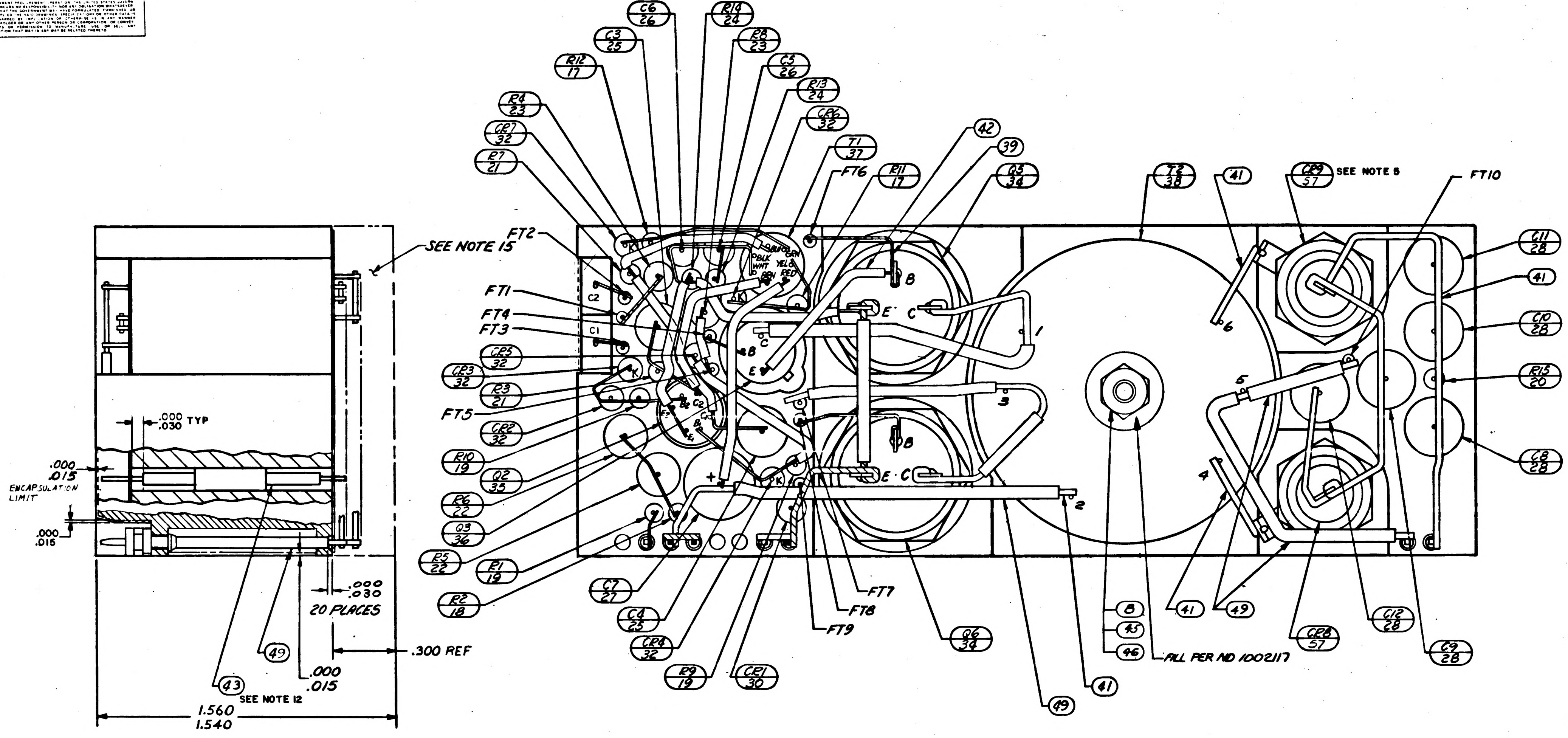
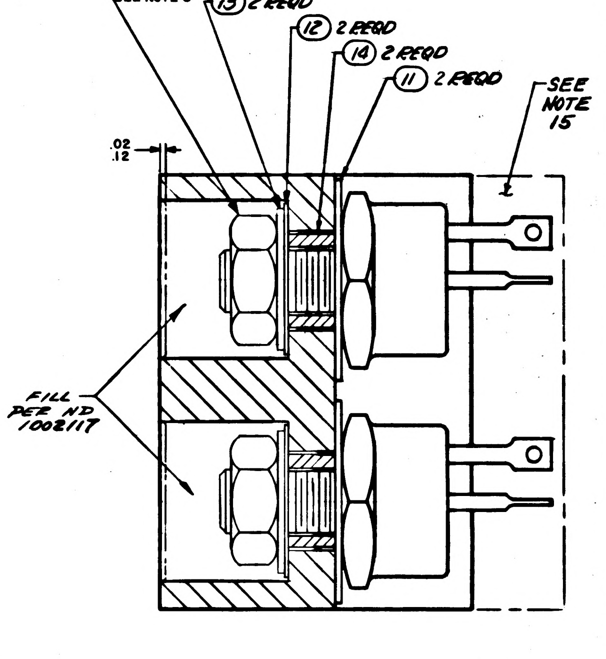
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17314		15 MAR 65	RJJ
B		REVISED PER TDRR 18104		12 APR 65	EF
C		REVISED PER TDRR 19404		2 JUN 65	EF
D		REVISED PER TDRR 19436		3 JUN 65	HCK
E		REVISED PER TDRR 19508		7 JUN 65	
F		REVISION STATUS CHANGED		19 JUN 65	DKD
G		REVISED PER TDRR 21278		31 JUL 65	
H		REVISION STATUS CHANGED		1 SEP 65	
J		REVISED PER TDRR 22962		12 OCT 65	
K		REVISED PER TDRR 23888		13/10/65	
L		REVISION STATUS CHANGED		10 JAN 66	
M		REVISION STATUS CHANGED		24 FEB 66	RP


SEE NOTE 15
.000 .030 TYP
.000 .015
ENCAPSULATION LIMIT
.000 .015
.000 .030
20 PLACES
.300 REF
.000 .015
43 SEE NOTE 12
49
1.560 1.540
C6 26
R14 24
C3 25
R8 23
R12 17
C5 26
R4 23
R13 24
CR7 32
CR6 32
E7 21
T1 37
FT6
R11 17
42
39
Q5 34
T2 38
41
CR9 37 SEE NOTE 8
FT10
FT2
FT1
FT4
FT3
CR5 32
CR3 32
R3 21
FT5
CR2 32
R10 19
Q2 35
R6 22
Q3 36
R5 22
R1 19
R2 18
C7 27
C4 25
CR4 32
R9 19
CE1 30
FT7
FT8
FT9
Q6 34
8
45
46
FILL PER ND 1002117
41
49
49
41
CR8 37
C12 28
C9 28
C11 28
41
C10 28
R15 20
C8 28
C2
C1
B
E
C
1
2
3
4
5
6

VIEW A-A
BEFORE ENCAPSULATION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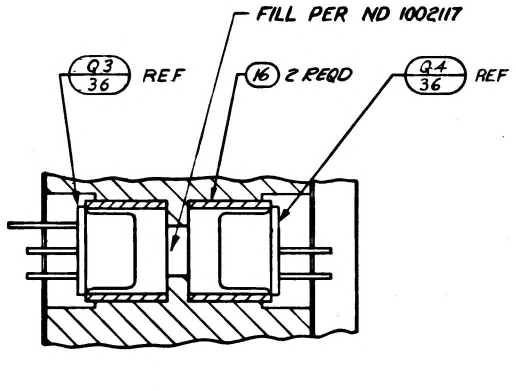
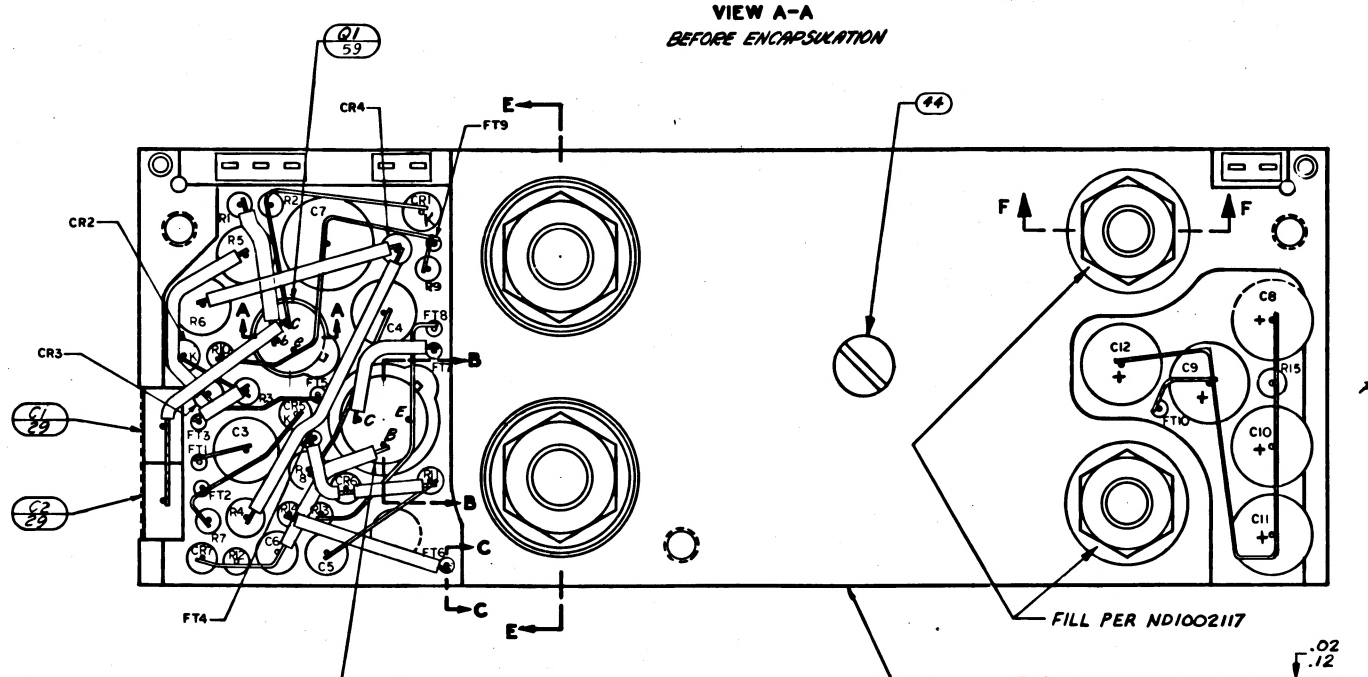
13 2 REQD
12 2 REQD
14 2 REQD
11 2 REQD
SEE NOTE 15
.02 .12
FILL PER ND 1002117

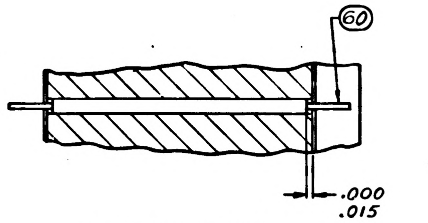
SECTION E-E


FILL PER ND 1002117
Q3 36 REF
16 2 REQD
Q4 36 REF

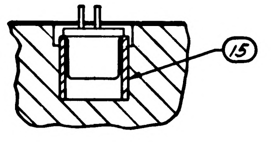
PARTIAL SECTION B-B


Q1 59
CR4
FT9
E
CR2
CR3
C1 29
C2 29
FT4
Q4 36
44
F
F
CR1
R1
R2
R5
C7
R6
FT8
C4
R3
FT3
FT1
C3
FT2
R4
R7
C6
C5
FT6
B
B
C
C
E
C8
C12
C9
R15
FT10
C10
C11
FILL PER ND1002117

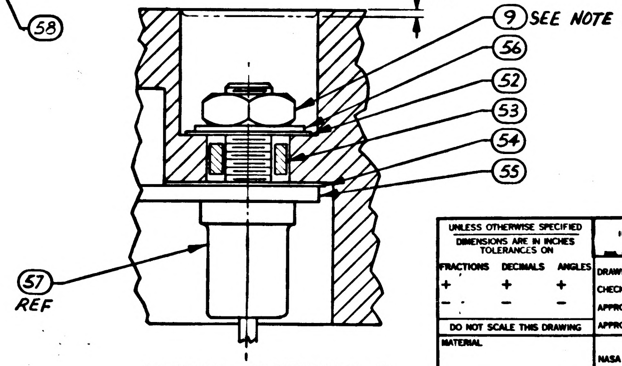
VIEW B-B
BEFORE ENCAPSULATION



PARTIAL SECTION C-C
TYPICAL FOR FT1 THRU FT10



PARTIAL SECTION A-A


58
.02 .12
9 SEE NOTE 8 & 16
56
52
53
54
55
57 REF

PARTIAL SECTION F F

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN 13 AUG 64 DATE
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APPROVAL
APPROVAL 9-5-64
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MANNED
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POWER SUPPLY -28 VDC
MODULE ASSEMBLY

CODE IDENT NO. 80230
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1007542
SCALE 4:1
SHEET 2 OF 2

1007542 M

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WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

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E		REVISED PER TDRR 19508		7 JUN 65	
F		REVISED PER TDRR 20143		[illegible] JUN 65	
G		REVISED PER TDRR 21278		31 JUL 65	
H		REVISED PER TDRR 21773		[illegible] 65	
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K		REVISED PER TDRR 23888		[illegible] 65	
L		REVISED PER TDRR 25056		JAN 66	
M		REVISED PER TDRR 26397		24 FEB 66	
N		REVISED PER TDRR 30602			

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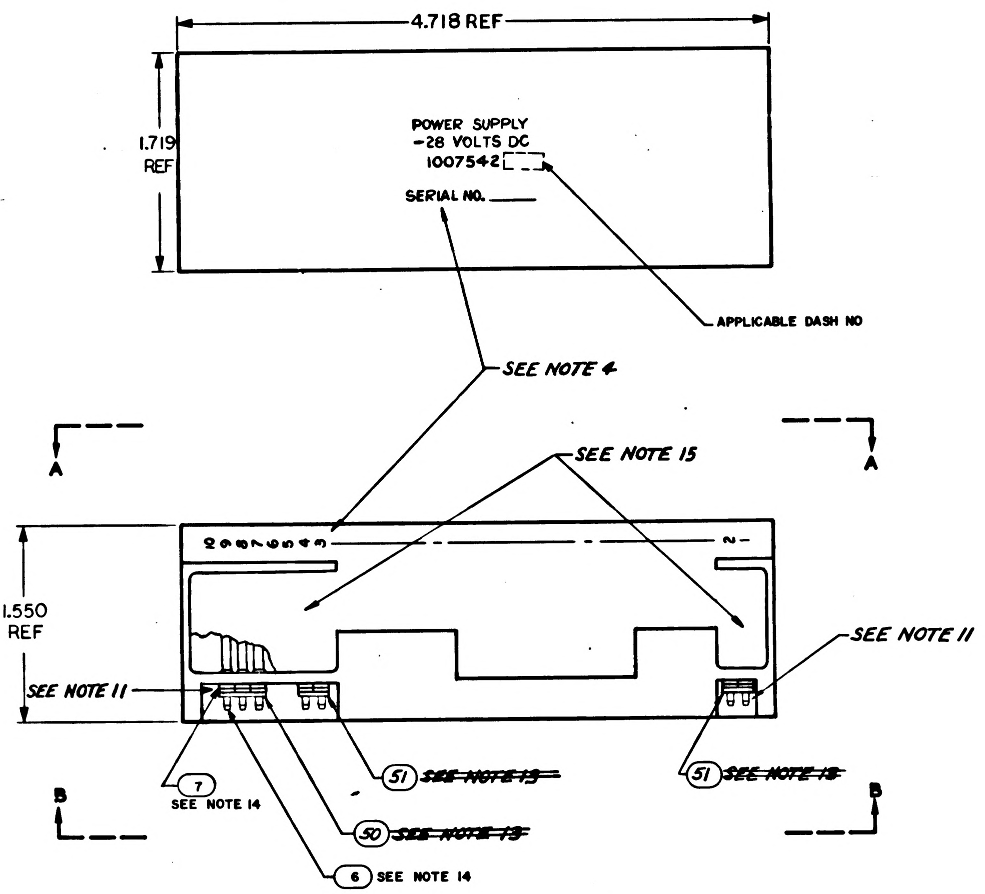
18. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
20. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
21. MOISTUREPROOF PER ND 1002292 AS REQUIRED BY FIND NO. (61) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.



LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED				EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		021	011				
		AR	—		61	SEE NOTE 21	MOISTUREPROOFING
		AR	AR		60	1010848-2	WIRE, ELECTRICAL-NICKEL
		1	1		59	1010966-1	TRANSISTOR
		1	1		58	1008309	HEATSINK
		2	2		57	1010777-1	SEMICONDUCTOR DEVICE, DIODE
		2	2		56	1008071-4	WASHER, FLAT
		2	2		55	2008013-9	TERMINAL LUG, SOLDER, FLAT
		2	2		54	1008024-2	WASHER, INSULATOR
		2	2		53	1008021-1	BUSHING, INSULATOR
		2	2		52	1008024-1	WASHER, INSULATOR
		☒	☒		REF	1010025	SCHEMATIC
		2	2		51	1008540-2	GASKET, CONNECTOR MINIATURE
		1	1		50	1008540-3	GASKET, CONNECTOR MINIATURE
		AR	AR		49	1006776-20	INSULATION SLEEVING ELECTRICAL
			~~2~~		~~48~~	~~MS35338-81~~	~~WASHER, LOCK~~
			~~2~~		~~47~~	~~1008970-9~~	~~WASHER, FLAT~~
		1	1		46	MS35338-78	WASHER, LOCK
		1	1		45	1008070-5	WASHER, FLAT
		1	1		44	MS 35234-22	SCREW, PAN HEAD
		AR	AR		43	1006776-22	INSULATION, SLEEVING
		AR	AR		42	1006776-21	INSULATION SLEEVING
		AR	AR		41	1006757-21	WIRE .032 DIA
		—	~~AR~~		~~40~~	~~1006757-8~~	~~WIRE .020 DIA~~
		AR	AR		39	1006757-1	RIBBON .010 X.020
		1	1		38	1010339	TRANSFORMER
		1	1		37	1010323	TRANSFORMER
		2	2		36	1010398-2	TRANSISTOR
		1	1		35	1010376-4	TRANSISTOR
		1	1		34	1010273-2	TRANSISTOR
			~~1~~		~~33~~	~~1006752~~	~~TRANSISTOR~~
		6	6		32	1010385	SEMICONDUTOR DEVICE DIODE
			~~2~~		~~31~~	~~1010322-001~~	~~SEMICONDUCTOR DEVICE DIODE~~
		1	1		30	1010372-22	SEMICONDUCTOR DEVICE, DIODE
		2	2		29	1010410-13	CAPACITOR FIXED
		5	5		28	1010438-1	CAPACITOR FIXED
		1	1		27	1006789-002	CAPACITOR FIXED
		2	2		26	1006777-30	CAPACITOR FIXED
		2	2		25	1010316-40	CAPACITOR, FIXED
		2	2		24	1010369-141	RESISTOR, FIXED
		2	2		23	1010364-381	RESISTOR, FIXTED
		2	2		22	1010363-557	RESISTOR, FIXED
		2	2		21	1006750-74	RESISTOR, FIXED
		1	1		20	1006750-66	RESISTOR, FIXED
		3	3		19	1006750-56	RESISTOR, FIXED
		1	1		18	1006750-49	RESISTOR, FIXED
		2	2		17	1006750-19	RESISTOR, FIXED
		2	2		16	1008025-2	INSULATOR, BUSHING
		1	1		15	1008025-1	INSULATOR, BUSHING
		2	2		14	1008021-2	BUSHING, INSULATOR
		2	2		13	1008071-5	WASHER, FLAT
		2	2		12	1008024-4	WASHER, INSULATOR
		2	2		11	1008024-3	WASHER, INSULATOR
		2	2		10	MS20341-416B	NUT
		2	2		9	MS20341-10B	NUT
		1	1		8	MS35650-44	NUT
		10	10		7	1006775	INSULATOR
		10	10		6	1006782-5	CONTACT, WRAPOST-MALE
			~~1~~		~~5~~	~~1015697~~	~~INSULATOR~~
			~~1~~		~~4~~	~~1015696~~	~~INSULATOR~~
			~~1~~		~~3~~	~~1015695~~	~~INSULATOR~~
			~~1~~		~~2~~	~~1015694~~	~~INSULATOR~~
			~~1~~		~~1~~	~~1015693~~	~~HEATSINK~~

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1021221		
1007571		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ ±.005 +
- ±.02 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN [illegible] DATE 13 AUG 64
CHECKED [illegible] 27 AUG 64
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLY, -28 VDC
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007542
SCALE 2:1
SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 13233					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.

NOTES

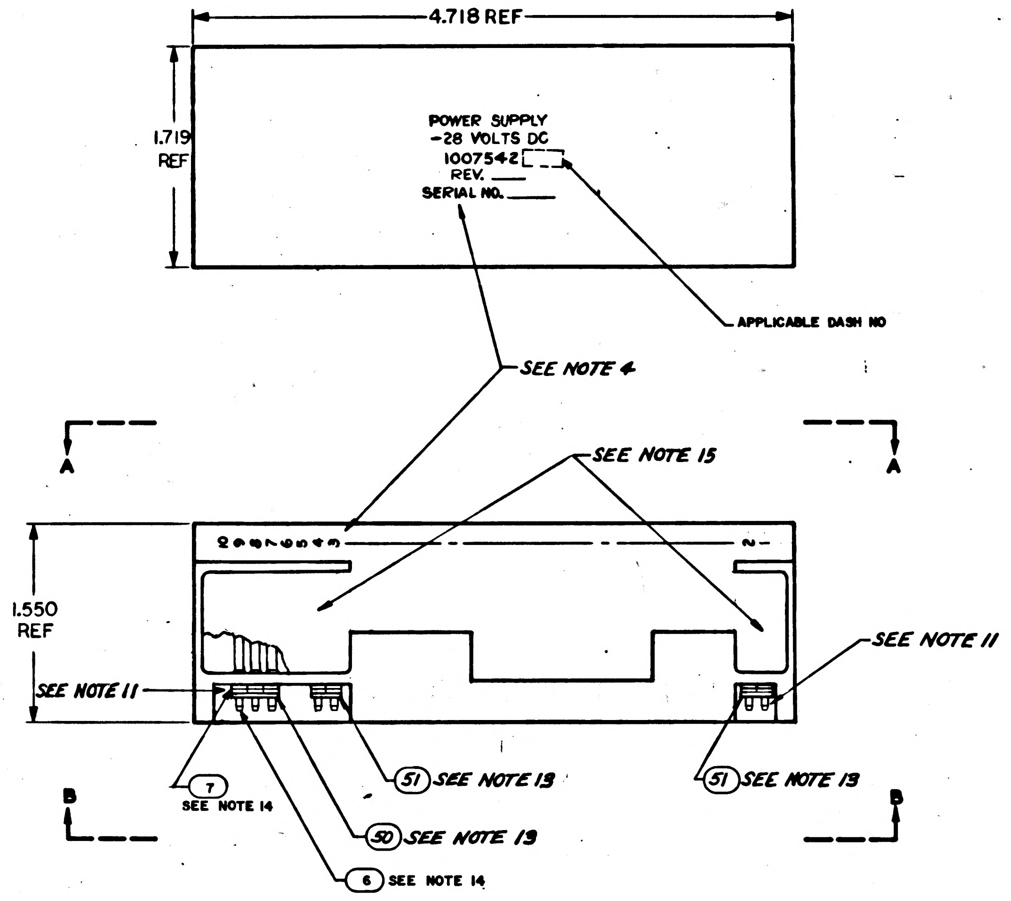
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. PROCURE PER PS 1007042.
3. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND 1002009. METHOD C
4. MARK PIN NUMBERS .060/.100 HIGH (WHITE) ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
5. CONNECTIONS TO Q5, Q6, CR8, & CR9 SHALL BE MADE BY SOLDERING PER ND 1002071.
6. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
7. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
8. MOUNTING TORQUE SHALL BE AS FOLLOWS:

   (31) 12 ±2 INCH POUNDS
   (34) 24 ±2 INCH POUNDS

9. ON ITEMS (2), (3), (4) AND (5) BROKEN PATH INDICATES SLEEVING

   K : CATHODE SIDE OF DIODE
   FT( ): FEED THRU
   PLUS(+) : POSITIVE SIDE OF CAPACITOR
   C : COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C_2 : COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B_2: BASE
   E_2: EMITTER

10. UNLESS OTHERWISE SPECIFIED:
    a. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    b. WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. AREA INDICATED MUST BE FREE OF ENCAPSULATING COMPOUND.
12. TYPICAL SLEEVING FOR: R1, R2, R3, R9 THRU R15 & CR2 THRU CR7.
13. BOND (50) AND (51) TO (7) PER ND 1002237.
14. ASSEMBLE PER ND1002136.
15. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SHALL NOT EXCEED .015. REMOVE ALL FLASHING.



QUANTITY REQUIRED				EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			OH				
			☒		REF	1010025	SCHEMATIC
			2		51	1008540-2	GASKET, CONNECTOR MINIATURE
			1		50	1008540-3	GASKET, CONNECTOR MINIATURE
			AR		49	1006776-20	INSULATION SLEEVING ELECTRICAL
			2		48	MS35338-81	WASHER, LOCK
			2		47	1008070-9	WASHER, FLAT
			1		46	MS35338-78	WASHER, LOCK
			1		45	1008070-5	WASHER, FLAT
			1		44	MS35234-22	SCREW, PAN HEAD
			AR		43	1006776-22	INSULATION SLEEVING
			AR		42	1006776-21	INSULATION SLEEVING
			AR		41	1006757-9	WIRE .032 DIA
			AR		40	1006757-8	WIRE .020 DIA
			AR		39	1006757-1	RIBBON .010 X .020
			1		38	1010339	TRANSFORMER
			1		37	1010323	TRANSFORMER
			2		36	1010328-2	TRANSISTOR
			1		35	1010376-4	TRANSISTOR
			1		34	1010273-2	TRANSISTOR
			1		33	1006752	TRANSISTOR
			6		32	1010385	SEMICONDUTOR DEVICE DIODE
			2		31	1010322-001	SEMICONDUCTOR DEVICE DIODE
			1		30	1010372-22	SEMICONDUCTOR DEVICE, DIODE
			2		29	1010410-13	CAPACITOR FIXED
			5		28	1010438-1	CAPACITOR FIXED
			1		27	1006789-002	CAPACITOR FIXED
			2		26	1006777-30	CAPACITOR FIXED
			2		25	1010316-40	CAPACITOR, FIXED
			2		24	1010369-141	RESISTOR, FIXED
			2		23	1010364-381	RESISTOR, FIXTED
			2		22	1010363-557	RESISTOR, FIXED
			2		21	1006750-74	RESISTOR, FIXED
			1		20	1006750-66	RESISTOR, FIXED
			3		19	1006750-56	RESISTOR, FIXED
			1		18	1006750-49	RESISTOR, FIXED
			2		17	1006750-19	RESISTOR, FIXED
			2		16	1008025-2	INSULATOR, BUSHING
			1		15	1008025-1	INSULATOR, BUSHING
			2		14	1008021-2	BUSHING, INSULATOR
			2		13	1008071-5	WASHER, FLAT
			2		12	1008024-4	WASHER, INSULATOR
			2		11	1008024-3	WASHER, INSULATOR
			2		10	MS20341-416B	NUT
			2		9	MS20341-10B	NUT
			1		8	MS20341-4A	NUT
			10		7	1006775	INSULATOR
			10		6	1006782-5	CONTACT, WRAPOST-MALE
			1		5	1015697	INSULATOR
			1		4	1015696	INSULATOR
			1		3	1015695	INSULATOR
			1		2	1015694	INSULATOR
			1		1	1015693	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS ±.005 ±.02 ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 18 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL A. R. Ted 10-5-64
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLY, -28 VDC
MODULE ASSY

CODE IDENT NO.
SIZE E
1007542
SCALE 2:1
SHEET 1 OF 2

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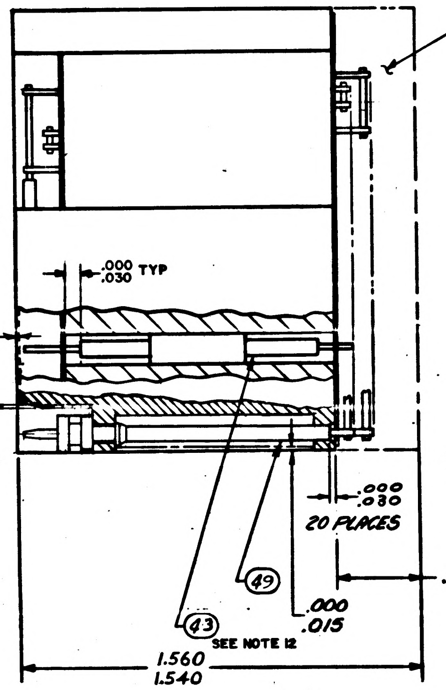
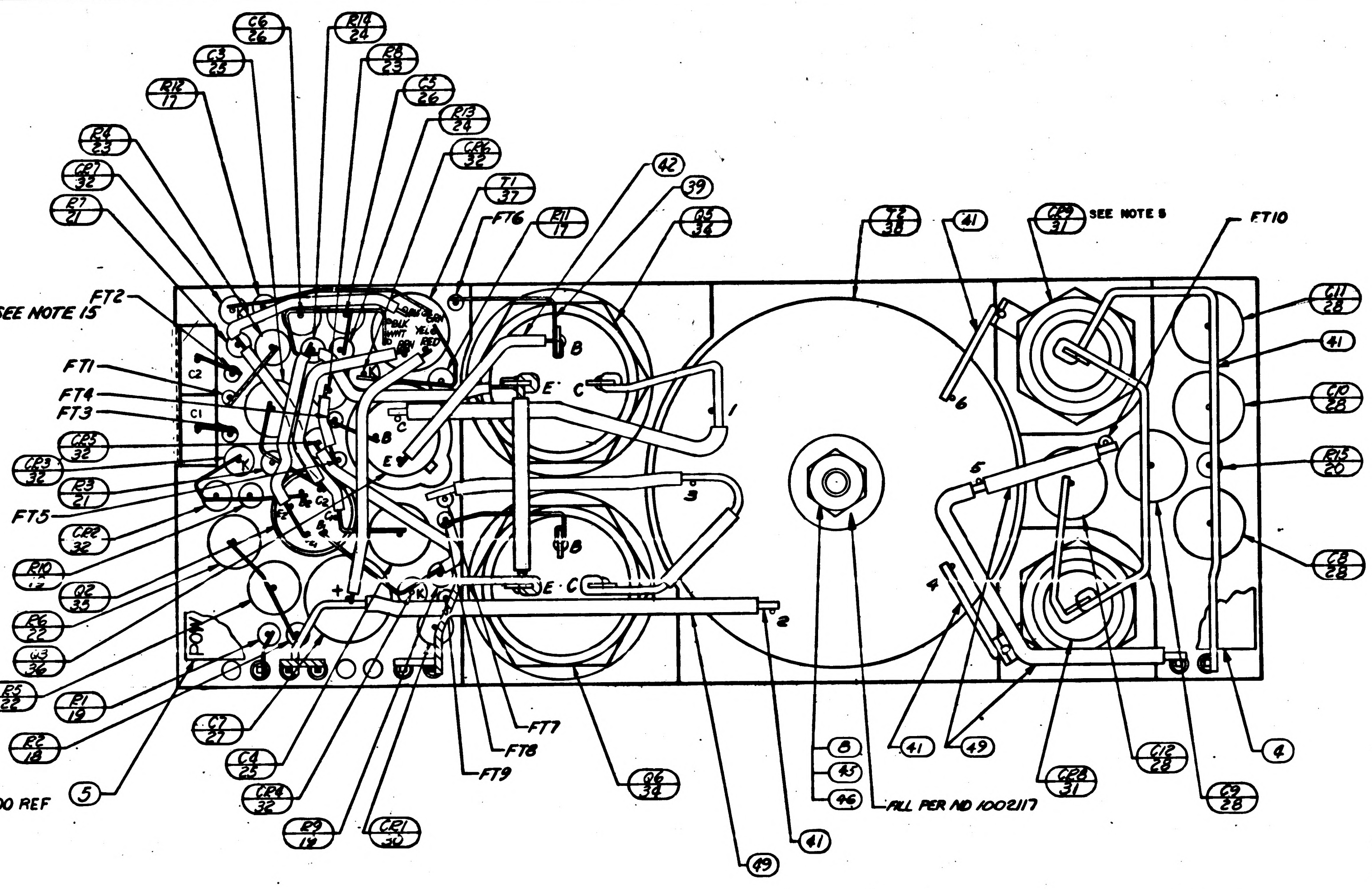
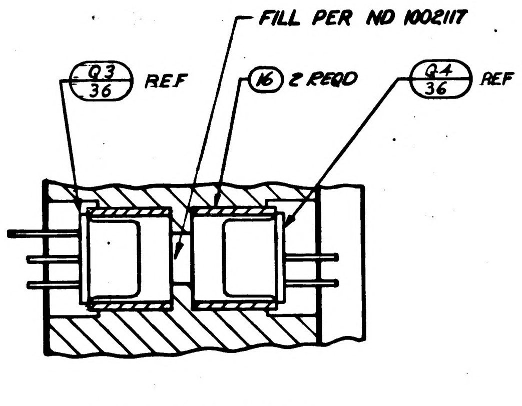
REVISIONS 13253					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.

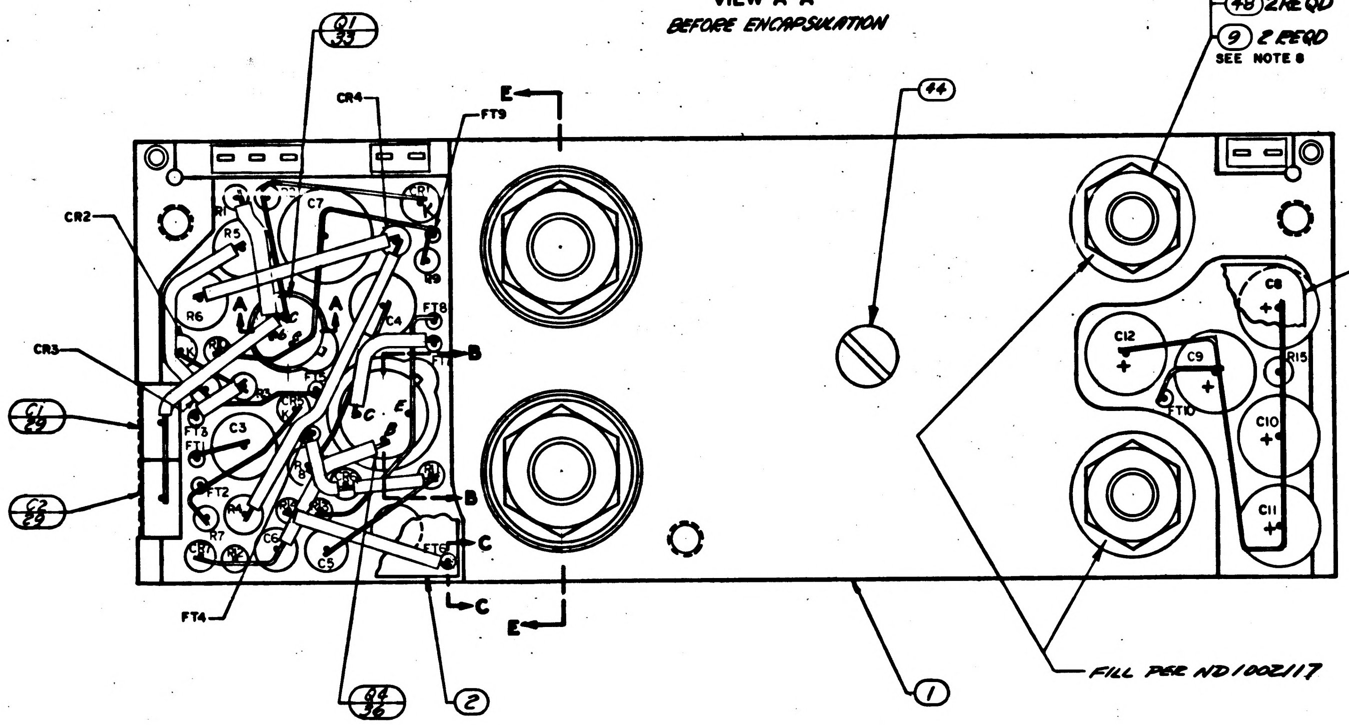

SEE NOTE 15
.000 TYP
.030
.000
.005
.000
.016
.000
.030
20 PLACES
.300 REF
49
43
SEE NOTE 12
.000
.015
1.560
1.540


C6 26
R14 24
C3 25
R8 23
C5 26
R12 17
R13 24
R4 23
CR6 32
CR7 32
T1 37
R7 21
FT6
R11 17
42
39
Q5 34
T2 38
41
CR9 31
SEE NOTE 5
FT10
FT2
FT1
FT4
FT3
CR3 32
CR5 32
R3 21
FT5
CR2 32
R10 18
Q2 35
R6 22
Q3 36
R5 22
R1 19
R2 18
5
C7 27
C4 25
CR4 32
R9 19
CR1 30
FT7
FT8
FT9
Q6 34
49
41
8
45
46
FILL PER ND 1002117
41
49
CR8 31
C12 28
C9 28
4
C11 28
41
C10 28
R15 20
C8 28
C2
C1
B
E
C
1
2
3
4
5
6

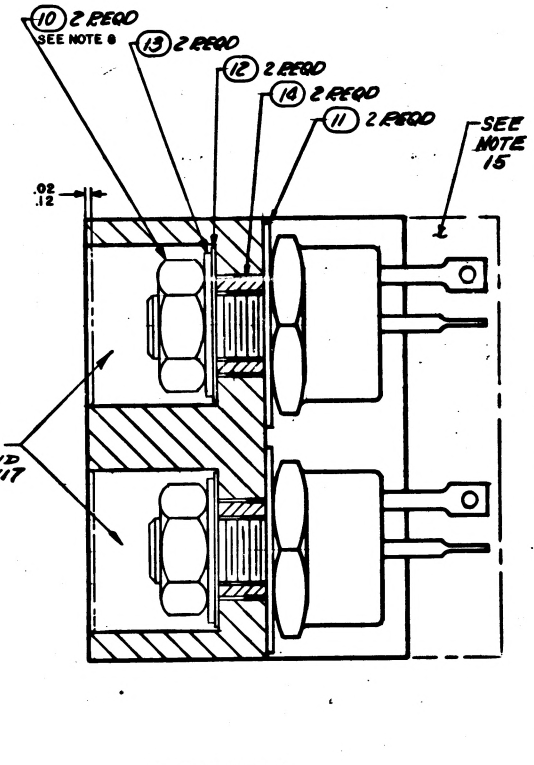
VIEW A-A
BEFORE ENCAPSULATION


FILL PER ND 1002117
Q3 36 REF
16 2 REQD
Q4 36 REF

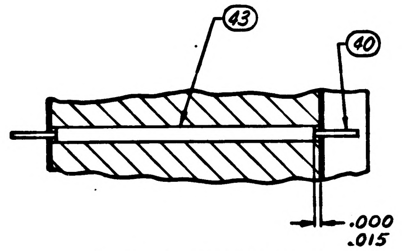
PARTIAL SECTION B-B


Q1 33
CR4
FT9
E
CR2
CR3
C1 29
C2 29
FT4
Q4 36
2
1
44
47 2 REQD
48 2 REQD
9 2 REQD
SEE NOTE 8
3
C7
R1
R5
R6
C3
C4
C5
C6
FT1
FT2
FT6
FT8
FT10
C8
C9
C10
C11
C12
R15
R7
B
C
FILL PER ND 1002117

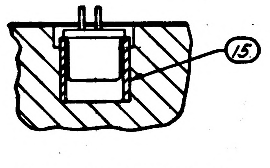
VIEW B-B
BEFORE ENCAPSULATION


10 2 REQD
SEE NOTE 8
13 2 REQD
12 2 REQD
14 2 REQD
11 2 REQD
SEE NOTE 15
.02
.12
FILL PER ND 1002117

SECTION E-E


43
40
.000
.015

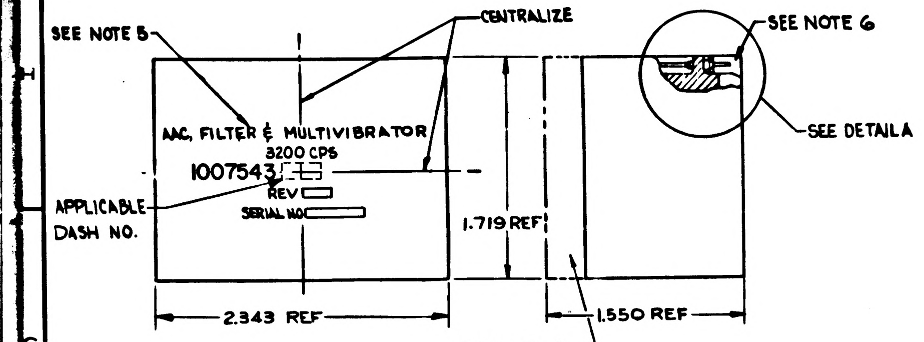
PARTIAL SECTION C-C
TYPICAL FOR FT1 THRU FT10



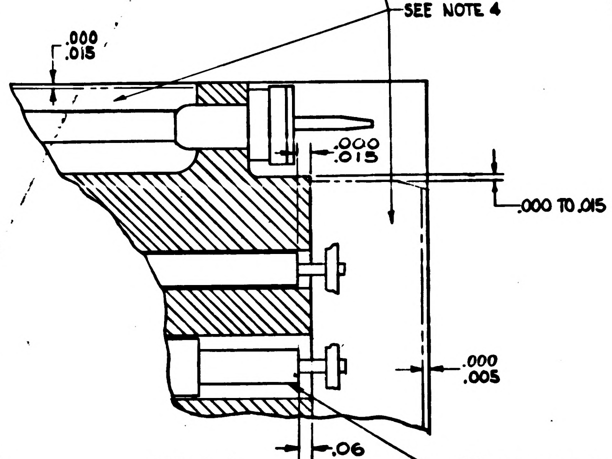
PARTIAL SECTION A-A

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
FRACTIONS + – DECIMALS + – ANGLES + –	ACSP PN			
	DRAWN DATE 13 AUG 64	POWER SUPPLY -28 VDC MODULE ASSEMBLY		
	CHECKED A. Udovich 27 AUG 64			
DO NOT SCALE THIS DRAWING	APPROVAL			
	APPROVAL 10-5-64			
MATERIAL	NASA APPROVAL 10-6-64	CODE IDENT NO.	SIZE E	1007542
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 4:1		SHEET 2 OF 2

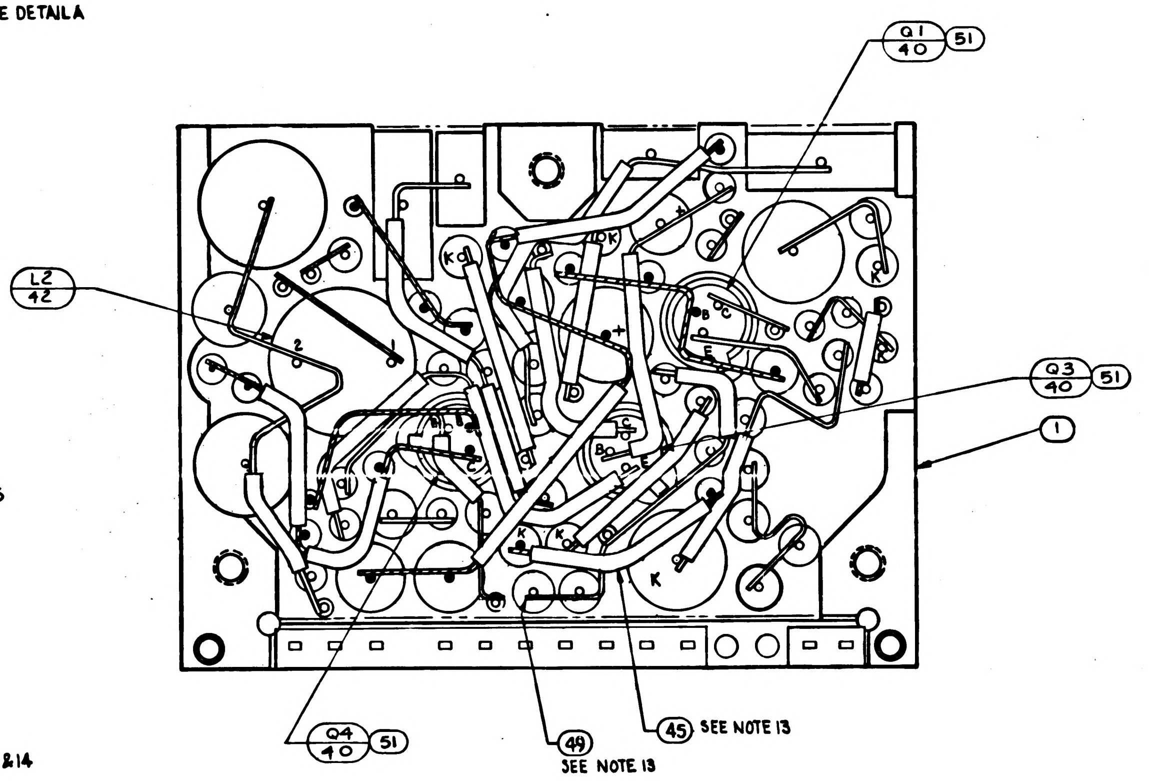
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A	-	REVISED PER TDRR 17339		3 MAR 65	



SCALE 2:1



DETAIL A



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009, METHOD C
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
4. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
5. MARK PIN NUMBER .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
7. ON ITEMS 2 AND 3:
   - A. BROKEN PATHS INDICATE INSULATION SLEEVING,
   - B. K INDICATES CATHODE SIDE OF DIODE,
   - C. FT( ) INDICATES FEED THROUGH,
   - D. PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   - E. C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   - F. B INDICATES BASE LEAD OF TRANSISTOR,
   - G. E INDICATES EMITTER LEAD OF TRANSISTOR,
   - H. $C_{( )}$ INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR,
   - I. $B_{( )}$ INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR,
   - J. $E_{( )}$ INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR,
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. ASSEMBLE PER ND-1002136
10. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. BOND ITEM 53 AND ITEM 54 TO ITEM 46 PER ND1002237.
12. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007043. PART TO BE SELECTED FROM CHART
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR R5 THRU R28, R32, R33, AND CR3
15. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT14
16. PROCURE PER PS1007043.
17. BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.

TABLE C

SELECTION CHART	
PART NUMBER	VALUE
1010410-2	240 PF
-3	270 PF
-4	300 PF
-5	330 PF
-6	360 PF
-7	390 PF
-8	430 PF
-9	470 PF
-10	510 PF
-11	560 PF
-12	620 PF
-13	680 PF
-14	750 PF
-15	820 PF
-16	910 PF
1010410-17	1000 PF

TABLE B

SELECTION CHART	
PART NUMBER	VALUE
1010264-21	.047UF
-22	.056UF
-23	.068UF
-24	.082UF
1010264-25	.100UF

TABLE A

SELECTION CHART	
PART NUMBER	VALUE
1010364-673	158.0K
-635	100.0K
-609	73.2 K
-593	60.4 K
-577	49.9 K
-565	43.2 K
-553	37.4 K
-543	33.2 K
-533	29.4 K
-525	26.7 K
-517	24.3 K
-509	22.1 K
-505	21.0 K
-501	20.0 K
-495	18.7 K
-491	17.8K
-487	16.9 K
-483	16.2 K
-479	15.4 K
-475	14.7 K
-469	13.7 K
-465	13.0K
-461	12.4 K
-457	11.8 K
-455	11.5 K
-451	11.0K
-447	10.5K
-443	10.0 K
-439	9.53K
-435	9.09K
-433	8.37K
-431	8.66K
-429	8.45K
-427	8.25K
-425	8.06K
-423	7.87K
-421	7.68K
-419	7.50K
-417	7.32 K
-415	7.15 K
-413	6.98 K
-411	6.81K
-409	6.65K
-407	6.49 K
-405	6.34K
-403	6.19 K
-401	6.04K
-399	5.90 K
1010364-397	5.76 K

011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
X		REF	1010047	SCHEMATIC, ELECTRICAL
1		54	1008540-11	GASKET, CONNECTOR-MINIATURE
1		53	1008540-2	GASKET, CONNECTOR-MINIATURE
AR		52	1006776-22	INSULATION SLEEVING, ELEC.
6		51	1008025-1	BUSHING, INSULATOR
~~1~~		~~50~~	~~1010364-559~~	~~RESISTOR, FIXED~~
AR		49	1006757-1	WIRE, NICKEL RIBBON .010 x .020
AR		48	1006776-20	SLEEVING, ELECT INSULATION
12		47	1006782-5	CONTACT, WRAPOST-MALE-MINIATURE
12		46	1006775	INSULATOR, WRAPOST-MALE MINIATURE
AR		45	1006776-21	SLEEVING, ELECT INSULATION
AR		44	1006757-8	WIRE FEED THROUGH
1		43	1010309-8	REACTOR
1		42	1010309-3	REACTOR
1		41	1010431	TRANSISTOR
6		40	1010397-1	TRANSISTOR
1		39	1010291-2	TRANSFORMER
13		38	1010385	SEMICONDUCTOR DEVICE, DIODE
1		37	1010346-1	SEMICONDUCTOR DEVICE, DIODE
1		36	1010286-11	SEMICONDUCTOR DEVICE, DIODE
2		35	SEE TABLE C	CAPACITOR-FIXED
1		34	SEE TABLE B	
1		33	1010264-29	
1		32	1010264-21	
1		31	1010264-17	
2		30	1006793-007	
1		29	1006755-81	
1		28	-69	
1		27	-64	
1		26	1006755-31	CAPACITOR - FIXED
1		25	1010369-140	RESISTOR-FIXED
2		24	1010369-95	
1		23	1010369-88	
1		22	SEE TABLE A	
2		21	1010364-693	
1		20	1010364-403	
1		19	1010364-251	
2		18	1010363-351	
1		17	1010278-56	
2		16	1006750-76	
1		15	-73	
3		14	-72	
1		13	-62	
2		12	-60	
3		11	-56	
2		10	-52	
2		9	-48	
1		8	-44	
2		7	-42	
1		6	-40	
1		5	-32	
1		4	1006750-19	RESISTOR - FIXED
1		3	1015728	INSULATOR, LOWER
1		2	1015727	INSULATOR, UPPER
1		1	1015726	HEATSINK

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - .XX ±.02 + -
- - .XXX±.005 - -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN S. Ayre DATE 17 AUG 64
CHECKED 27
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL

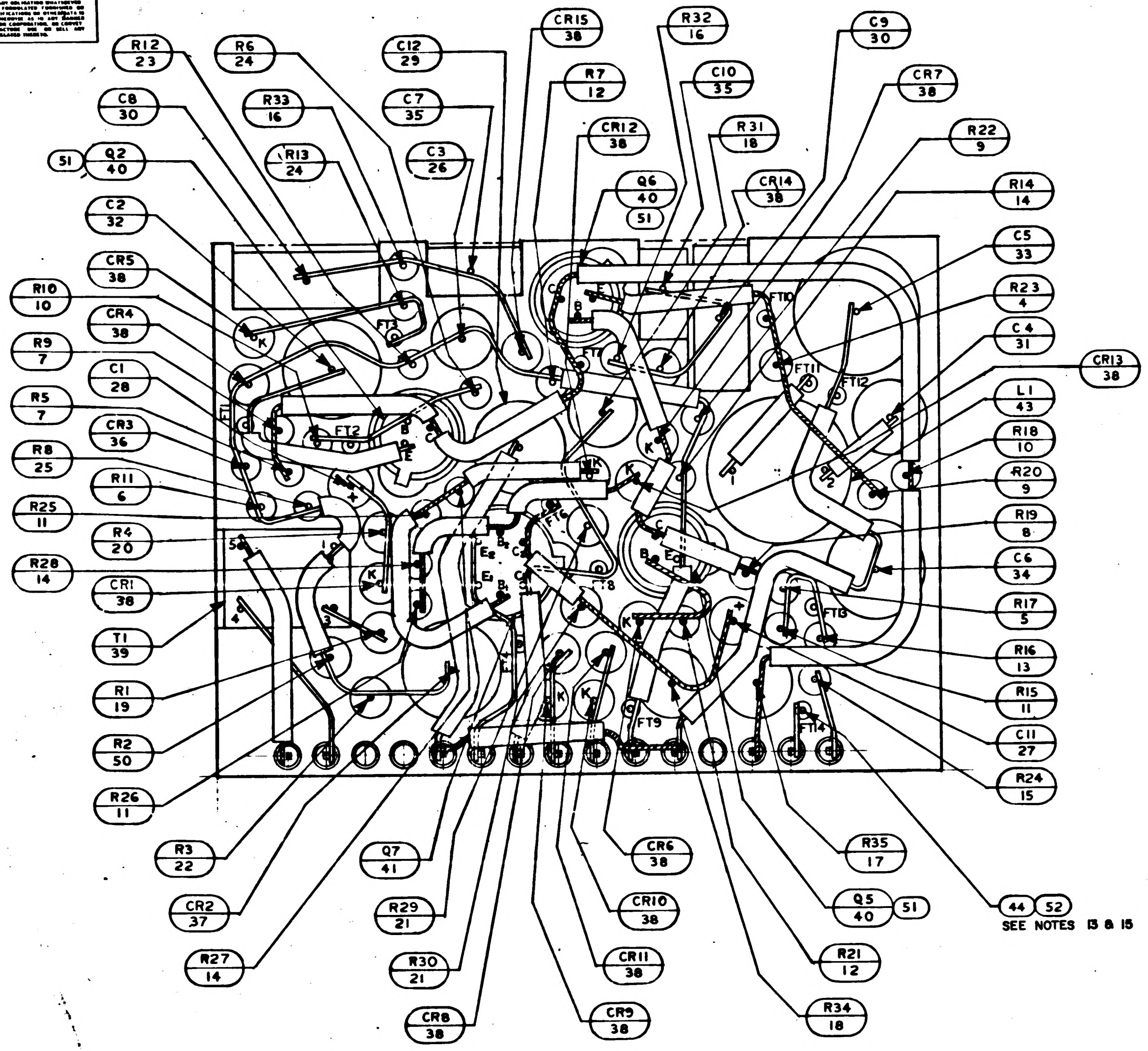
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AAC FILTER AND MULTIVIBRATOR
3200 CPS
ASSEMBLY

CODE IDENT NO.
SIZE E
1007543
SCALE 5:1
SHEET 1 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 13233			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 17339	65	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R6 24
C12 29
CR15 38
R32 16
C9 30
C8 30
R33 16
C7 35
R7 12
C10 35
CR7 38
51 Q2 40
R13 24
C3 26
CR12 38
R31 18
R22 9
Q6 40 51
CR14 38
R14 14
C2 32
C5 33
CR5 38
R10 10
R23 4
CR4 38
C4 31
CR13 38
R9 7
C1 28
L1 43
R5 7
CR3 36
R18 10
R8 25
R20 9
R11 6
R25 11
R19 8
R4 20
C6 34
R28 14
CR1 38
R17 5
T1 39
R16 13
R1 19
R15 11
C11 27
R2 50
R24 15
R26 11
R35 17
R3 22
Q7 41
CR6 38
Q5 40 51
44 52 SEE NOTES 13 & 15
CR2 37
R29 21
CR10 38
R27 14
R30 21
CR11 38
R21 12
CR8 38
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FT1
FT2
FT3
FT6
FT7
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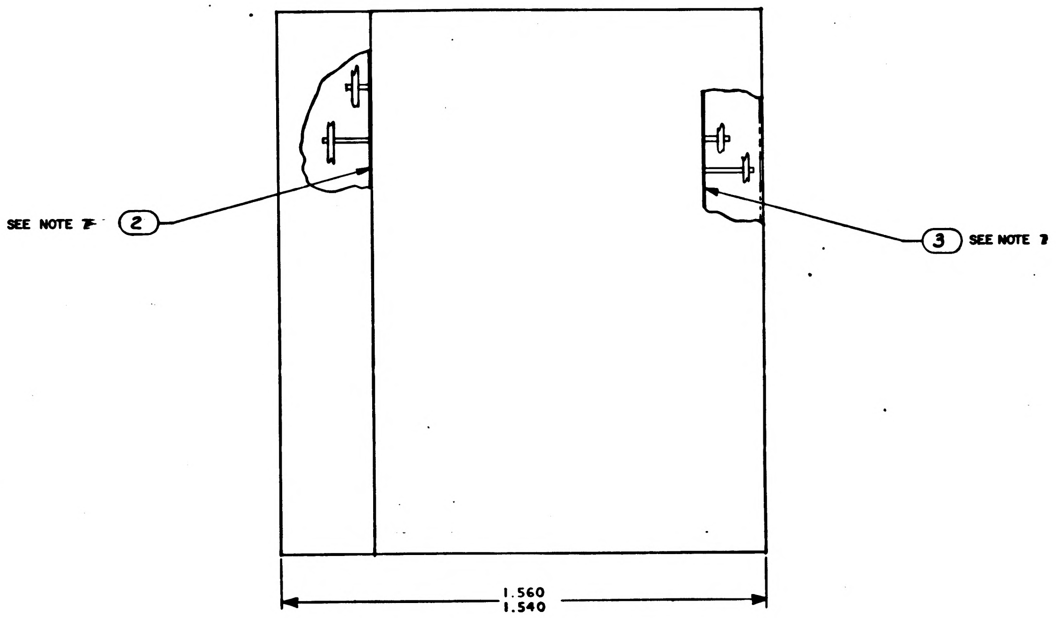
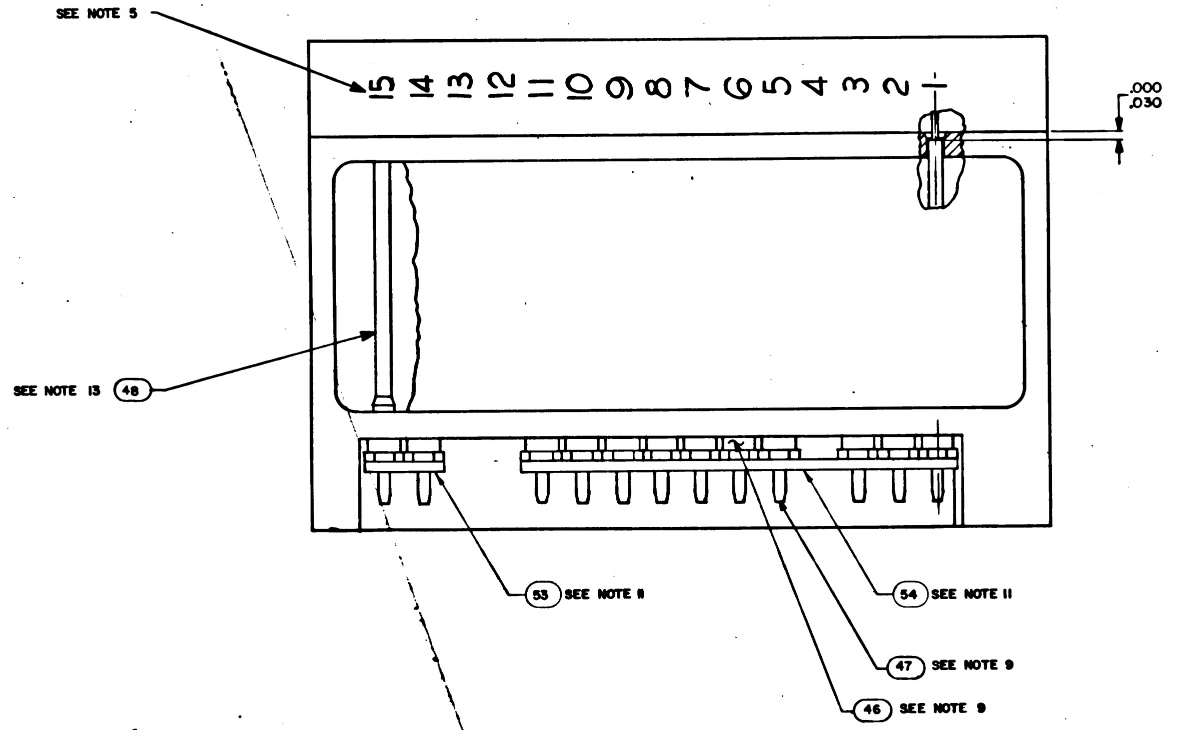
FT10
FT11
FT12
FT13
FT14


SEE NOTE 7 2
3 SEE NOTE 7
1.560
1.540


SEE NOTE 5
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
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.030
SEE NOTE 13 48
53 SEE NOTE 11
54 SEE NOTE 11
47 SEE NOTE 9
46 SEE NOTE 9

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

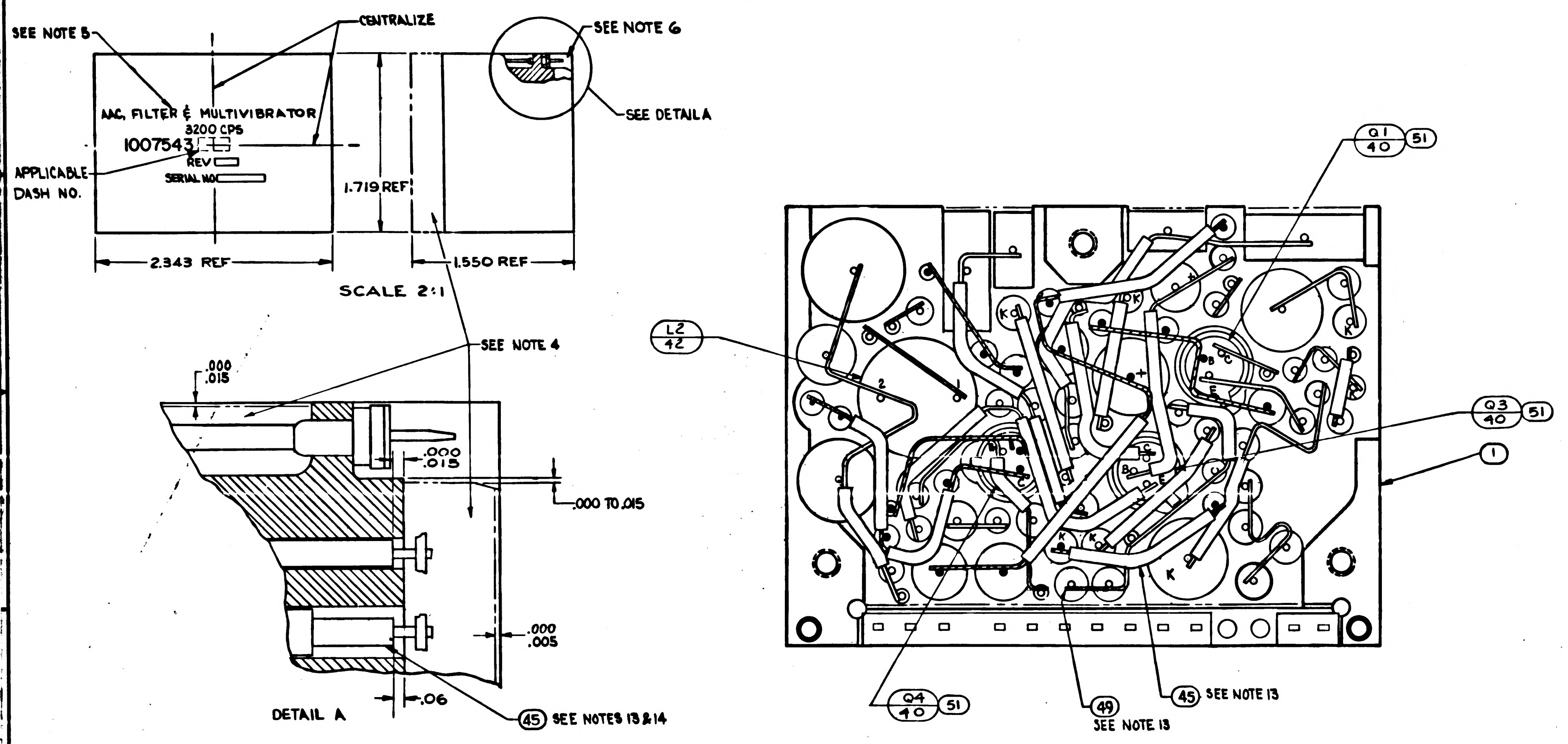
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT NAS9-497
DRAWN S. Agne DATE 17AUG64
CHECKED
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AAC FILTER AND MULTIVIBRATOR
3200 CPS ASSEMBLY

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007543
SCALE
WT
SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A	-	REVISED PER TDRR 17339		3 MAR 65	
B		REVISED PER TDRR 17610		24 MAR 65	



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009, METHOD C
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
4. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
5. MARK PIN NUMBER .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
7. ON ITEMS 2 AND 3:
   - A. BROKEN PATHS INDICATE INSULATION SLEEVING,
   - B. K INDICATES CATHODE SIDE OF DIODE,
   - C. FT( ) INDICATES FEED THROUGH,
   - D. PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   - E. C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   - F. B INDICATES BASE LEAD OF TRANSISTOR,
   - G. E INDICATES EMITTER LEAD OF TRANSISTOR,
   - H. C( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR,
   - I. B( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR,
   - J. E( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR,
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. ASSEMBLE PER ND-1002136
10. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. BOND ITEM 53 AND ITEM 54 TO ITEM 46 PER ND1002237.
12. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007043. PART TO BE SELECTED FROM CHART
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR R5 THRU R28, R32, R33, AND CR3
15. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT14
16. PROCURE PER PS1007043.
17. BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.

TABLE C

SELECTION CHART	
PART NUMBER	VALUE
1010410-2	240 PF
-3	270 PF
-4	300 PF
-5	330 PF
-6	360 PF
-7	390 PF
-8	430 PF
-9	470 PF
-10	510 PF
-11	560 PF
-12	620 PF
-13	680 PF
-14	750 PF
-15	820 PF
-16	910 PF
1010410-17	1000 PF

TABLE B

SELECTION CHART	
PART NUMBER	VALUE
1010264-21	.047UF
-22	.056UF
-23	.068UF
-24	.082UF
1010264-25	.100UF

TABLE A

SELECTION CHART	
PART NUMBER	VALUE
1010364-673	158.0K
-635	100.0K
-609	73.2K
-593	60.4K
-577	49.9K
-565	43.2K
-553	37.4K
-543	33.2K
-533	29.4K
-525	26.7K
-517	24.3K
-509	22.1K
-505	21.0K
-501	20.0K
-495	18.7K
-491	17.8K
-487	16.9K
-483	16.2K
-479	15.4K
-475	14.7K
-469	13.7K
-465	13.0K
-461	12.4K
-457	11.8K
-455	11.5K
-451	11.0K
-447	10.5K
-443	10.0K
-439	9.53K
-435	9.09K
-433	8.37K
-431	8.66K
-429	8.45K
-427	8.25K
-425	8.06K
-423	7.87K
-421	7.68K
-419	7.50K
-417	7.32K
-415	7.15K
-413	6.98K
-411	6.81K
-409	6.65K
-407	6.49K
-405	6.34K
-403	6.19K
-401	6.04K
-399	5.90K
1010364-397	5.76K

QUANTITY REQUIRED							
			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			X		REF	1010047	SCHEMATIC, ELECTRICAL
			1		55	1010830-11	DIODE
			1		54	1008540-11	GASKET, CONNECTOR-MINIATURE
			1		53	1008540-2	GASKET, CONNECTOR-MINIATURE
			AR		52	1006776-22	INSULATION SLEEVING, ELEC.
			6		51	1008025-1	BUSHING, INSULATOR
			1		~~50~~	~~1010364-559~~	~~RESISTOR, FIXED~~
			AR		49	1006757-1	WIRE, NICKEL RIBBON .010 x .020
			AR		48	1006776-20	SLEEVING, ELECT INSULATION
			12		47	1006782-5	CONTACT, WRAPOST-MALE-MINIATURE
			12		46	1006775	INSULATOR, WRAPOST-MALE MINIATURE
			AR		45	1006776-21	SLEEVING, ELECT INSULATION
			AR		44	1006757-8	WIRE FEED THROUGH
			1		43	1010309-8	REACTOR
			1		42	1010309-3	REACTOR
			1		41	1010431	TRANSISTOR
			6		40	1010397-1	TRANSISTOR
			1		39	1010291-2	TRANSFORMER
			13		38	1010385	SEMICONDUCTOR DEVICE, DIODE
			1		37	1010346-1	SEMICONDUCTOR DEVICE, DIODE
			~~1~~		36	~~1010784-11~~	~~SEMICONDUCTOR DEVICE, DIODE~~
			2		35	SEE TABLE C	CAPACITOR-FIXED
			1		34	SEE TABLE B	
			1		33	1010264-29	
			1		32	1010264-21	
			1		31	1010264-17	
			2		30	1006793-007	
			1		29	1006755-81	
			1		28	-69	
			1		27	-64	
			1		26	1006755-31	CAPACITOR - FIXED
			1		25	1010369-140	RESISTOR-FIXED
			2		24	1010369-95	
			1		23	1010369-88	
			1		22	SEE TABLE A	
			2		21	1010364-693	
			1		20	1010364-403	
			1		19	1010364-251	
			2		18	1010363-351	
			1		17	1010278-56	
			2		16	1006750-76	
			1		15	-73	
			3		14	-72	
			1		13	-62	
			2		12	-60	
			3		11	-56	
			2		10	-52	
			2		9	-48	
			1		8	-44	
			2		7	-42	
			1		6	-40	
			1		5	-32	
			1		4	1006750-19	RESISTOR - FIXED
			1		3	1015728	INSULATOR, LOWER
			1		2	1015727	INSULATOR, UPPER
			1		1	1015726	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± .XX ±.02 ±
± .XXX±.005 ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN S. Ayne DATE 17 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

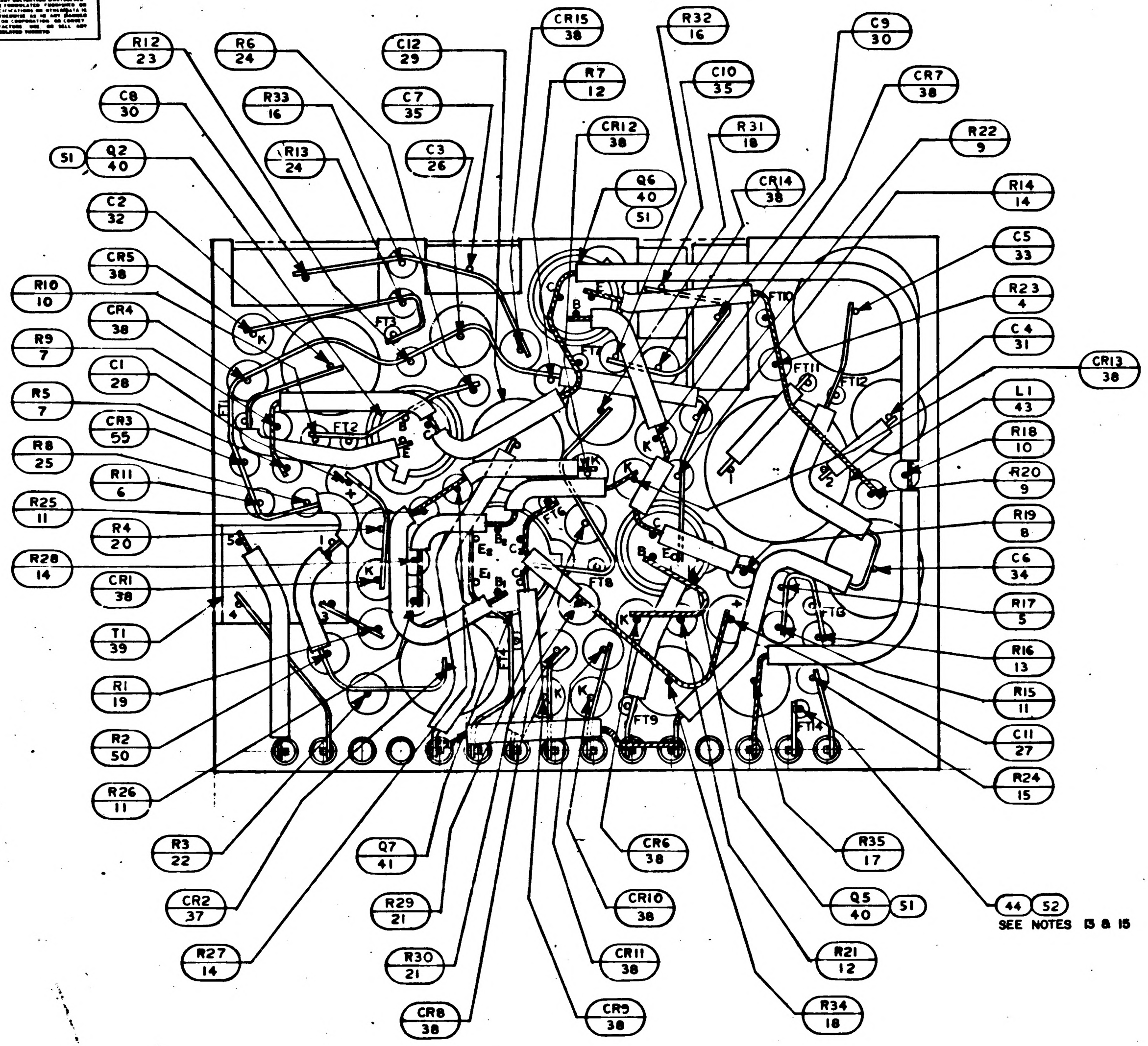
AAC FILTER AND MULTIVIBRATOR
3200 CPS
ASSEMBLY

CODE IDENT NO.
SIZE E
1007543
SCALE 5:1
SHEET OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 13 22 7

SYM	DESCRIPTION	DATE	APPROVAL
Ⓜ A	REVISED PER TORR 17339	12 MAR 65	Em
B	REVISED PER TORR 17610	24 MAR 65	MTO C7P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R6 24
C12 29
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R32 16
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R33 16
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R7 12
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R13 24
C3 26
CR12 38
R31 18
R22 9
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R1 19
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R35 17
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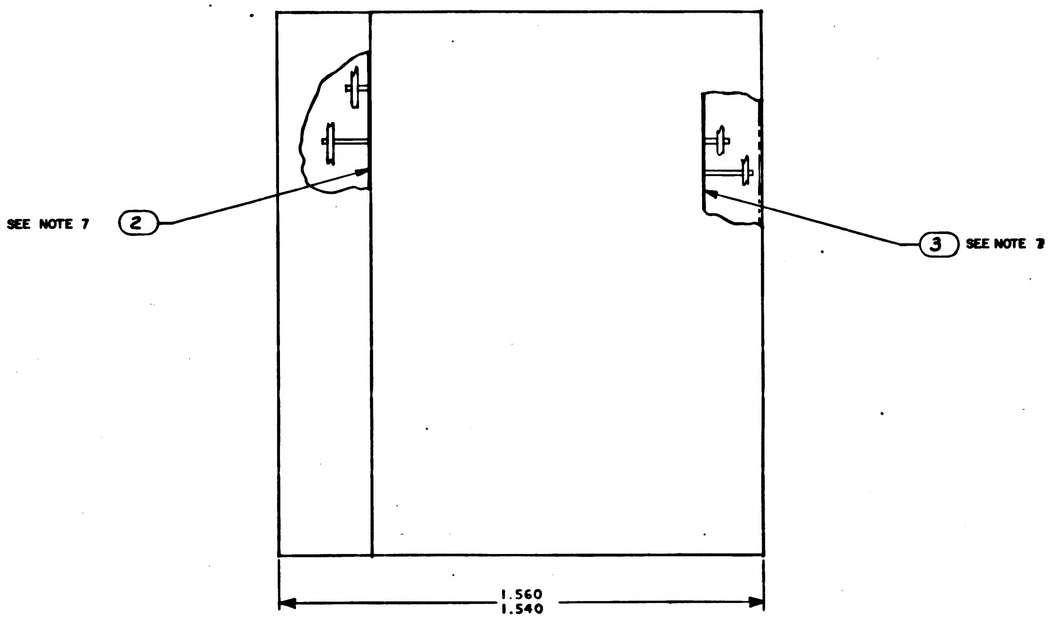
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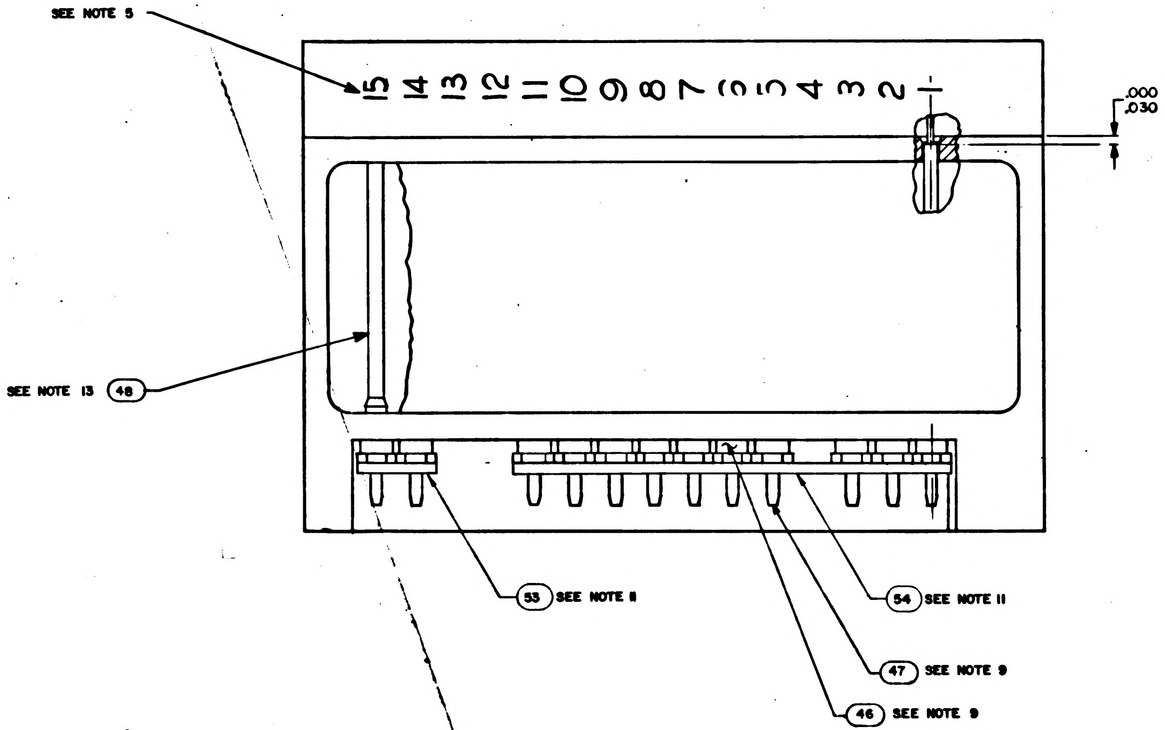
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.030
SEE NOTE 13
48
53 SEE NOTE 8
54 SEE NOTE 11
47 SEE NOTE 9
46 SEE NOTE 9

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
CONTRACT NAS9-497
DRAWN S. Agne DATE 17AUG64
CHECKED
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL

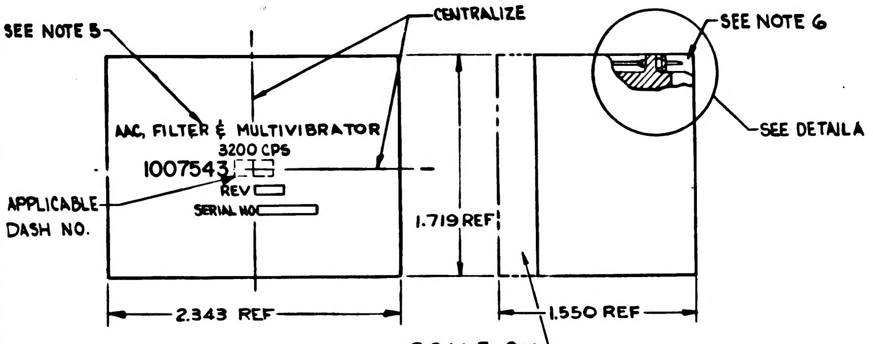
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AAC FILTER AND MULTIVIBRATOR
3200 CPS ASSEMBLY

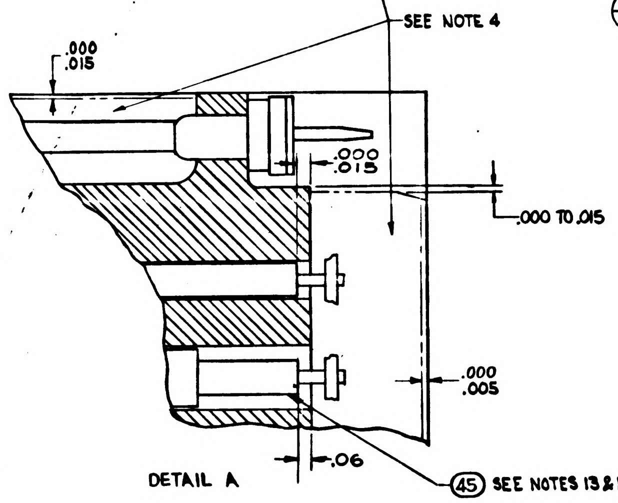
CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007543
SCALE —— WT
SHEET 2 OF 2

1007543 B

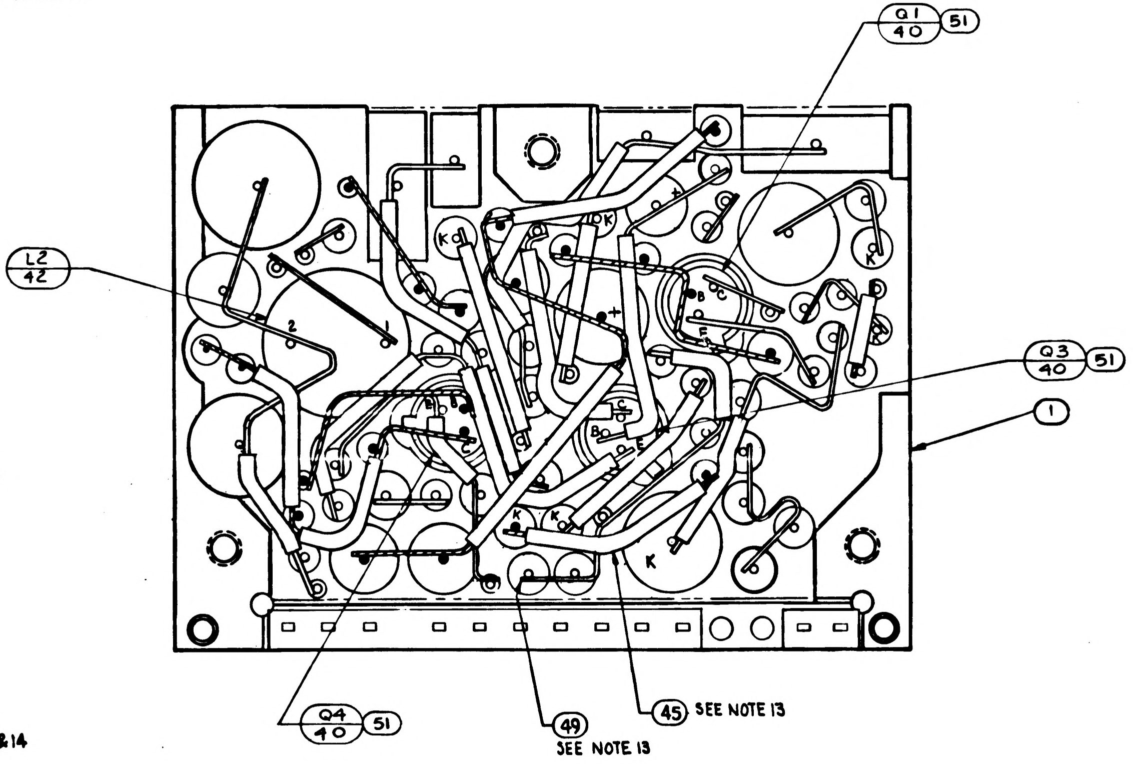
SYM	ZONE	DESCRIPTION		DATE	APPD
A	-	REVISED PER TDRR 17339	CHG NO.	3 MAR 65	
B		REVISED PER TDRR 17610		24 MAR 65	
C		REVISED PER TDRR 18518		26 APR 65	RJJ



SCALE 2:1



DETAIL A



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009, METHOD C
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
4. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
5. MARK PIN NUMBER .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
7. ON ITEMS 2 AND 3:
   - A. BROKEN PATHS INDICATE INSULATION SLEEVING,
   - B. K INDICATES CATHODE SIDE OF DIODE,
   - C. FT( ) INDICATES FEED THROUGH,
   - D. PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   - E. C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   - F. B INDICATES BASE LEAD OF TRANSISTOR,
   - G. E INDICATES EMITTER LEAD OF TRANSISTOR,
   - H. $C_{()}$ INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR,
   - I. $B_{()}$ INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR,
   - J. $E_{()}$ INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR,
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. ASSEMBLE PER ND-1002136
10. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. BOND ITEM 53 AND ITEM 54 TO ITEM 46 PER ND1002237.
12. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007043. PART TO BE SELECTED FROM CHART
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR R5 THRU R28, R32, R33, AND CR3
15. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT14
16. PROCURE PER PS1007043.
17. BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.

TABLE C

SELECTION CHART	
PART NUMBER	VALUE
1010410-2	240 PF
-3	270 PF
-4	300 PF
-5	330 PF
-6	360 PF
-7	390 PF
-8	430 PF
-9	470 PF
-10	510 PF
-11	560 PF
-12	620 PF
-13	680 PF
-14	750 PF
-15	820 PF
-16	910 PF
1010410-17	1000 PF

TABLE B

SELECTION CHART	
PART NUMBER	VALUE
1010264-21	.047UF
-22	.056UF
-23	.068UF
-24	.082UF
1010264-25	.100UF

TABLE A

SELECTION CHART	
PART NUMBER	VALUE
1010364-673	158.0K
-635	100.0K
-609	73.2K
-593	60.4K
-577	49.9K
-565	43.2K
-553	37.4K
-543	33.2K
-533	29.4K
-525	26.7K
-517	24.3K
-509	22.1K
-505	21.0K
-501	20.0K
-495	18.7K
-491	17.8K
-487	16.9K
-483	16.2K
-479	15.4K
-475	14.7K
-469	13.7K
-465	13.0K
-461	12.4K
-457	11.8K
-455	11.5K
-451	11.0K
-447	10.5K
-443	10.0K
-439	9.53K
-435	9.09K
-433	8.37K
-431	8.66K
-429	8.45K
-427	8.25K
-425	8.06K
-423	7.87K
-421	7.68K
-419	7.50K
-417	7.32K
-415	7.15K
-413	6.98K
-411	6.81K
-409	6.65K
-407	6.49K
-405	6.34K
-403	6.19K
-401	6.04K
-399	5.90K
1010364-397	5.76K

		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		X	-		57	PS1007043 TYPE II	PROCUREMENT SPEC.
		-	X		56	PS1007043 TYPE I	PROCUREMENT SPEC.
		X	X		REF	1010047	SCHEMATIC, ELECTRICAL
		1	1		55	1010830-11	DIODE
		1	1		54	1008540-11	GASKET, CONNECTOR-MINIATURE
		1	1		53	1008540-2	GASKET, CONNECTOR-MINIATURE
		AR	AR		52	1006776-22	INSULATION SLEEVING, ELEC.
		6	6		51	1008025-1	BUSHING, INSULATOR
		1	1		50	1010364-559	RESISTOR, FIXED
		AR	AR		49	1006757-1	WIRE, NICKEL RIBBON .010×.020
		AR	AR		48	1006776-20	SLEEVING, ELECT INSULATION
		12	12		47	1006782-5	CONTACT, WRAPOST-MALE-MINIATURE
		12	12		46	1006775	INSULATOR, WRAPOST-MALE MINIATURE
		AR	AR		45	1006776-21	SLEEVING, ELECT INSULATION
		AR	AR		44	1006757-8	WIRE FEED THROUGH
		1	1		43	1010309-8	REACTOR
		1	1		42	1010309-3	REACTOR
		1	1		41	1010431	TRANSISTOR
		6	6		40	1010397-1	TRANSISTOR
		1	1		39	1010291-2	TRANSFORMER
		13	13		38	1010385	SEMICONDUCTOR DEVICE, DIODE
		1	1		37	1010346-1	SEMICONDUCTOR DEVICE, DIODE
			~~1~~		36	~~1010286-11~~	~~SEMICONDUCTOR DEVICE, DIODE~~
		2	2		35	SEE TABLE C	CAPACITOR-FIXED
		1	1		34	SEE TABLE B	
		1	1		33	1010264-29	
		1	1		32	1010264-21	
		1	1		31	1010264-17	
		2	2		30	1006793-007	
		1	1		29	1006755-81	
		1	1		28	-69	
		1	1		27	-64	
		1	1		26	1006755-31	CAPACITOR - FIXED
		1	1		25	1010369-140	RESISTOR-FIXED
		2	2		24	1010369-95	
		1	1		23	1010369-88	
		1	1		22	SEE TABLE A	
		2	2		21	1010364-693	
		1	1		20	1010364-403	
		1	1		19	1010364-251	
		2	2		18	1010363-351	
		1	1		17	1010278-56	
		2	2		16	1006750-76	
		1	1		15	-73	
		3	3		14	-72	
		1	1		13	-62	
		2	2		12	-60	
		3	3		11	-56	
		2	2		10	-52	
		2	2		9	-48	
		1	1		8	-44	
		2	2		7	-42	
		1	1		6	-40	
		1	1		5	-32	
		1	1		4	1006750-19	RESISTOR - FIXED
		1	1		3	1015728	INSULATOR, LOWER
		1	1		2	1015727	INSULATOR, UPPER
		1	1		1	1015726	HEATSINK

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS .XX ±.02 .XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN S. Agne DATE 17 AUG 64
CHECKED A. Udarnich 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

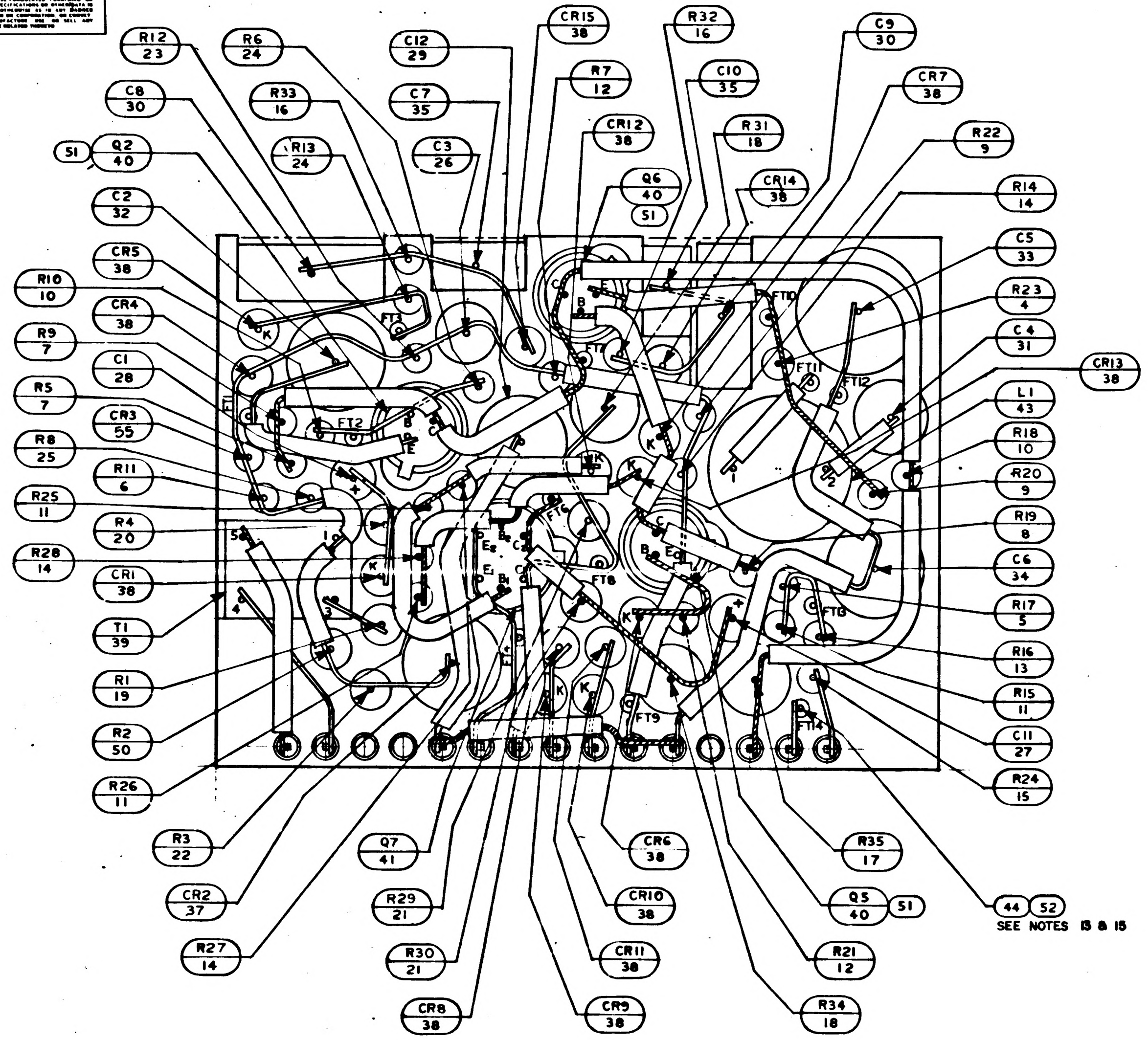
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AAC FILTER AND MULTIVIBRATOR
3200 CPS
ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1007543
SCALE 5:1
SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 17339		
B	REVISED PER TDRR 17610	24 MAR 6	
C	REVISED PER TDRR 18518	26 APR 6	R. J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R6
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CR15
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R32
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12
C10
35
CR7
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51
Q2
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R13
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C3
26
CR12
38
R31
18
R22
9
Q6
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38
R10
10
CR4
38
R23
4
C4
31
R9
7
C1
28
CR13
38
R5
7
CR3
55
L1
43
R8
25
R18
10
R11
6
R20
9
R25
11
R4
20
R19
8
R28
14
CR1
38
C6
34
T1
39
R17
5
R1
19
R16
13
R2
50
R15
11
C11
27
R26
11
R24
15
R3
22
Q7
41
CR6
38
R35
17
CR2
37
CR10
38
Q5
40
51
R29
21
44
52
SEE NOTES 13 & 15
R27
14
R30
21
CR11
38
R21
12
CR8
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CR9
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R34
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FT1
FT2
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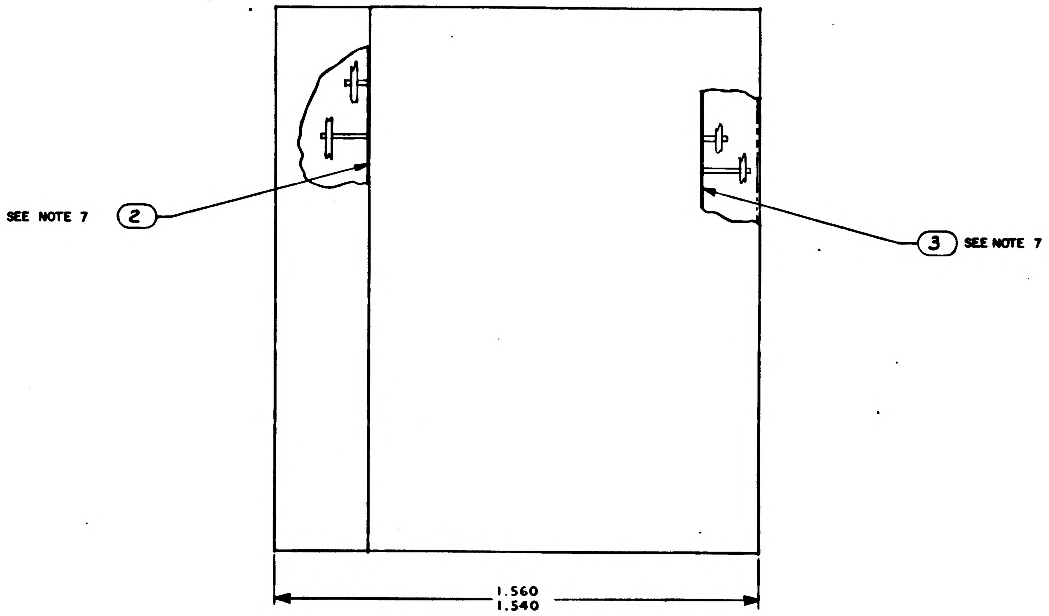
FT10
FT11
FT12
FT13
FT14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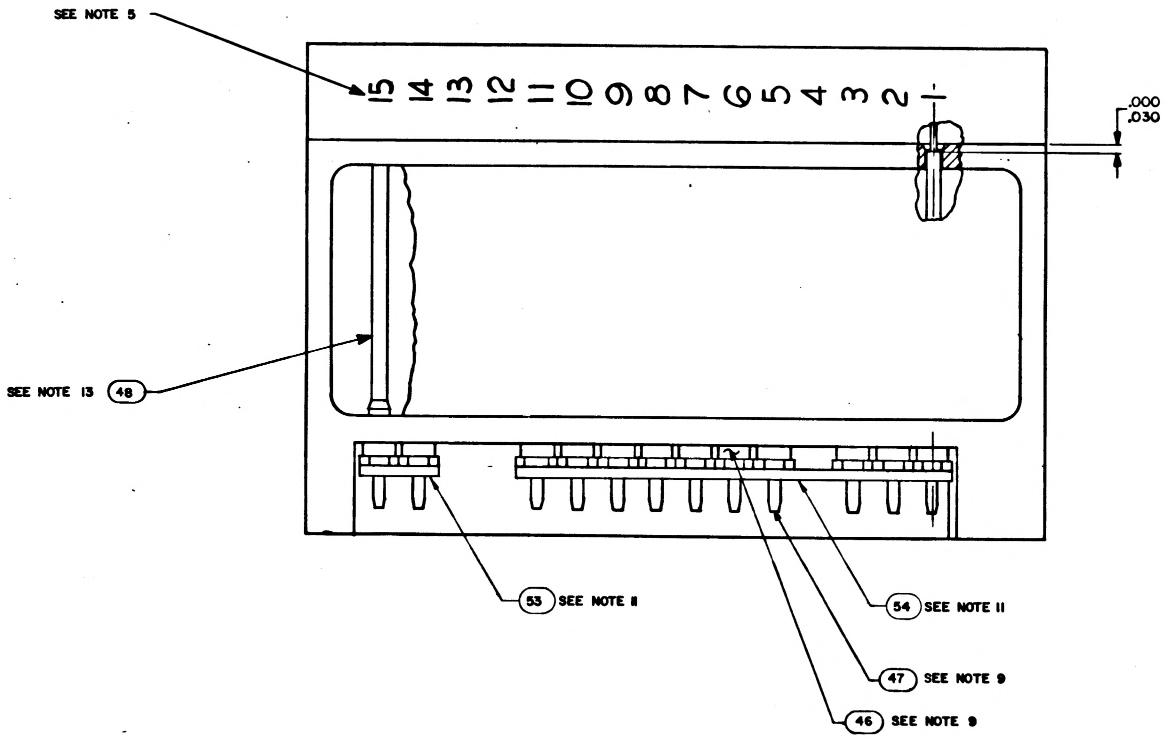
1.540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SEE NOTE 13
48
53
SEE NOTE 11
54
SEE NOTE 11
47
SEE NOTE 9
46
SEE NOTE 9

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

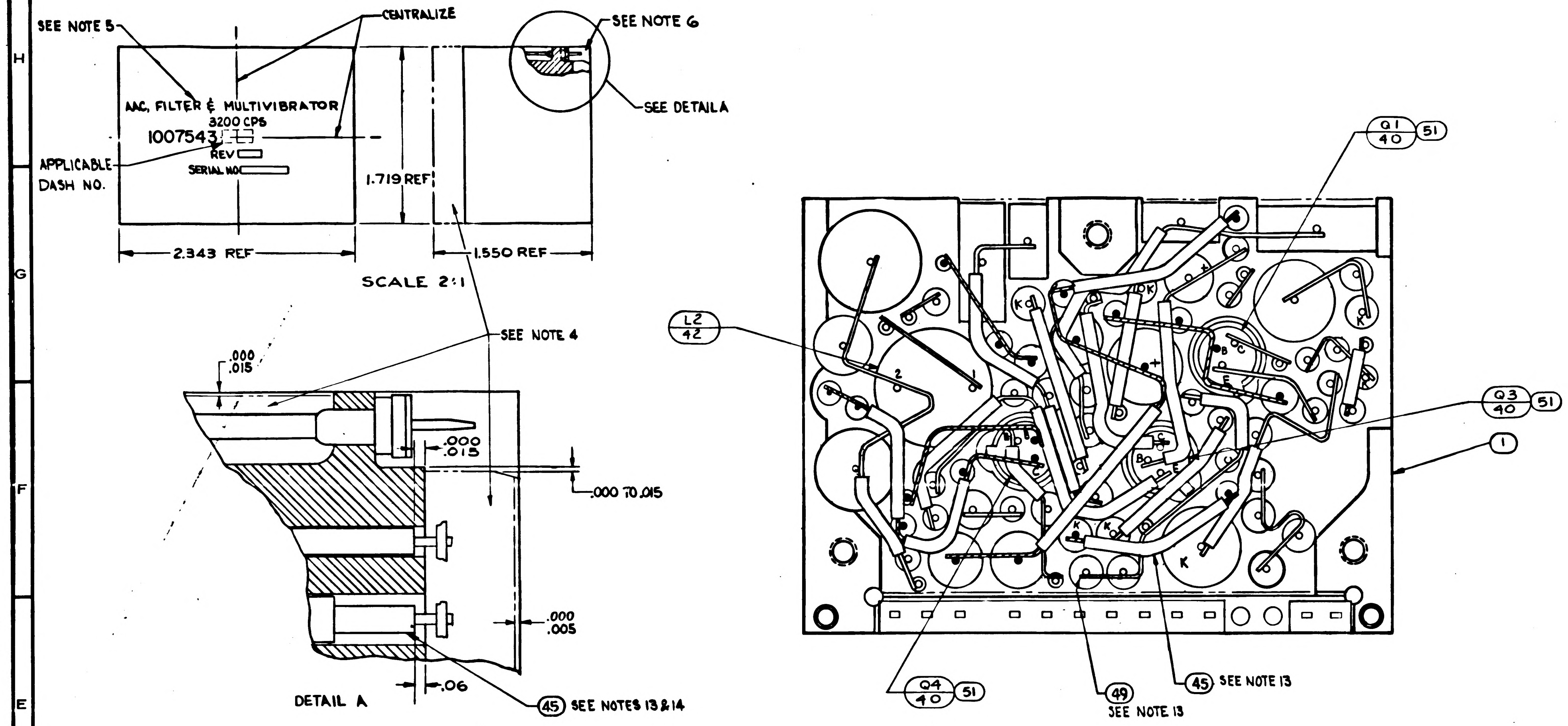
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT NAS9-497
DRAWN S. Agne DATE 17 AUG 64
CHECKED B. Udovich 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AAC FILTER AND MULTIVIBRATOR
3200 CPS ASSEMBLY

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007543
SCALE —
WT
SHEET 2 OF 2

REVISIONS 13333				
SYM	ZONE	DESCRIPTION	DATE	APPD.
A	-	REVISED PER TDRR 17339 — CHG NO	13 MAR 65	
B		REVISED PER TDRR 17610	24 MAR 65	HTO CHP
C		REVISED PER TDRR 18518	26 APR 65	RJJ AU
D		REVISED PER TDRR 19392	2 JUN 65	HTO



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009, METHOD C
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
4. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
5. MARK PIN NUMBER .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
7. ON ITEMS 2 AND 3:
   - A. BROKEN PATHS INDICATE INSULATION SLEEVING,
   - B. K INDICATES CATHODE SIDE OF DIODE,
   - C. FT( ) INDICATES FEED THROUGH,
   - D. PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   - E. C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   - F. B INDICATES BASE LEAD OF TRANSISTOR,
   - G. E INDICATES EMITTER LEAD OF TRANSISTOR,
   - H. $C_{( )}$ INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR,
   - I. $B_{( )}$ INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR,
   - J. $E_{( )}$ INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR,
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. ASSEMBLE PER ND-1002136
10. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. BOND ITEM 53 AND ITEM 54 TO ITEM 46 PER ND1002237.
12. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007043. PART TO BE SELECTED FROM CHART
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR R5 THRU R28, R32, R33, AND CR3
15. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT14
16. PROCURE PER PS1007043.
17. ~~BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
18. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF PRIMER BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE I. PRIMER TO CONSIST OF SIX PARTS BY VOLUME OF 1012504-1 AND ONE PART BY VOLUME OF 1012504-2. APPLY MATERIAL AND PRIMER AS INDICATED IN TABLE I.

TABLE C

SELECTION CHART	
PART NUMBER	VALUE
1010410-2	240 PF
-3	270 PF
-4	300 PF
-5	330 PF
-6	360 PF
-7	390 PF
-8	430 PF
-9	470 PF
-10	510 PF
-11	560 PF
-12	620 PF
-13	680 PF
-14	750 PF
-15	820 PF
-16	910 PF
1010410-17	1000 PF

TABLE B

SELECTION CHART	
PART NUMBER	VALUE
1010264-21	.047UF
-22	.056UF
-23	.068UF
-24	.082UF
1010264-25	.100UF

TABLE I

CONFIGURATION	MAT	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER AT PERIMETER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	ADHESIVE	.12 MIN 100% OF PERIMETER .25 MIN 80% OF PERIMETER	.25 MIN 100% OF PERIMETER	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	ADHESIVE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	.25 MIN 100% OF PERIMETER	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	PRIMER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 TO .06 OF EXTERNAL EDGE

TABLE A

SELECTION CHART	
PART NUMBER	VALUE
1010364-673	158.0K
-635	100.0K
-609	73.2K
-593	60.4K
-577	49.9K
-565	43.2K
-553	37.4K
-543	33.2K
-533	29.4K
-525	26.7K
-517	24.3K
-509	22.1K
-505	21.0K
-501	20.0K
-495	18.7K
-491	17.8K
-487	16.9K
-483	16.2K
-479	15.4K
-475	14.7K
-469	13.7K
-465	13.0K
-461	12.4K
-457	11.8K
-455	11.5K
-451	11.0K
-447	10.5K
-443	10.0K
-439	9.53K
-435	9.09K
-433	8.37K
-431	8.66K
-429	8.45K
-427	8.25K
-425	8.06K
-423	7.87K
-421	7.68K
-419	7.50K
-417	7.32K
-415	7.15K
-413	6.98K
-411	6.81K
-409	6.65K
-407	6.49K
-405	6.34K
-403	6.19K
-401	6.04K
-399	5.90K
1010364-397	5.76K

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		021	011				
		X	-		57	PS 1007043 TYPE II	PROCUREMENT SPEC.
		-	X		56	PS 1007043 TYPE I	PROCUREMENT SPEC.
		X	X		REF	1010047	SCHEMATIC, ELECTRICAL
		1	1		55	1010830-11	DIODE
		1	1		54	1008540-11	GASKET, CONNECTOR-MINIATURE
		1	1		53	1008540-2	GASKET, CONNECTOR-MINIATURE
		AR	AR		52	1006776-22	INSULATION SLEEVING, ELEC.
		6	6		51	1008025-1	BUSHING, INSULATOR
		1	1		50	1010364-559	RESISTOR, FIXED
		AR	AR		49	1006757-1	WIRE, NICKEL RIBBON .010×.020
		AR	AR		48	1006776-20	SLEEVING, ELECT INSULATION
		12	12		47	1006782-5	CONTACT, WRAPOST-MALE-MINIATURE
		12	12		46	1006775	INSULATOR, WRAPOST-MALE MINIATURE
		AR	AR		45	1006776-21	SLEEVING, ELECT INSULATION
		AR	AR		44	1006757-8	WIRE FEED THROUGH
		1	1		43	1010309-8	REACTOR
		1	1		42	1010309-3	REACTOR
		1	1		41	1010431	TRANSISTOR
		6	6		40	1010397-1	TRANSISTOR
		1	1		39	1010291-2	TRANSFORMER
		13	13		38	1010385	SEMICONDUCTOR DEVICE, DIODE
		1	1		37	1010346-1	SEMICONDUCTOR DEVICE, DIODE
			~~1~~		36	~~1010286-11~~	~~SEMICONDUCTOR DEVICE, DIODE~~
		2	2		35	SEE TABLE C	CAPACITOR-FIXED
		1	1		34	SEE TABLE B	
		1	1		33	1010264-29	
		1	1		32	1010264-21	
		1	1		31	1010264-17	
		2	2		30	1006793-007	
		1	1		29	1006755-81	
		1	1		28	-69	
		1	1		27	-64	
		1	1		26	1006755-31	CAPACITOR - FIXED
		1	1		25	1010369-140	RESISTOR-FIXED
		2	2		24	1010369-95	
		1	1		23	1010369-88	
		1	1		22	SEE TABLE A	
		2	2		21	1010364-693	
		1	1		20	1010364-403	
		1	1		19	1010364-251	
		2	2		18	1010363-351	
		1	1		17	1010278-56	
		2	2		16	1006750-76	
		1	1		15	-73	
		3	3		14	-72	
		1	1		13	-62	
		2	2		12	-60	
		3	3		11	-56	
		2	2		10	-52	
		2	2		9	-48	
		1	1		8	-44	
		2	2		7	-42	
		1	1		6	-40	
		1	1		5	-32	
		1	1		4	1006750-19	RESISTOR - FIXED
		1	1		3	1015728	INSULATOR, LOWER
		1	1		2	1015727	INSULATOR, UPPER
		1	1		1	1015726	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS .XX ±.02 .XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN S. Agne DATE 17 AUG 64
CHECKED A. Ulrich 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 12-3-64
MIT APPROVAL Oct 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

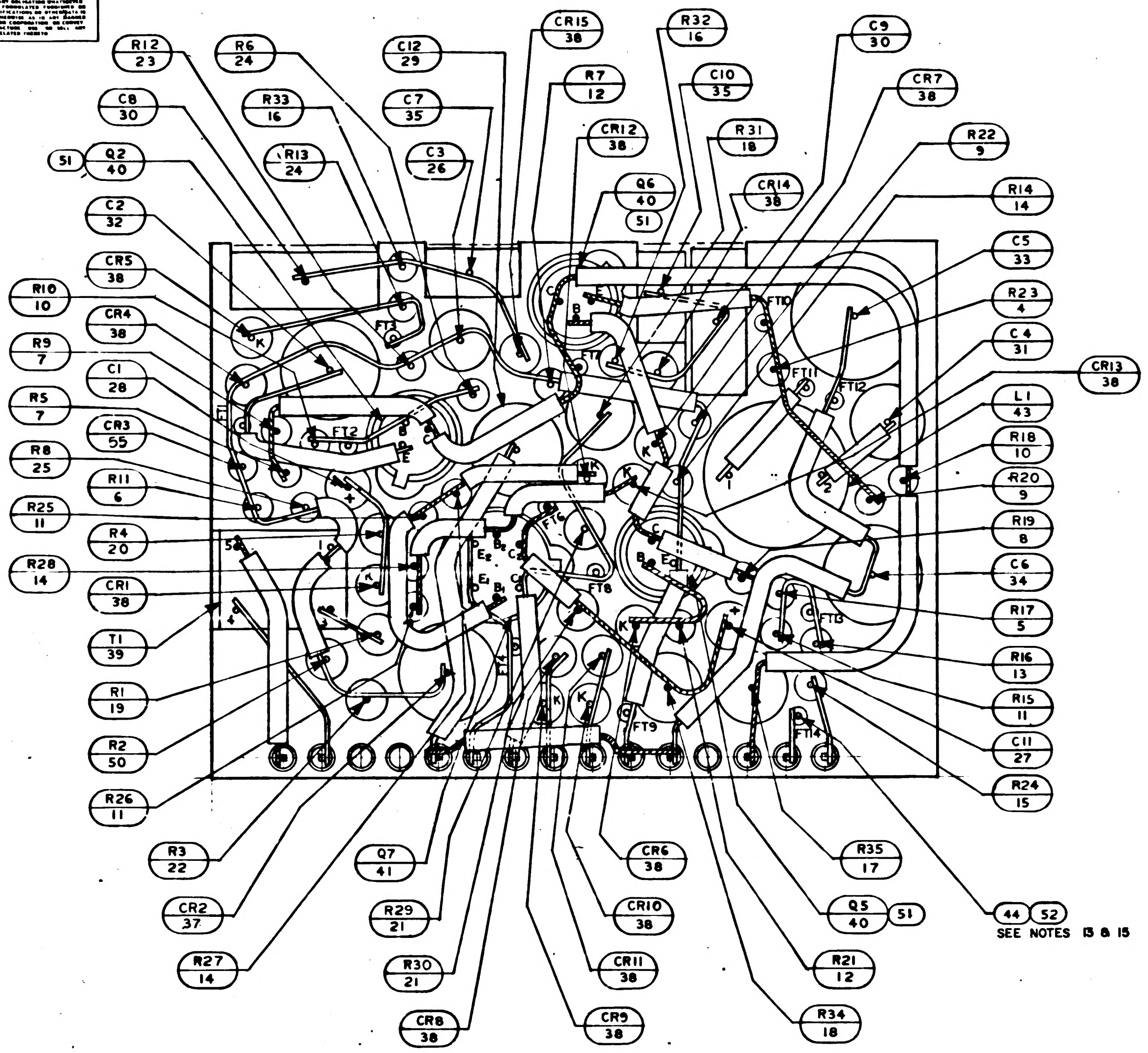
AAC FILTER AND MULTIVIBRATOR
3200 CPS
ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1007543
SCALE 5:1
SHEET OF 2

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS 13233

SYM	DESCRIPTION	DATE	APPROVAL
Ⓜ A	REVISED PER TDRR 17339	12 MAR 65	EM EF
Ⓜ B	REVISED PER TDRR 17610	24 MAR 65	HTO C7P
Ⓜ C	REVISED PER TDRR 18518	26 APR 65	RJJ AU
D	REVISED PER TDRR 19392	2 JUN 65	HTO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CR7 38
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C3 26
CR12 38
R31 18
R22 9
51
Q2 40
Q6 40 51
CR14 38
R14 14
C2 32
C5 33
CR5 38
R23 4
R10 10
CR4 38
C4 31
CR13 38
R9 7
C1 28
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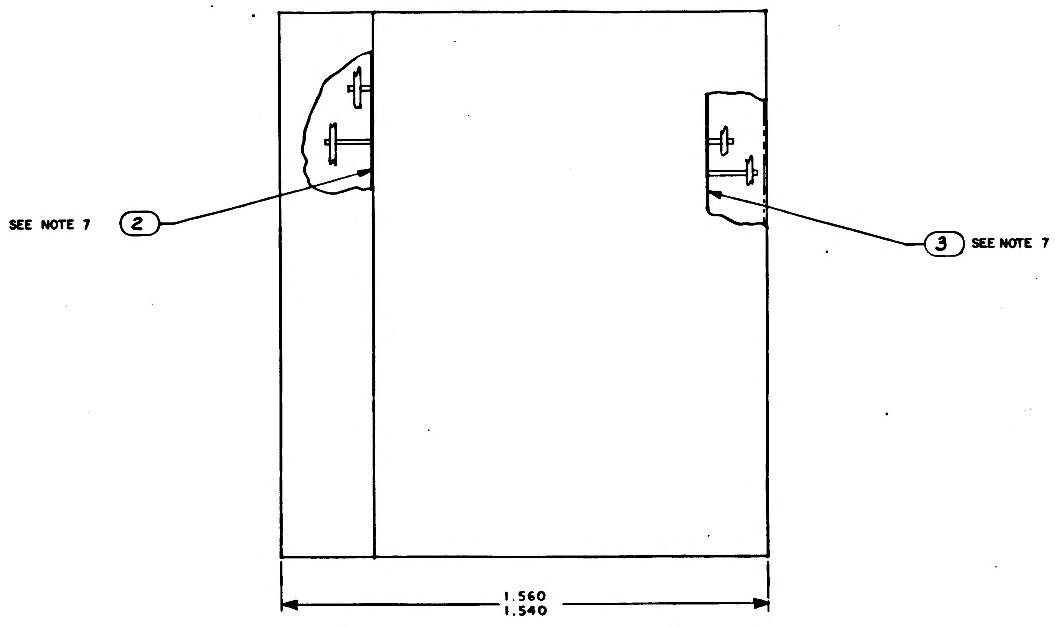
R5 7
CR3 55
R18 10
R8 25
R20 9
R11 6
R25 11
R19 8
R4 20
C6 34
R28 14
CR1 38
R17 5
T1 39
R16 13
R1 19
R15 11
R2 50
C11 27
R26 11
R24 15
R3 22
Q7 41
CR6 38
R35 17
CR2 37
R29 21
CR10 38
Q5 40 51
44 52 SEE NOTES 13 & 15
R27 14
R30 21
CR11 38
R21 12
CR8 38
CR9 38
R34 18
FT1
FT2
FT3
FT4
FT8
FT9
FT10
FT11
FT12
FT13
FT14
E
B
C
K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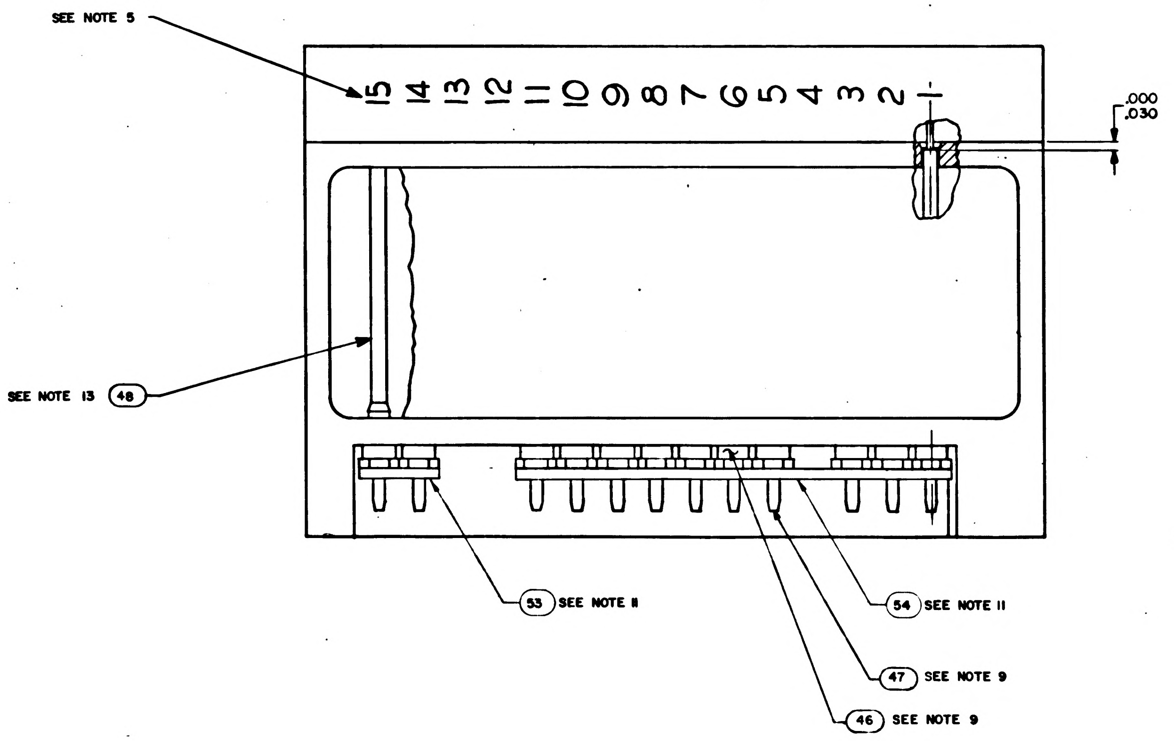
1.540


SEE NOTE 5
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
.000
.030
SEE NOTE 13
48
53 SEE NOTE 11
54 SEE NOTE 11
47 SEE NOTE 9
46 SEE NOTE 9

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

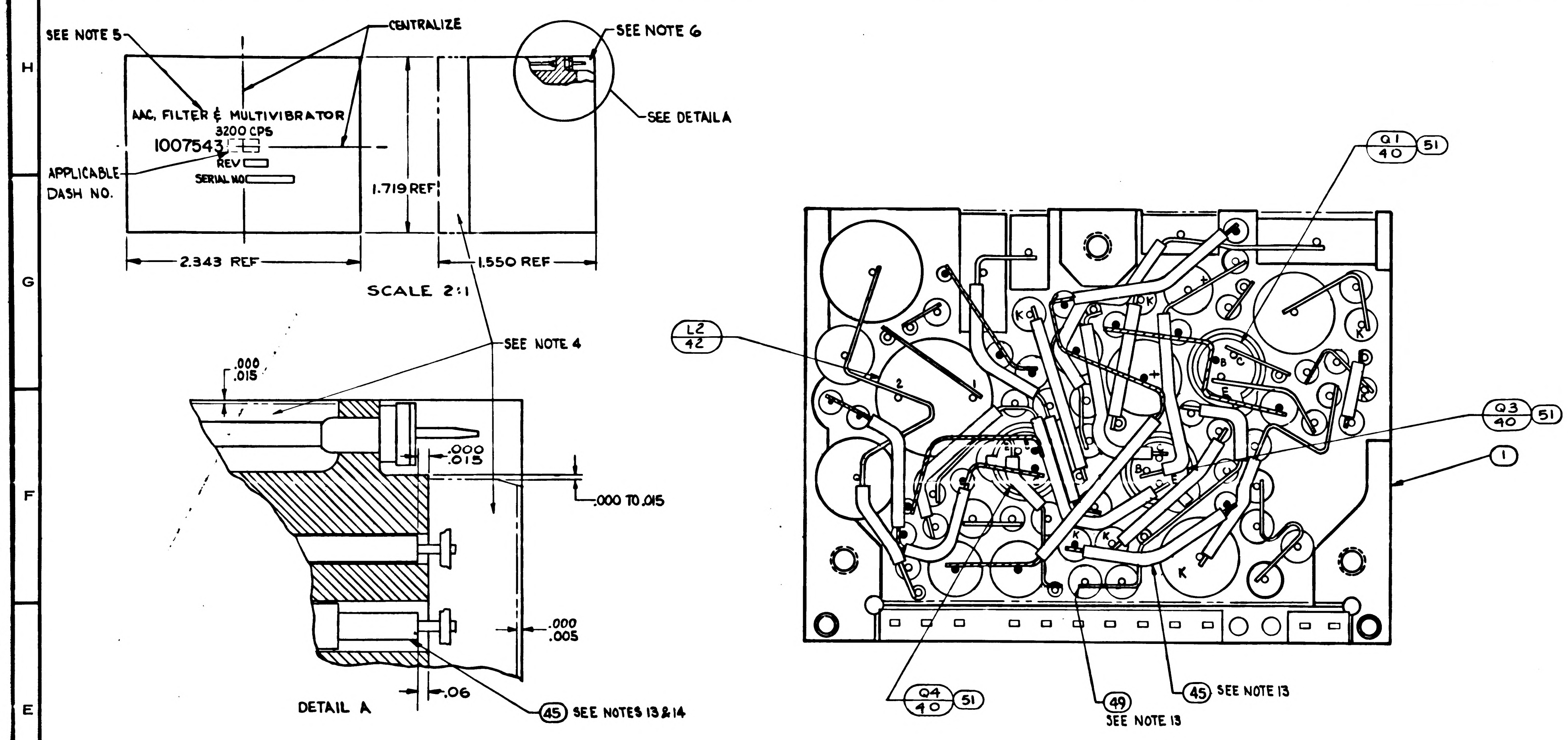
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT NAS9-497
DRAWN S. Agne DATE 17AUG64
CHECKED Udovich 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10 6 64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AAC FILTER AND MULTIVIBRATOR
3200 CPS ASSEMBLY

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO 1007543
SCALE ——
WT
SHEET 2 OF 2

SYM	ZONE	REVISIONS 13373 DESCRIPTION	DATE	APPD.
A	-	REVISED PER TDRR 17339 — CHG NO.	13 MAR 65	EM / E.Z.
B		REVISED PER TDRR 17610	24 MAR 65	HTO / C7P
C		REVISED PER TDRR 18518	26 APR 65	RJJ / AU
D		REVISED PER TORR 19392	2 JUN 65	HTO
E		REVISED PER TDRR 19437	3 JUN 65	RJJ / EF



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009, METHOD C
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
4. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
5. MARK PIN NUMBER .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
7. ON ITEMS 2 AND 3:
   A. BROKEN PATHS INDICATE INSULATION SLEEVING,
   B. K INDICATES CATHODE SIDE OF DIODE,
   C. FT( ) INDICATES FEED THROUGH,
   D. PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   E. C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   F. B INDICATES BASE LEAD OF TRANSISTOR,
   G. E INDICATES EMITTER LEAD OF TRANSISTOR,
   H. $C_{()}$ INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR,
   I. $B_{()}$ INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR,
   J. $E_{()}$ INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR,
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. ASSEMBLE PER ND-1002136
10. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. BOND ITEM 53 AND ITEM 54 TO ITEM 46 PER ND1002237.
12. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007043. PART TO BE SELECTED FROM CHART
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR R5 THRU R28, R32, R33, AND CR3
15. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT14
16. PROCURE PER PS1007043.
17. ~~BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
18. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.

TABLE C

SELECTION CHART	
PART NUMBER	VALUE
1010410-2	240 PF
-3	270 PF
-4	300 PF
-5	330 PF
-6	360 PF
-7	390 PF
-8	430 PF
-9	470 PF
-10	510 PF
-11	560 PF
-12	620 PF
-13	680 PF
-14	750 PF
-15	820 PF
-16	910 PF
1010410-17	1000 PF

TABLE B

SELECTION CHART	
PART NUMBER	VALUE
1010264-21	.047UF
-22	.056UF
-23	.068UF
-24	.082UF
1010264-25	.100UF

TABLE A

SELECTION CHART	
PART NUMBER	VALUE
1010364-673	158.0K
-635	100.0K
-609	73.2K
-593	60.4K
-577	49.9K
-565	43.2K
-553	37.4K
-543	33.2K
-533	29.4K
-525	26.7K
-517	24.3K
-509	22.1K
-505	21.0K
-501	20.0K
-495	18.7K
-491	17.8K
-487	16.9K
-483	16.2K
-479	15.4K
-475	14.7K
-469	13.7K
-465	13.0K
-461	12.4K
-457	11.8K
-455	11.5K
-451	11.0K
-447	10.5K
-443	10.0K
-439	9.53K
-435	9.09K
-433	8.37K
-431	8.66K
-429	8.45K
-427	8.25K
-425	8.06K
-423	7.87K
-421	7.68K
-419	7.50K
-417	7.32K
-415	7.15K
-413	6.98K
-411	6.81K
-409	6.65K
-407	6.49K
-405	6.34K
-403	6.19K
-401	6.04K
-399	5.90K
1010364-397	5.76K

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK - FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

QUANTITY REQUIRED				EFFECTIVITY	LIST OF PARTS AND MATERIALS		
		021	011		ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		X	-		57	PS 1007043 TYPE II	PROCUREMENT SPEC.
		-	X		56	PS 1007043 TYPE I	PROCUREMENT SPEC.
		X	X		REF	1010047	SCHEMATIC, ELECTRICAL
		1	1		55	1010830-11	DIODE
		1	1		54	1008540-11	GASKET, CONNECTOR-MINIATURE
		1	1		53	1008540-2	GASKET, CONNECTOR-MINIATURE
		AR	AR		52	1006776-22	INSULATION SLEEVING, ELEC.
		6	6		51	1008025-1	BUSHING, INSULATOR
		1	1		50	1010364-559	RESISTOR, FIXED
		AR	AR		49	1006757-1	WIRE, NICKEL RIBBON .010×.020
		AR	AR		48	1006776-20	SLEEVING, ELECT INSULATION
		12	12		47	1006782-5	CONTACT, WRAPOST-MALE-MINIATURE
		12	12		46	1006775	INSULATOR, WRAPOST-MALE MINIATURE
		AR	AR		45	1006776-21	SLEEVING, ELECT INSULATION
		AR	AR		44	1006757-8	WIRE FEED THROUGH
		1	1		43	1010309-8	REACTOR
		1	1		42	1010309-3	REACTOR
		1	1		41	1010431	TRANSISTOR
		6	6		40	1010397-1	TRANSISTOR
		1	1		39	1010291-2	TRANSFORMER
		13	13		38	1010385	SEMICONDUCTOR DEVICE, DIODE
		1	1		37	1010346-1	SEMICONDUCTOR DEVICE, DIODE
			~~1~~		36	~~1010286-11~~	~~SEMICONDUCTOR DEVICE, DIODE~~
		2	2		35	SEE TABLE C	CAPACITOR-FIXED
		1	1		34	SEE TABLE B	
		1	1		33	1010264-29	
		1	1		32	1010264-21	
		1	1		31	1010264-17	
		2	2		30	1006793-007	
		1	1		29	1006755-81	
		1	1		28	-69	
		1	1		27	-64	
		1	1		26	1006755-31	CAPACITOR - FIXED
		1	1		25	1010369-140	RESISTOR-FIXED
		2	2		24	1010369-95	
		1	1		23	1010369-88	
		1	1		22	SEE TABLE A	
		2	2		21	1010364-693	
		1	1		20	1010364-403	
		1	1		19	1010364-251	
		2	2		18	1010363-351	
		1	1		17	1010278-56	
		2	2		16	1006750-76	
		1	1		15	-73	
		3	3		14	-72	
		1	1		13	-62	
		2	2		12	-60	
		3	3		11	-56	
		2	2		10	-52	
		2	2		9	-48	
		1	1		8	-44	
		2	2		7	-42	
		1	1		6	-40	
		1	1		5	-32	
		1	1		4	1006750-19	RESISTOR - FIXED
		1	1		3	1015728	INSULATOR, LOWER
		1	1		2	1015727	INSULATOR, UPPER
		1	1		1	1015726	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS .XX ±.02 .XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN S. Agne DATE 17 AUG 64
CHECKED A. Ulrich 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AAC FILTER AND MULTIVIBRATOR
3200 CPS
ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1007543
SCALE 5:1
SHEET 2

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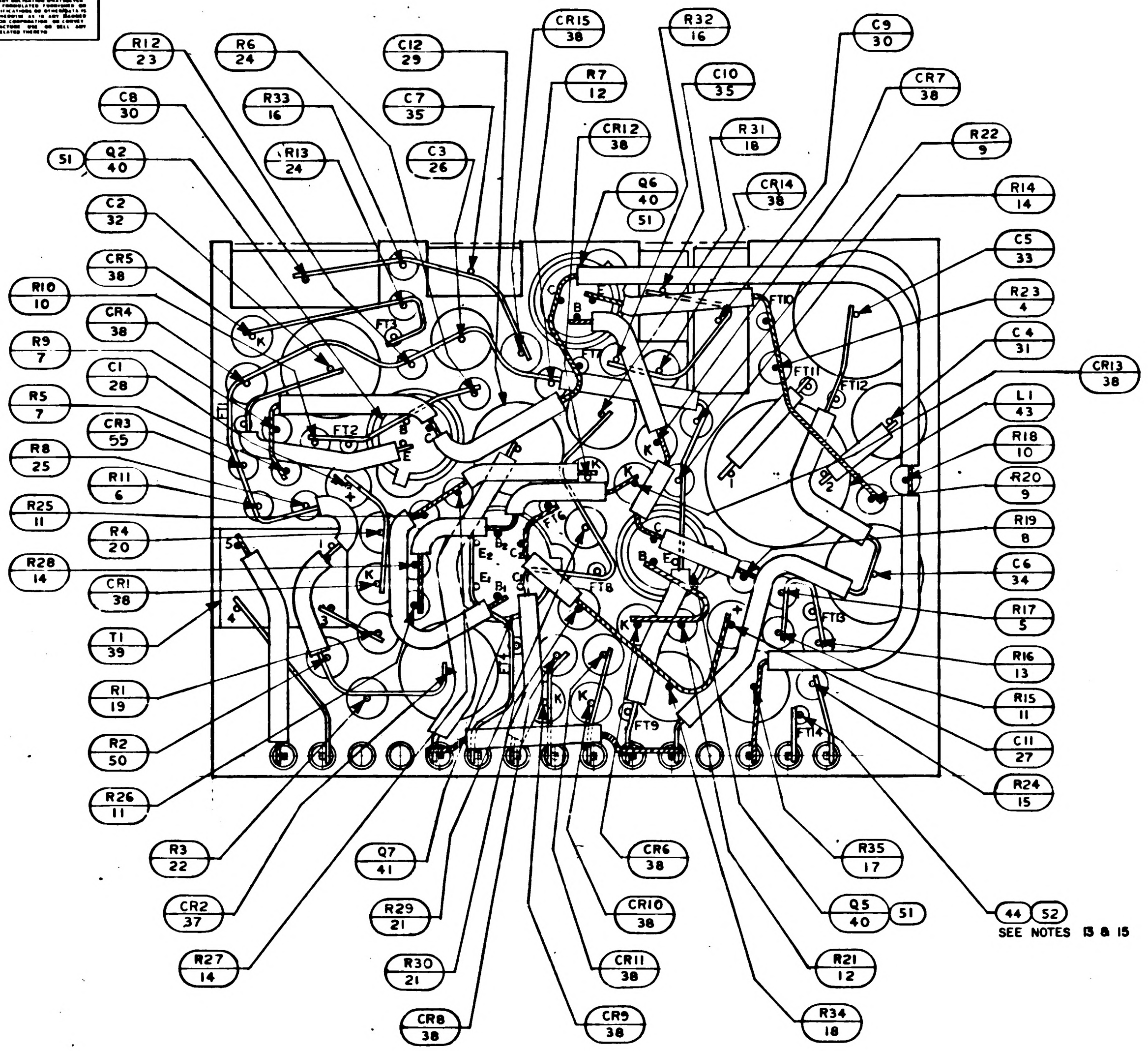
REVISIONS 13233

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 17339	12 MAR 65	Em EF
B	REVISED PER TDRR 17610	24 MAR 65	HTO C7P
C	REVISED PER TDRR 18518	26 APR 65	RJJ AU
D	REVISED PER TDRR 19392	2 JUN 65	HTO
E	REVISED PER TDRR 19437	3 JUN 65	RJJ EF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C9 30
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R33 16
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C10 35
CR7 38
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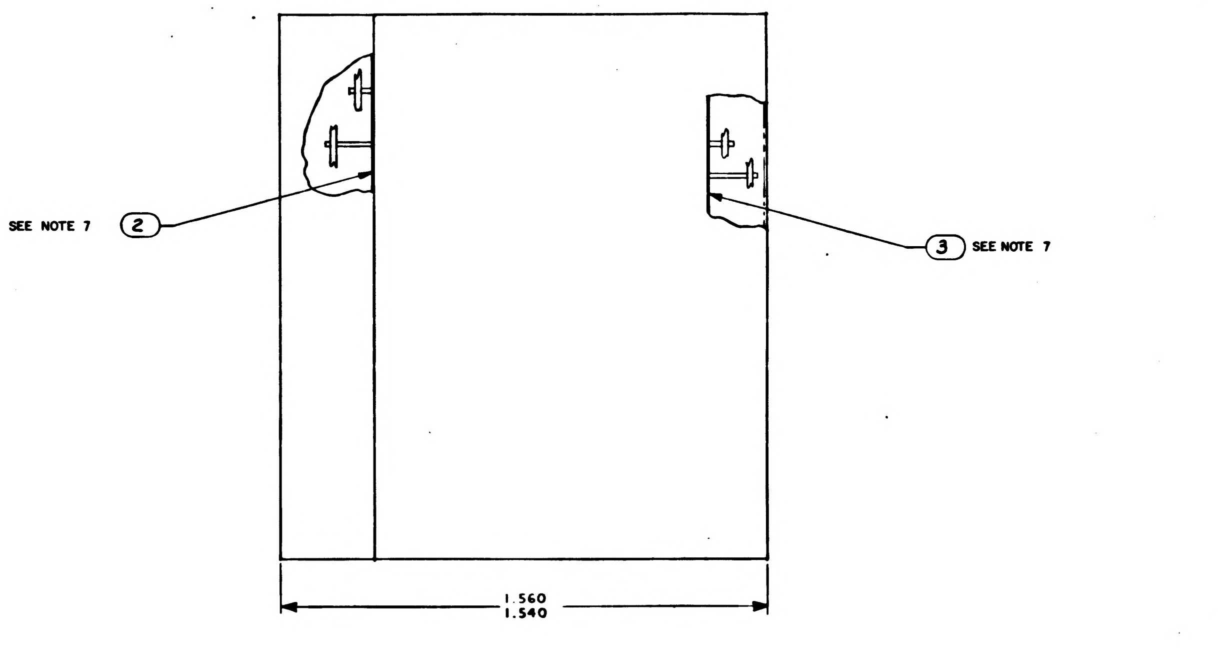
Q2 40
R13 24
C3 26
CR12 38
R31 18
R22 9
Q6 40 51
CR14 38
R14 14
C2 32
C5 33
CR5 38
R10 10
R23 4
CR4 38
C4 31
R9 7
CR13 38
C1 28
L1 43
R5 7
CR3 55
R18 10
R8 25
R20 9
R11 6
R25 11
R19 8
R4 20
C6 34
R28 14
CR1 38
R17 5
T1 39
R16 13
R1 19
R15 11
C11 27
R2 50
R24 15
R26 11
R35 17
R3 22
Q7 41
CR6 38
Q5 40 51
CR2 37
R29 21
CR10 38
44 52
SEE NOTES 13 & 15
R27 14
R30 21
CR11 38
R21 12
CR8 38
CR9 38
R34 18
FT1
FT2
FT8
FT9
FT10
FT11
FT12
FT13
FT14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③ SEE NOTE 7
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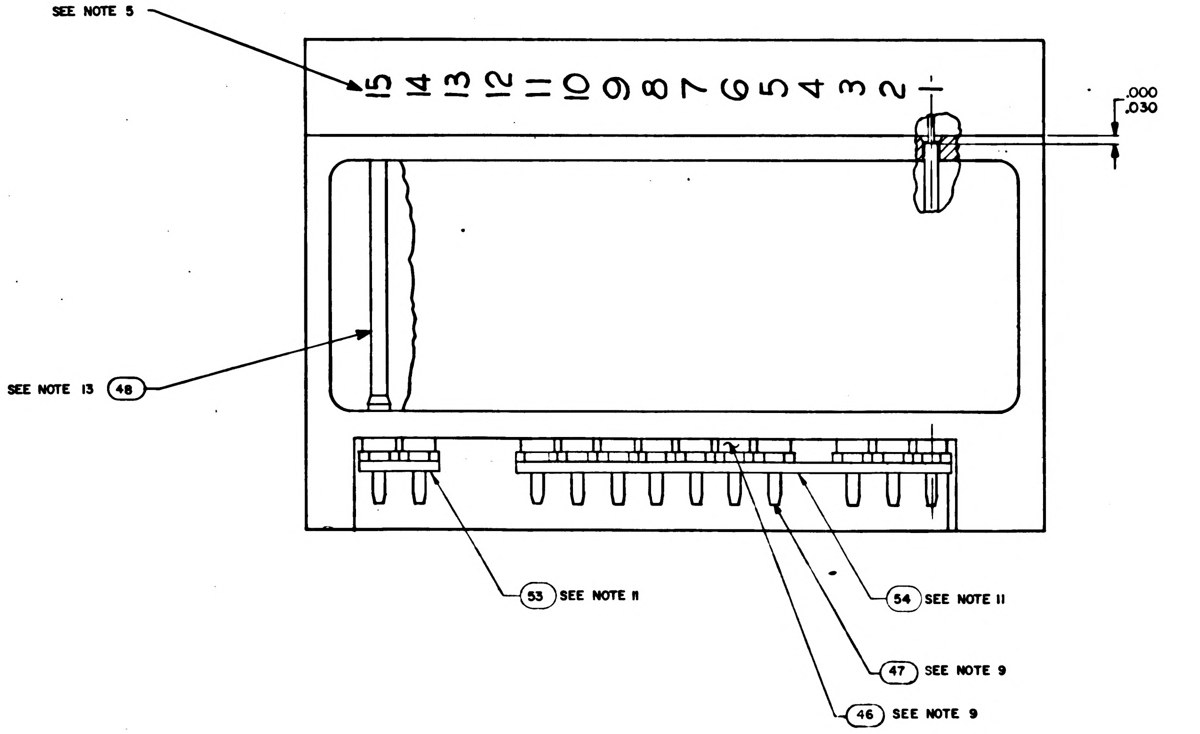
SEE NOTE 5
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.000
.030
SEE NOTE 13 (48)
(53) SEE NOTE 11
(54) SEE NOTE 11
(47) SEE NOTE 9
(46) SEE NOTE 9

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT NAS9-497
DRAWN S. Agne DATE 17 AUG 64
CHECKED A. Udomil 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

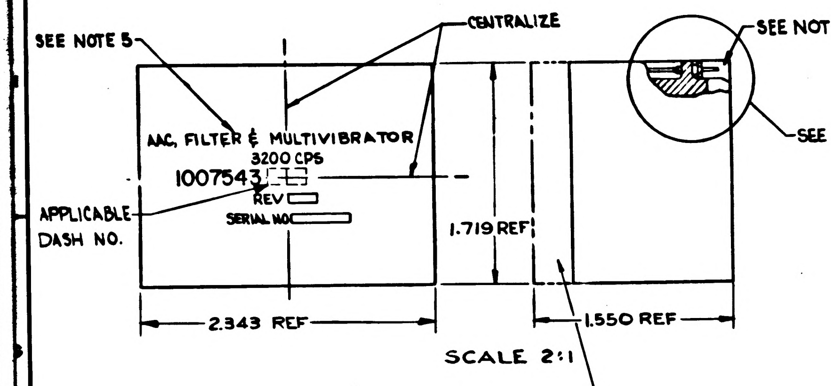
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

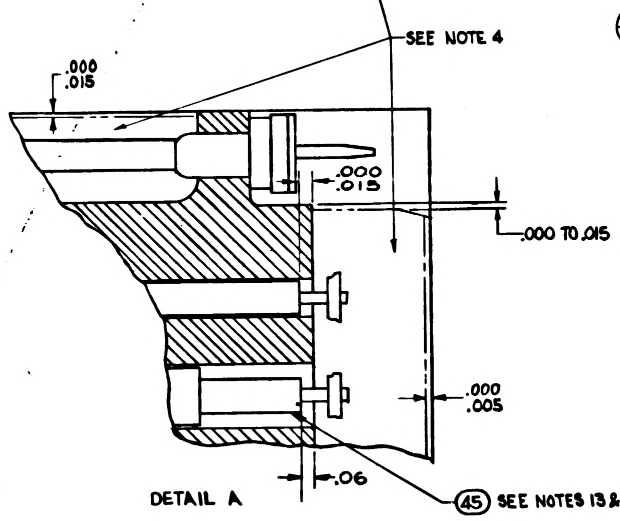
AAC FILTER AND MULTIVIBRATOR
3200 CPS ASSEMBLY

CODE IDENT NO	SIZE	NASA DRAWING NO
80230	E	1007543

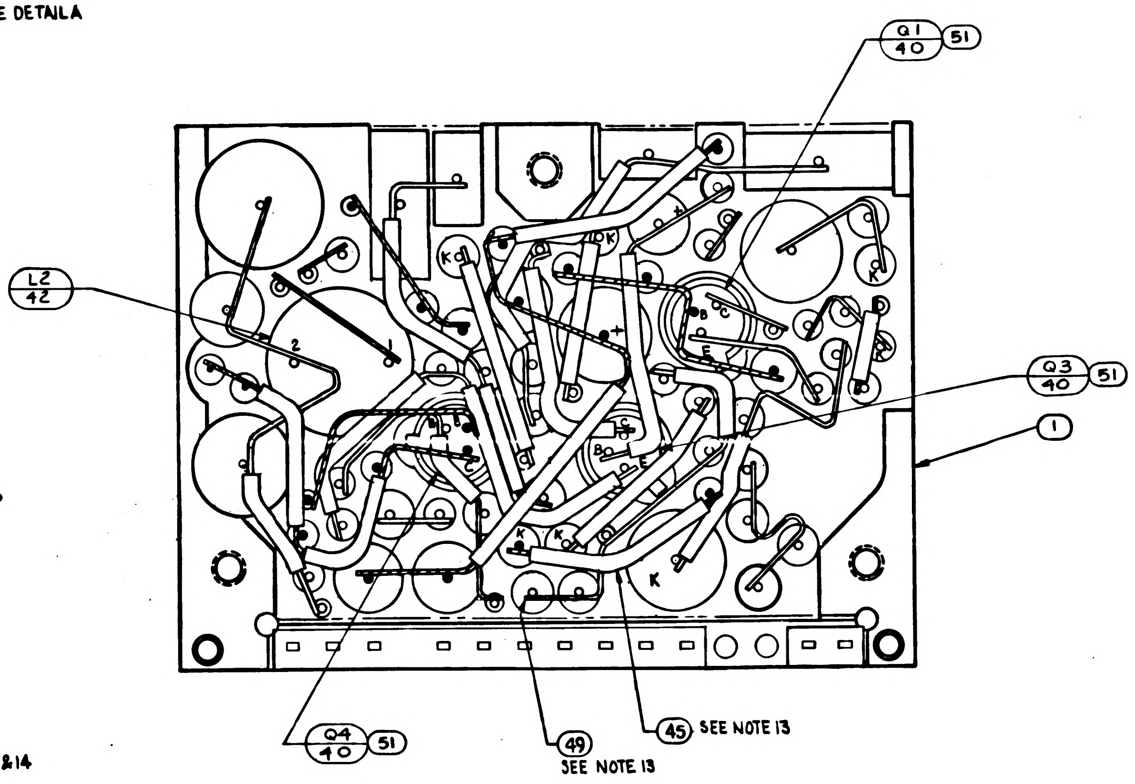
SCALE —— WT SHEET 2 OF 2

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPD
A	-	REVISED PER TDRR 17339	13 MAR 65	EN
B		REVISED PER TDRR 17610	24 MAR 65	MTO
C		REVISED PER TDRR 18518	26 APR 65	RAJ
D		REVISED PER TDRR 19392	2 JUN 65	MTO
E		REVISED PER TDRR 19437	3 JUL 65	
F		REVISED PER TDRR 19509	5 JUL 65	





DETAIL A



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009, METHOD H.
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
4. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
5. MARK PIN NUMBER .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
7. ON ITEMS 2 AND 3:
   - A. BROKEN PATHS INDICATE INSULATION SLEEVING,
   - B. K INDICATES CATHODE SIDE OF DIODE,
   - C. FT( ) INDICATES FEED THROUGH,
   - D. PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   - E. C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   - F. B INDICATES BASE LEAD OF TRANSISTOR,
   - G. E INDICATES EMITTER LEAD OF TRANSISTOR,
   - H. C( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR,
   - I. B( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR,
   - J. E( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR,
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
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10. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. BOND ITEM 53 AND ITEM 54 TO ITEM 46 PER ND1002237.
12. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007043. PART TO BE SELECTED FROM CHART
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR R5 THRU R28, R32, R33, AND CR3
15. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT14
16. PROCURE PER PS1007043.
17. ~~BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
18. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

TABLE C

SELECTION CHART	
PART NUMBER	VALUE
1010410-2	240 PF
-3	270 PF
-4	300 PF
-5	330 PF
-6	360 PF
-7	390 PF
-8	430 PF
-9	470 PF
-10	510 PF
-11	560 PF
-12	620 PF
-13	680 PF
-14	750 PF
-15	820 PF
-16	910 PF
1010410-17	1000 PF

TABLE B

SELECTION CHART	
PART NUMBER	VALUE
1010264-21	.047UF
-22	.056UF
-23	.068UF
-24	.082UF
1010264-25	.100UF

TABLE A

SELECTION CHART	
PART NUMBER	VALUE
1010364-673	158.0K
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-505	21.0K
-501	20.0K
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-491	17.8K
-487	16.9K
-483	16.2K
-479	15.4K
-475	14.7K
-469	13.7K
-465	13.0K
-461	12.4K
-457	11.8K
-455	11.5K
-451	11.0K
-447	10.5K
-443	10.0K
-439	9.53K
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-431	8.66K
-429	8.45K
-427	8.25K
-425	8.06K
-423	7.87K
-421	7.68K
-419	7.50K
-417	7.32K
-415	7.15K
-413	6.98K
-411	6.81K
-409	6.65K
-407	6.49K
-405	6.34K
-403	6.19K
-401	6.04K
-399	5.90K
1010364-397	5.76K

~~TABLE I~~

~~CONFIGURATION~~	~~BOND BETWEEN WAFER AND HEATSINK~~	~~TOP OF WAFER~~	~~HEATSINK FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE~~
~~WAFER & FLAT HEATSINK~~	~~100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~WAFER AND ADJACENT VERTICAL HEATSINK SURFACE~~	~~CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~HEATSINK FOAM CONTACT SURFACE PERIMETER~~	~~N/A~~	~~N/A~~	~~.25 MIN WIDTH OR TOTAL AVAILABLE ON 80% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE~~

20. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

QUANTITY REQUIRED							
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		X	-		57	PS 1007043 TYPE II	PROCUREMENT SPEC.
		-	X		56	PS 1007043 TYPE I	PROCUREMENT SPEC.
		X	X		REF	1010047	SCHEMATIC, ELECTRICAL
		1	1		55	1010830-11	DIODE
		1	1		54	1008540-11	GASKET, CONNECTOR-MINIATURE
		1	1		53	1008540-2	GASKET, CONNECTOR-MINIATURE
		AR	AR		52	1006776-22	INSULATION SLEEVING, ELEC.
		6	6		51	1008025-1	BUSHING, INSULATOR
		1	1		50	1010364-559	RESISTOR, FIXED
		AR	AR		49	1006757-1	WIRE, NICKEL RIBBON .010×.020
		AR	AR		48	1006776-20	SLEEVING, ELECT INSULATION
		12	12		47	1006782-5	CONTACT, WRAPOST-MALE-MINIATURE
		12	12		46	1006775	INSULATOR, WRAPOST-MALE MINIATURE
		AR	AR		45	1006776-21	SLEEVING, ELECT INSULATION
		AR	AR		44	1006757-8	WIRE FEED THROUGH
		1	1		43	1010309-8	REACTOR
		1	1		42	1010309-3	REACTOR
		1	1		41	1010431	TRANSISTOR
		6	6		40	1010397-1	TRANSISTOR
		1	1		39	1010291-2	TRANSFORMER
		13	13		38	1010385	SEMICONDUCTOR DEVICE, DIODE
		1	1		37	1010346-1	SEMICONDUCTOR DEVICE, DIODE
			~~1~~		36	~~1010286-11~~	~~SEMICONDUCTOR DEVICE, DIODE~~
		2	2		35	SEE TABLE C	CAPACITOR-FIXED
		1	1		34	SEE TABLE B	
		1	1		33	1010264-29	
		1	1		32	1010264-21	
		1	1		31	1010264-17	
		2	2		30	1006793-007	
		1	1		29	1006755-8	
		1	1		28	-69	
		1	1		27	-64	
		1	1		26	1006755-31	CAPACITOR-FIXED
		1	1		25	1010369-140	RESISTOR-FIXED
		2	2		24	1010369-95	
		1	1		23	1010369-88	
		1	1		22	SEE TABLE A	
		2	2		21	1010364-693	
		1	1		20	1010364-403	
		1	1		19	1010364-251	
		2	2		18	1010363-351	
		1	1		17	1010278-56	
		2	2		16	1006750-76	
		1	1		15	-73	
		3	3		14	-72	
		1	1		13	-62	
		2	2		12	-60	
		3	3		11	-56	
		2	2		10	-52	
		2	2		9	-48	
		1	1		8	-44	
		2	2		7	-42	
		1	1		6	-40	
		1	1		5	-32	
		1	1		4	1006750-19	RESISTOR-FIXED
		1	1		3	1015728	INSULATOR, LOWER
		1	1		2	1015727	INSULATOR, UPPER
		1	1		1	1015726	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS .XX ±.02 ANGLES ±
.XXX ±.005
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

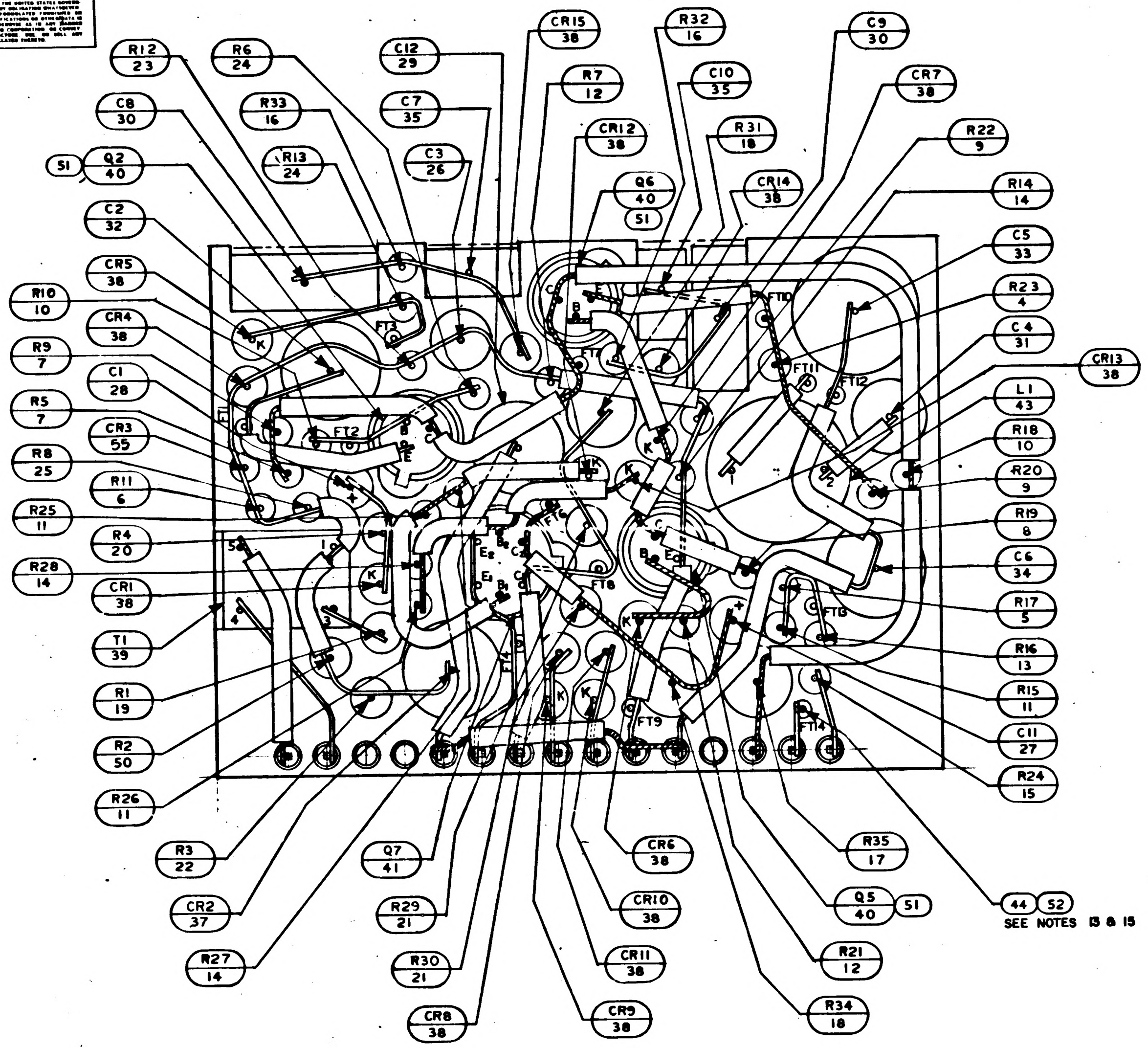
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN S. Agne DATE 17 AUG 64
CHECKED A. Adamick 22 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL 1 Oct 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AAC FILTER AND MULTIVIBRATOR
3200 CPS
ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1007543
SCALE 5:1
SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.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R13 24
C3 26
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R22 9
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CR14 38
R14 14
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CR5 38
R23 4
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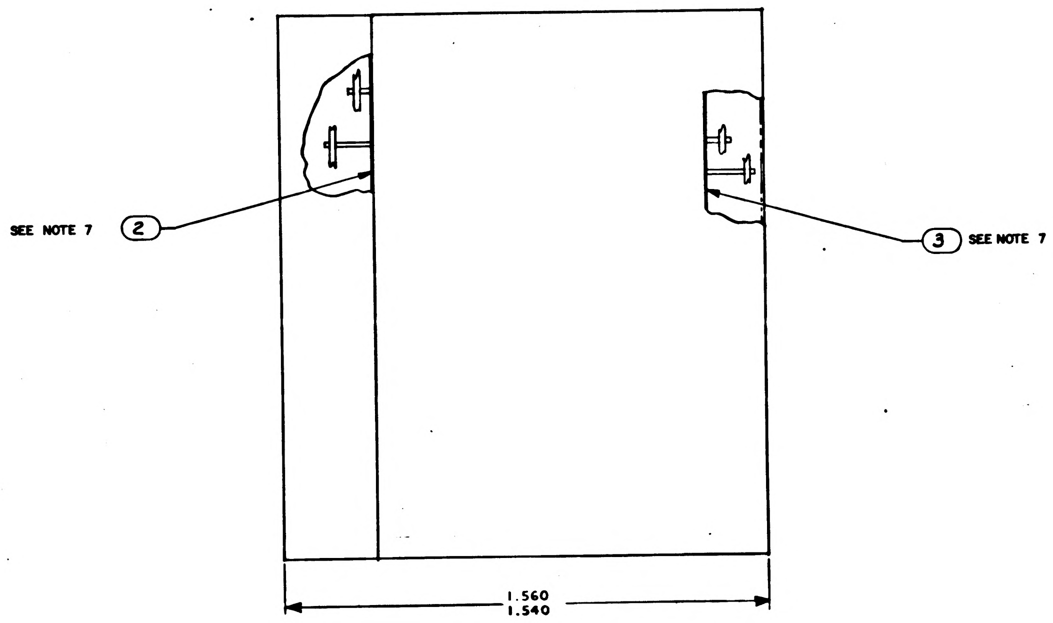
R5 7
CR3 55
R20 9
R8 25
R11 6
R19 8
R25 11
R4 20
C6 34
R28 14
CR1 38
R17 5
T1 39
R16 13
R1 19
R15 11
C11 27
R2 50
R24 15
R26 11
R3 22
CR6 38
R35 17
Q7 41
CR2 37
CR10 38
Q5 40
51
44
52
SEE NOTES 13 & 15
R29 21
R27 14
CR11 38
R21 12
R30 21
CR8 38
CR9 38
R34 18
FT1
FT2
FT3
FT6
FT7
FT8
FT9
FT10
FT11
FT12
FT14

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 17339	12 MAR 65	
B	REVISED PER TDRR 17610	24 MAR 65	C7P
C	REVISED PER TDRR 18518	26 APR 65	
D	REVISED PER TDRR 19392		
E	REVISED PER TDRR 19437		
F	REVISED PER TDRR 19509		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SEE NOTE 7
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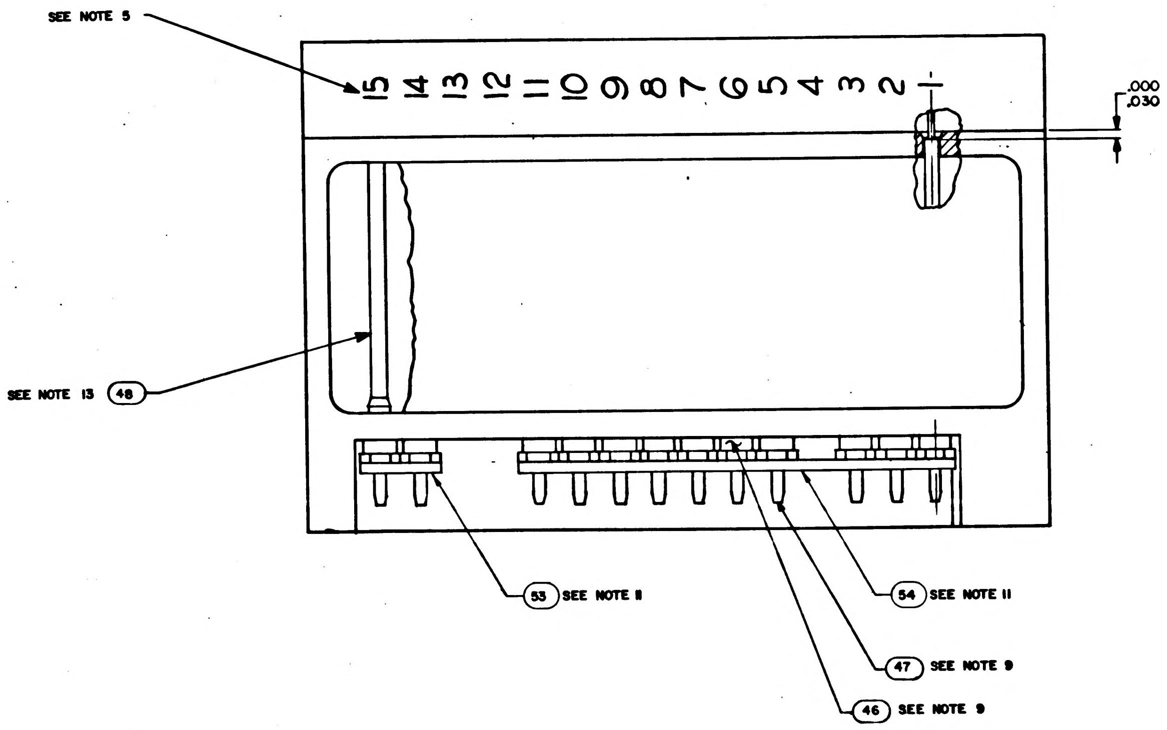
1.540


SEE NOTE 5
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SEE NOTE 13
48
53
SEE NOTE 11
54
SEE NOTE 11
47
SEE NOTE 9
46
SEE NOTE 9

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

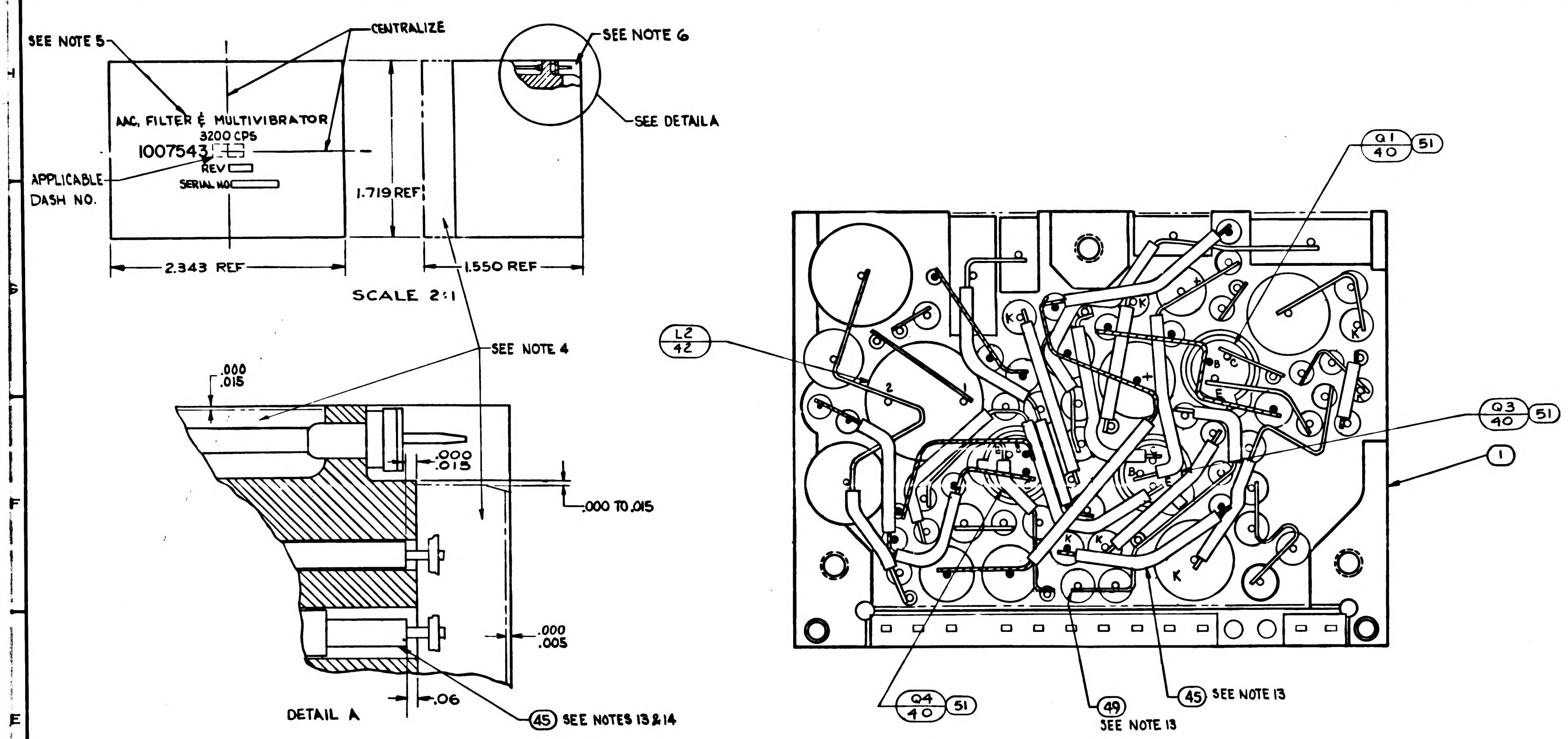
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
CONTRACT NAS9-4??
DRAWN S. Agne DATE 17 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10 6 64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AAC FILTER AND MULTIVIBRATOR
3200 CPS ASSEMBLY

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1007543
SCALE
WT
SHEET 2 OF 2

SYM	ZONE	DESCRIPTION		DATE	APPD
A	-	REVISED PER TDRR 17339	CHG NO.	[illegible]	
B		REVISED PER TDRR 17610		[illegible]	
C		REVISED PER TDRR 18518		26 APR 65	RJJ
D		REVISED PER TDRR 19392		65	
E		REVISED PER TDRR 19437		65	
F		REVISED PER TDRR 19509		5 65	
G		REVISED PER TDRR 20143		65	



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009, METHOD H.
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
4. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
5. MARK PIN NUMBER .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
7. ON ITEMS 2 AND 3:
   - A. BROKEN PATHS INDICATE INSULATION SLEEVING,
   - B. K INDICATES CATHODE SIDE OF DIODE,
   - C. FT( ) INDICATES FEED THROUGH,
   - D. PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   - E. C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   - F. B INDICATES BASE LEAD OF TRANSISTOR,
   - G. E INDICATES EMITTER LEAD OF TRANSISTOR,
   - H. C( ) INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR,
   - I. B( ) INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR,
   - J. E( ) INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR,
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. ASSEMBLE PER ND-1002136
10. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. ~~BOND ITEM 53 AND ITEM 54 TO ITEM 46 PER ND1002237.~~
12. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007043. PART TO BE SELECTED FROM CHART
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR R5 THRU R28, R32, R33, AND CR3
15. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT14
16. PROCURE PER PS1007043.
17. ~~BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
18. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
20. EXCEPT FOR THE HELICOIL MOUNTING SURFACE PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

TABLE C

SELECTION CHART

PART NUMBER	VALUE
1010410-2	240 PF
-3	270 PF
-4	300 PF
-5	330 PF
-6	360 PF
-7	390 PF
-8	430 PF
-9	470 PF
-10	510 PF
-11	560 PF
-12	620 PF
-13	680 PF
-14	750 PF
-15	820 PF
-16	910 PF
1010410-17	1000 PF

TABLE B

SELECTION CHART

PART NUMBER	VALUE
1010264-21	.047UF
-22	.056UF
-23	.068UF
-24	.082UF
1010264-25	.100UF

TABLE A

SELECTION CHART

PART NUMBER	VALUE
1010364-673	158.0K
-635	100.0K
-609	73.2K
-593	60.4K
-577	49.9K
-565	43.2K
-553	37.4K
-543	33.2K
-533	29.4K
-525	26.7K
-517	24.3K
-509	22.1K
-505	21.0K
-501	20.0K
-495	18.7K
-491	17.8K
-487	16.9K
-483	16.2K
-479	15.4K
-475	14.7K
-469	13.7K
-465	13.0K
-461	12.4K
-457	11.8K
-455	11.5K
-451	11.0K
-447	10.5K
-443	10.0K
-439	9.53K
-435	9.09K
-433	8.37K
-431	8.66K
-429	8.45K
-427	8.25K
-425	8.06K
-423	7.87K
-421	7.68K
-419	7.50K
-417	7.32K
-415	7.15K
-413	6.98K
-411	6.81K
-409	6.65K
-407	6.49K
-405	6.34K
-403	6.19K
-401	6.04K
-399	5.90K
1010364-397	5.76K

~~TABLE I~~

~~CONFIGURATION~~	~~BOND BETWEEN WAFER AND HEATSINK~~	~~TOP OF WAFER~~	~~HEATSINK/FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE~~
~~WAFER & FLAT HEATSINK~~	~~100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~WAFER AND ADJACENT VERTICAL HEATSINK SURFACE~~	~~CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~HEATSINK FOAM CONTACT SURFACE PERIMETER~~	~~N/A~~	~~N/A~~	~~.25 MIN WIDTH OR TOTAL AVAILABLE ON 80% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE~~

QUANTITY REQUIRED							
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
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		-	X		56	PS 1007043 TYPE I	PROCUREMENT SPEC.
		X	X		REF	1010047	SCHEMATIC, ELECTRICAL
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		1	1		54	1008540-11	GASKET, CONNECTOR-MINIATURE
		1	1		53	1008540-2	GASKET, CONNECTOR-MINIATURE
		AR	AR		52	1006776-22	INSULATION SLEEVING, ELEC.
		6	6		51	1008025-1	BUSHING, INSULATOR
		1	1		50	1010364-559	RESISTOR, FIXED
		AR	AR		49	1006757-1	WIRE, NICKEL RIBBON .010×.020
		AR	AR		48	1006776-20	SLEEVING, ELECT INSULATION
		12	12		47	1006782-5	CONTACT, WRAPOST-MALE-MINIATURE
		12	12		46	1006775	INSULATOR, WRAPOST-MALE MINIATURE
		AR	AR		45	1006776-21	SLEEVING, ELECT INSULATION
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		1	1		42	1010309-3	REACTOR
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		6	6		40	1010397-1	TRANSISTOR
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		13	13		38	1010385	SEMICONDUCTOR DEVICE, DIODE
		1	1		37	1010346-1	SEMICONDUCTOR DEVICE, DIODE
			~~1~~		36	~~1010286-11~~	~~SEMICONDUCTOR DEVICE, DIODE~~
		2	2		35	SEE TABLE C	CAPACITOR - FIXED
		1	1		34	SEE TABLE B	
		1	1		33	1010264-29	
		1	1		32	1010264-21	
		1	1		31	1010264-17	
		2	2		30	1006793-007	
		1	1		29	1006755-81	
		1	1		28	-69	
		1	1		27	-64	
		1	1		26	1006755-31	CAPACITOR - FIXED
		1	1		25	1010369-140	RESISTOR - FIXED
		2	2		24	1010369-95	
		1	1		23	1010369-88	
		1	1		22	SEE TABLE A	
		2	2		21	1010364-693	
		1	1		20	1010364-403	
		1	1		19	1010364-251	
		2	2		18	1010363-351	
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		1	1		8	-44	
		2	2		7	-42	
		1	1		6	-40	
		1	1		5	-32	
		1	1		4	1006750-19	RESISTOR - FIXED
		1	1		3	1015728	INSULATOR, LOWER
		1	1		2	1015727	INSULATOR, UPPER
		1	1		1	1015726	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +- DECIMALS .XX ±.02 .XXX ±.005 ANGLES +-
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN S. Ayne DATE 17 AUG 64
CHECKED [illegible] 22 [illegible] 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

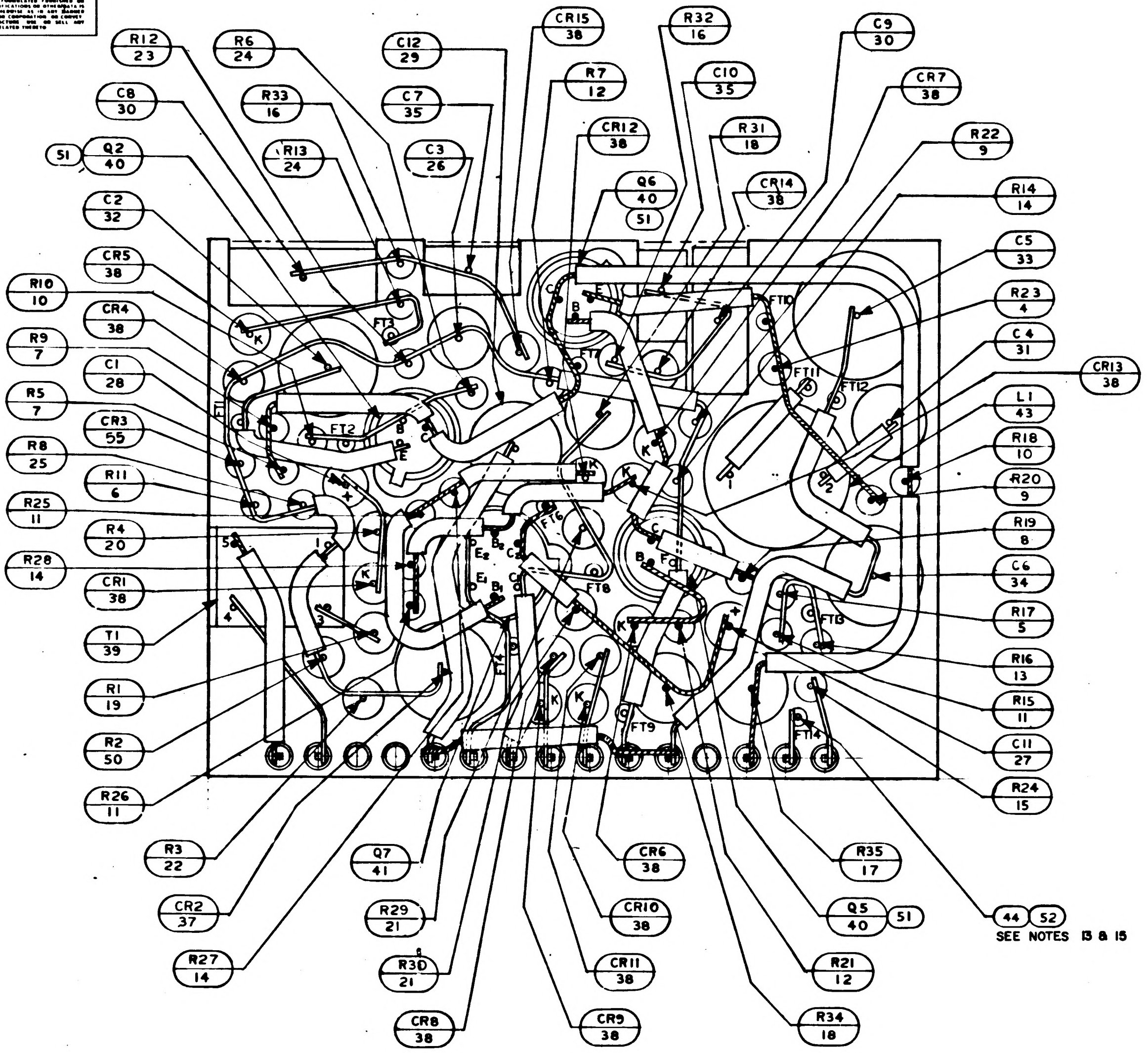
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AAC FILTER AND MULTIVIBRATOR
3200 CPS
ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1007543
SCALE 5:1
SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 17339		
B	REVISED PER TDRR 17610		
C	REVISED PER TDRR 18518	26 APR 6	R. J
D	REVISED PER TDRR 19392		
E	REVISED PER TDRR 19437		R.
F	REVISED PER TDRR 19509		
G	REVISED PER TDRR 20143		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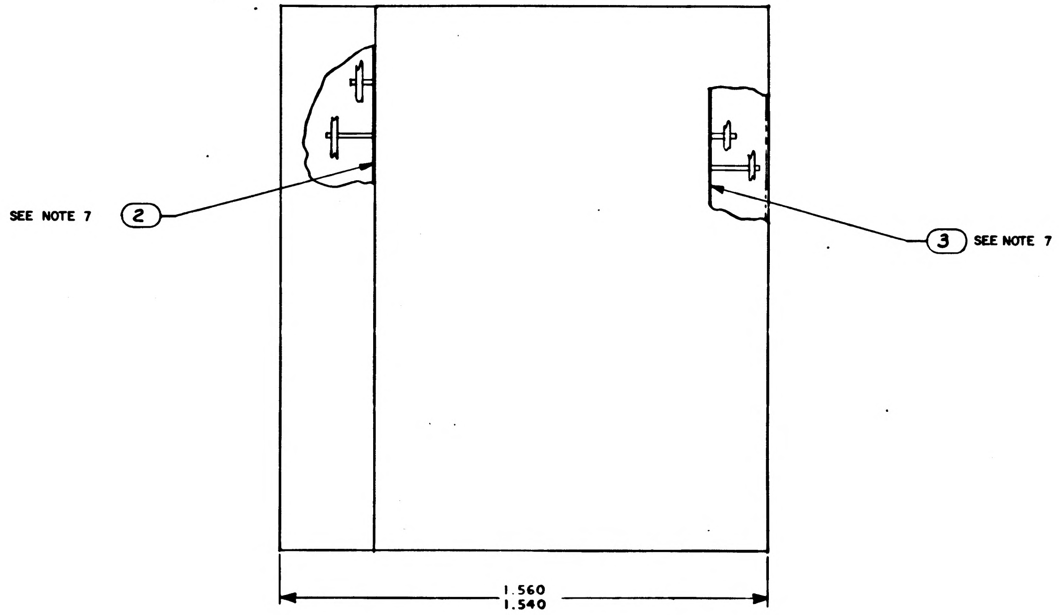
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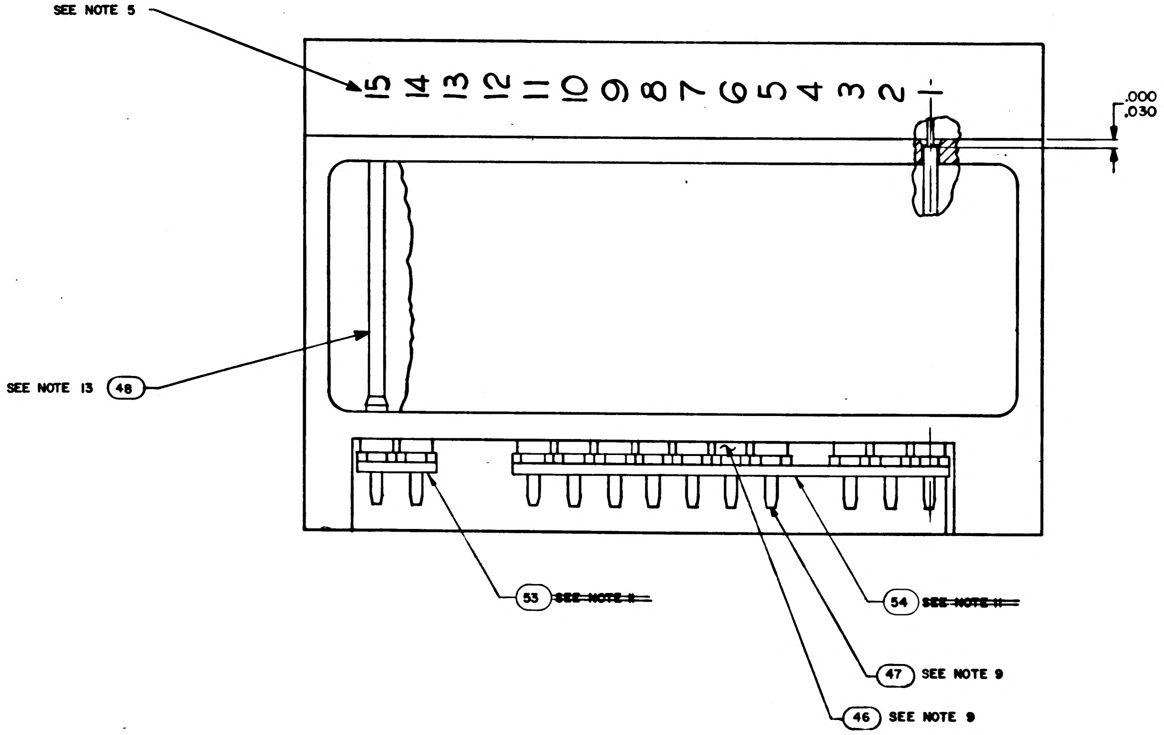
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.030
SEE NOTE 13
48
53
~~SEE NOTE 8~~
54
~~SEE NOTE 11~~
47
SEE NOTE 9
46
SEE NOTE 9

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

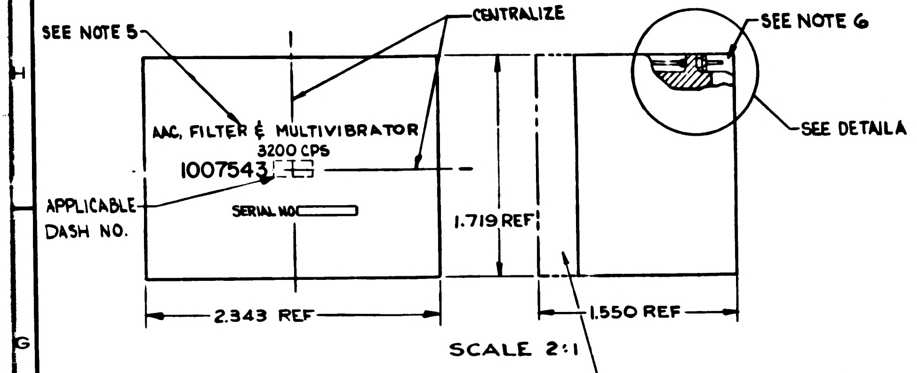
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT NAS9-497
DRAWN S. Agne DATE 17 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10 6 64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

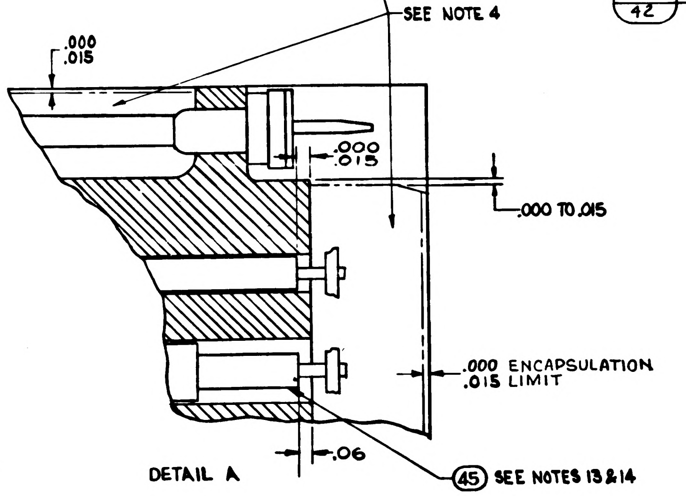
AAC FILTER AND MULTIVIBRATOR 3200 CPS ASSEMBLY

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1007543
SCALE —
WT
SHEET 2 OF 2

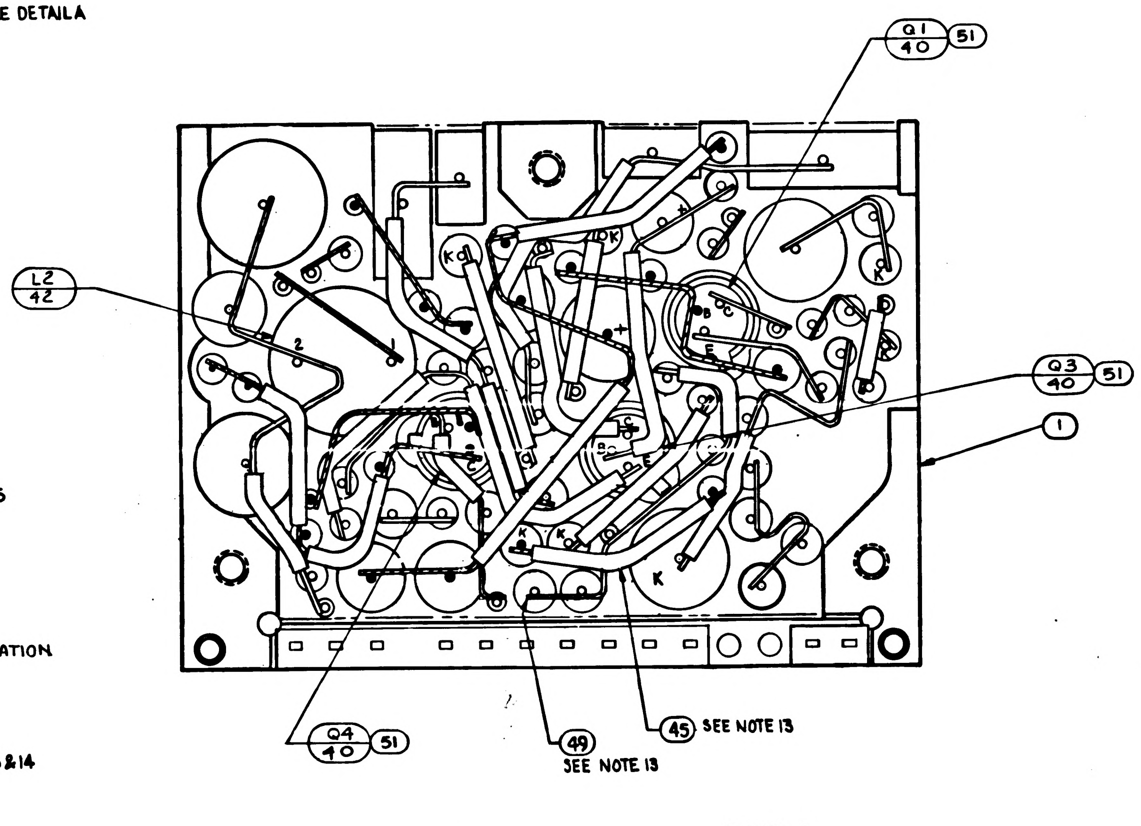
SYM	ZONE	DESCRIPTION	DATE	APPD
A	-	REVISED PER TDRR 17339		
B		REVISED PER TDRR 17610		
C		REVISED PER TDRR 18518	APR 65	
D		REVISED PER TDRR 19392	65	
E		REVISED PER TDRR 19437		
F		REVISED PER TDRR 19509	65	
G		REVISED PER TDRR 20143		
H		REVISED PER TDRR 22963		



SCALE 2:1



DETAIL A



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009, METHOD J.
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
4. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
5. MARK PIN NUMBER .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
7. ON ITEMS 2 AND 3:
   - A. BROKEN PATHS INDICATE INSULATION SLEEVING,
   - B. K INDICATES CATHODE SIDE OF DIODE,
   - C. FT( ) INDICATES FEED THROUGH,
   - D. PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   - E. C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   - F. B INDICATES BASE LEAD OF TRANSISTOR,
   - G. E INDICATES EMITTER LEAD OF TRANSISTOR,
   - H. $C_{()}$ INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR,
   - I. $B_{()}$ INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR,
   - J. $E_{()}$ INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR,
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. ASSEMBLE PER ND-1002136
10. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. ~~BOND ITEM 53 AND ITEM 54 TO ITEM 46 PER ND1002237.~~
12. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007043. PART TO BE SELECTED FROM CHART
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR R5 THRU R28, R32, R33, AND CR3
15. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT14
16. PROCURE PER PS1007043.
17. ~~BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
18. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

TABLE C

SELECTION CHART

PART NUMBER	VALUE
1010410-2	240 PF
-3	270 PF
-4	300 PF
-5	330 PF
-6	360 PF
-7	390 PF
-8	430 PF
-9	470 PF
-10	510 PF
-11	560 PF
-12	620 PF
-13	680 PF
-14	750 PF
-15	820 PF
-16	910 PF
1010410-17	1000 PF

TABLE B

SELECTION CHART

PART NUMBER	VALUE
1010264-21	.047UF
-22	.056UF
-23	.068UF
-24	.082UF
1010264-25	.100UF

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 80% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

20. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

TABLE A

SELECTION CHART

PART NUMBER	VALUE
1010364-673	158.0K
-635	100.0K
-609	73.2K
-593	60.4K
-577	49.9K
-565	43.2K
-553	37.4K
-543	33.2K
-533	29.4K
-525	26.7K
-517	24.3K
-509	22.1K
-505	21.0K
-501	20.0K
-495	18.7K
-491	17.8K
-487	16.9K
-483	16.2K
-479	15.4K
-475	14.7K
-469	13.7K
-465	13.0K
-461	12.4K
-457	11.8K
-455	11.5K
-451	11.0K
-447	10.5K
-443	10.0K
-439	9.53K
-435	9.09K
-433	8.37K
-431	8.66K
-429	8.45K
-427	8.25K
-425	8.06K
-423	7.87K
-421	7.68K
-419	7.50K
-417	7.32K
-415	7.15K
-413	6.98K
-411	6.81K
-409	6.65K
-407	6.49K
-405	6.34K
-403	6.19K
-401	6.04K
-399	5.90K
1010364-397	5.76K

LIST OF PARTS AND MATERIALS

		QUANTITY REQUIRED 021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		X	-		57	PS 1007043 TYPE II	PROCUREMENT SPEC.
		-	X		56	PS 1007043 TYPE I	PROCUREMENT SPEC.
		X	X		REF	1010047	SCHEMATIC, ELECTRICAL
		1	1		55	1010830-11	DIODE
		1	1		54	1008540-11	GASKET, CONNECTOR-MINIATURE
		1	1		53	1008540-2	GASKET, CONNECTOR-MINIATURE
		AR	AR		52	1006776-22	INSULATION SLEEVING, ELEC.
		6	6		51	1008025-1	BUSHING, INSULATOR
		1	1		50	1010364-559	RESISTOR, FIXED
		AR	AR		49	1006757-1	WIRE, NICKEL RIBBON .010 × .020
		AR	AR		48	1006776-20	SLEEVING, ELECT INSULATION
		12	12		47	1006782-5	CONTACT, WRAPOST-MALE-MINIATURE
		12	12		46	1006775	INSULATOR, WRAPOST-MALE MINIATURE
		AR	AR		45	1006776-21	SLEEVING, ELECT INSULATION
		AR	AR		44	1006757-8	WIRE FEED THROUGH
		1	1		43	1010309-8	REACTOR
		1	1		42	1010309-3	REACTOR
		1	1		41	1010431	TRANSISTOR
		6	6		40	1010397-1	TRANSISTOR
		1	1		39	1010291-2	TRANSFORMER
		13	13		38	1010385	SEMICONDUCTOR DEVICE, DIODE
		1	1		37	1010346-1	SEMICONDUCTOR DEVICE, DIODE
					36	~~1010286-11~~	~~SEMICONDUCTOR DEVICE, DIODE~~
		2	2		35	SEE TABLE C	CAPACITOR-FIXED
		1	1		34	SEE TABLE B	
		1	1		33	1010264-29	
		1	1		32	1010264-21	
		1	1		31	1010264-17	
		2	2		30	1006723-007	
		1	1		29	1006755-81	
		1	1		28	-69	
		1	1		27	-64	
		1	1		26	1006755-31	CAPACITOR - FIXED
		1	1		25	1010369-140	RESISTOR-FIXED
		2	2		24	1010369-95	
		1	1		23	1010369-88	
		1	1		22	SEE TABLE A	
		2	2		21	1010364-693	
		1	1		20	1010364-403	
		1	1		19	1010364-251	
		2	2		18	1010363-351	
		1	1		17	1010278-56	
		2	2		16	1006750-76	
		1	1		15	-73	
		3	3		14	-72	
		1	1		13	-62	
		2	2		12	-60	
		3	3		11	-56	
		2	2		10	-52	
		2	2		9	-48	
		1	1		8	-44	
		2	2		7	-42	
		1	1		6	-40	
		1	1		5	-32	
		1	1		4	1006750-19	RESISTOR - FIXED
		1	1		3	1015728	INSULATOR, LOWER
		1	1		2	1015727	INSULATOR, UPPER
		1	1		1	1015726	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS .XX ±.02 .XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

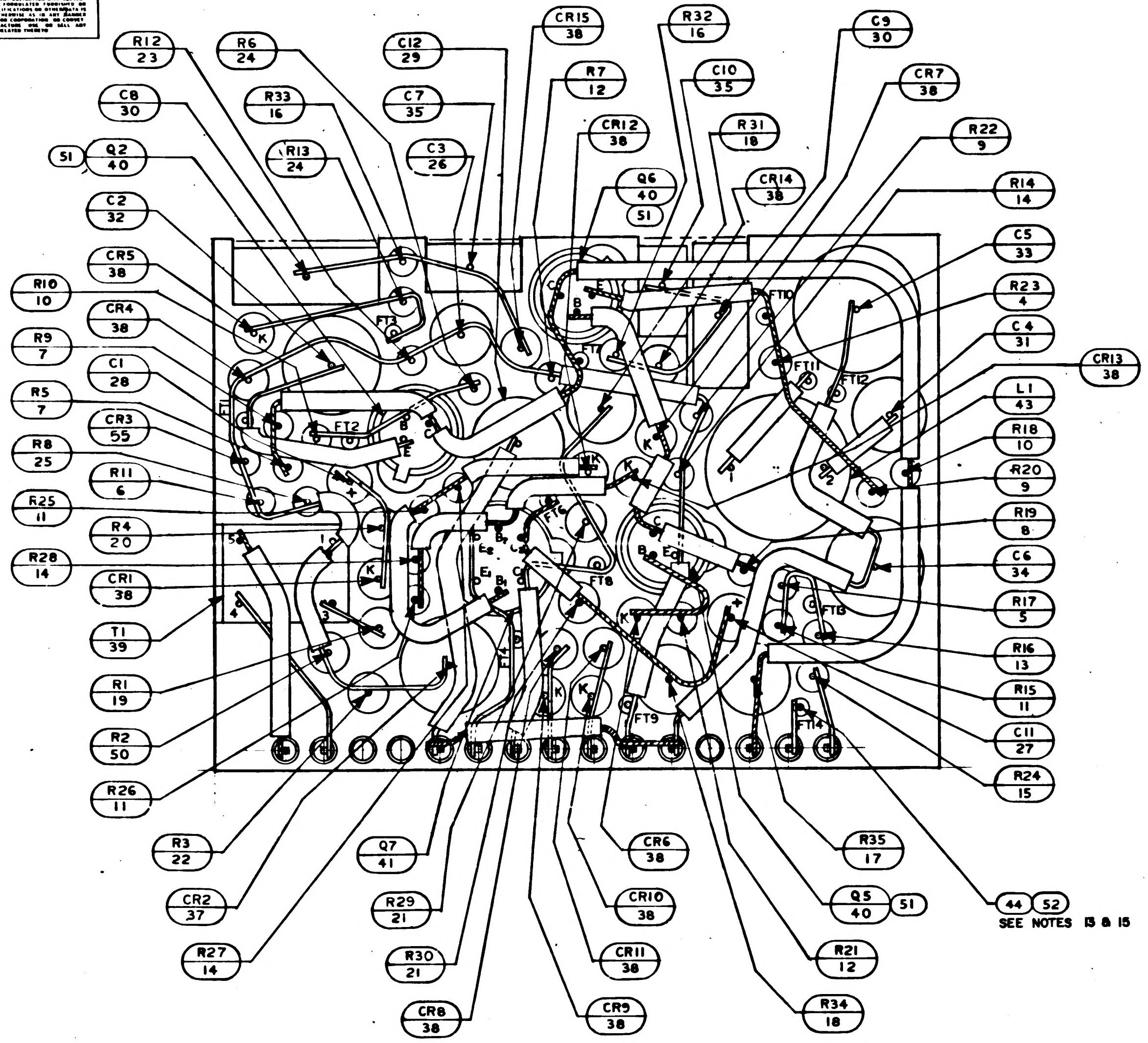
MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN S. Agne DATE 17 AUG 64
CHECKED 27 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AAC FILTER AND MULTIVIBRATOR
3200 CPS
ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1007543
SCALE 5:1
SHEET 1 OF 2

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.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R6 24
C12 29
CR15 38
R32 16
C9 30
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R7 12
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CR7 38
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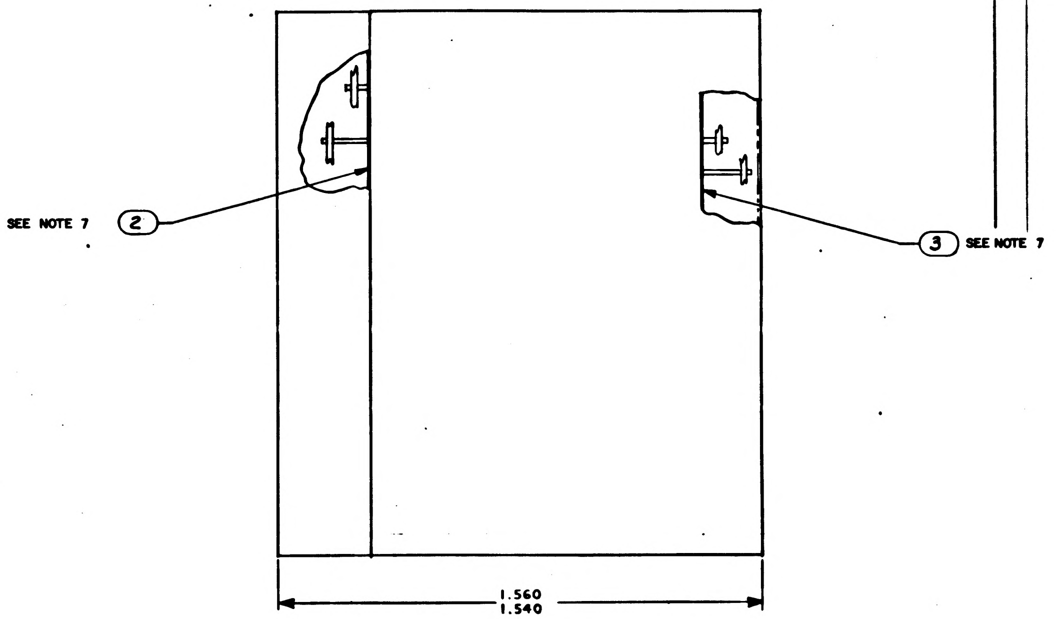
Q2 40
R13 24
C3 26
CR12 38
R31 18
R22 9
Q6 40 51
CR14 38
R14 14
C2 32
C5 33
CR5 38
R23 4
R10 10
C4 31
CR4 38
CR13 38
R9 7
L1 43
C1 28
R18 10
R5 7
CR3 55
R20 9
R8 25
R11 6
R19 8
R25 11
R4 20
C6 34
R28 14
CR1 38
R17 5
T1 39
R16 13
R1 19
R15 11
C11 27
R2 50
R24 15
R26 11
R3 22
Q7 41
CR6 38
R35 17
CR2 37
R29 21
CR10 38
Q5 40 51
44 52 SEE NOTES 13 & 15
R27 14
R30 21
CR11 38
R21 12
CR8 38
CR9 38
R34 18
FT1
FT2
FT3
FT4
FT6
FT8
FT9
FT10
FT11
FT12
FT13
FT14


SEE NOTE 7
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SEE NOTE 7
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1.540

REVISIONS			
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B	REVISED PER TDRR 17610	24 MAR 65	HTL
C	REVISED PER TDRR 18518	26 APR 65	RJJ
D	REVISED PER TDRR 19392	2 JUL 65	HTL
E	REVISED PER TDRR 19437	3 JUL 65	RJJ
F	REVISED PER TDRR 19509	3 JUN 65	
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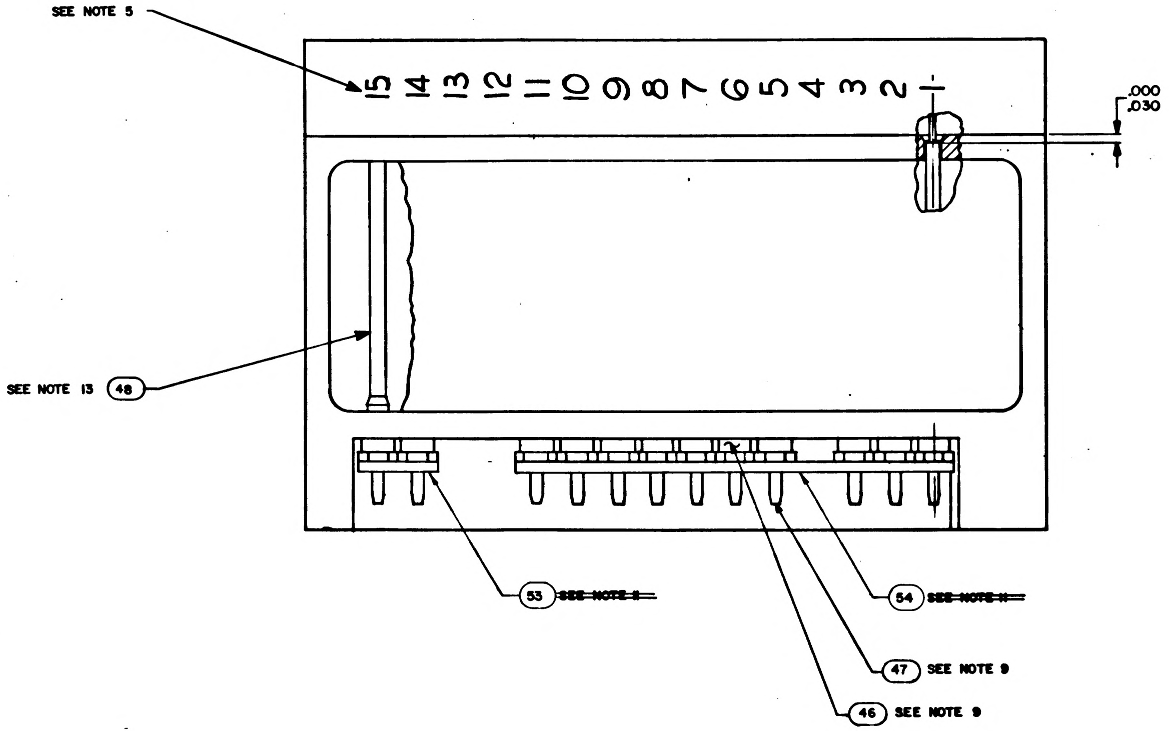
H	REVISION STATUS CHANGED	1 DEC 65	JW AU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.000
.030
SEE NOTE 13
48
53 ~~SEE NOTE 8~~
54 ~~SEE NOTE 11~~
47 SEE NOTE 9
46 SEE NOTE 9

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
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DRAWN S. Agne DATE 17 AUG 64
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APPROVAL
APPROVAL 10-5-64
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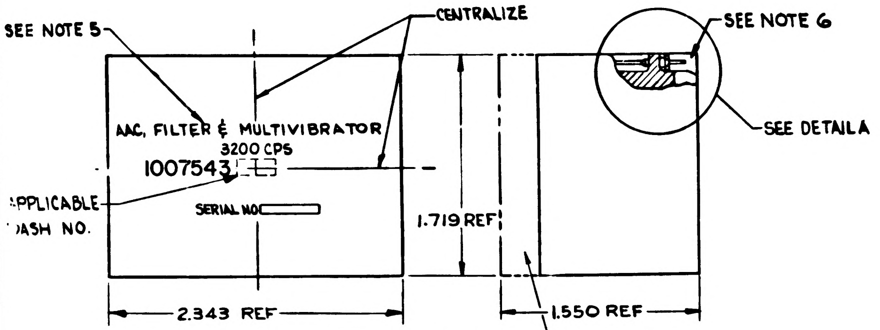
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

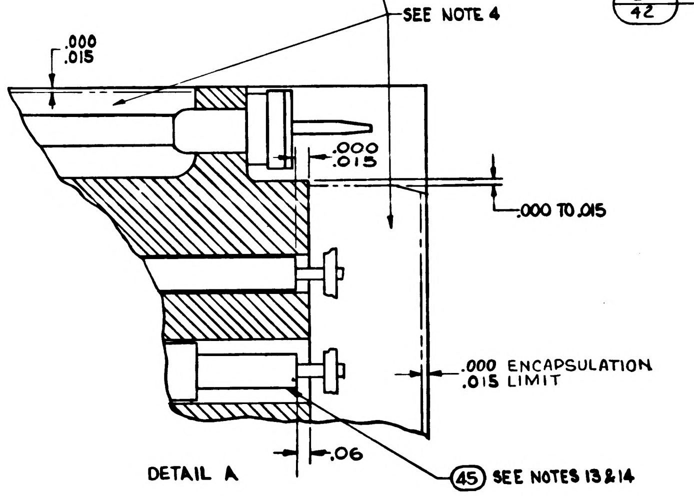
AAC FILTER AND MULTIVIBRATOR
3200 CPS ASSEMBLY

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1007543
SCALE
WT
SHEET 2 OF 2

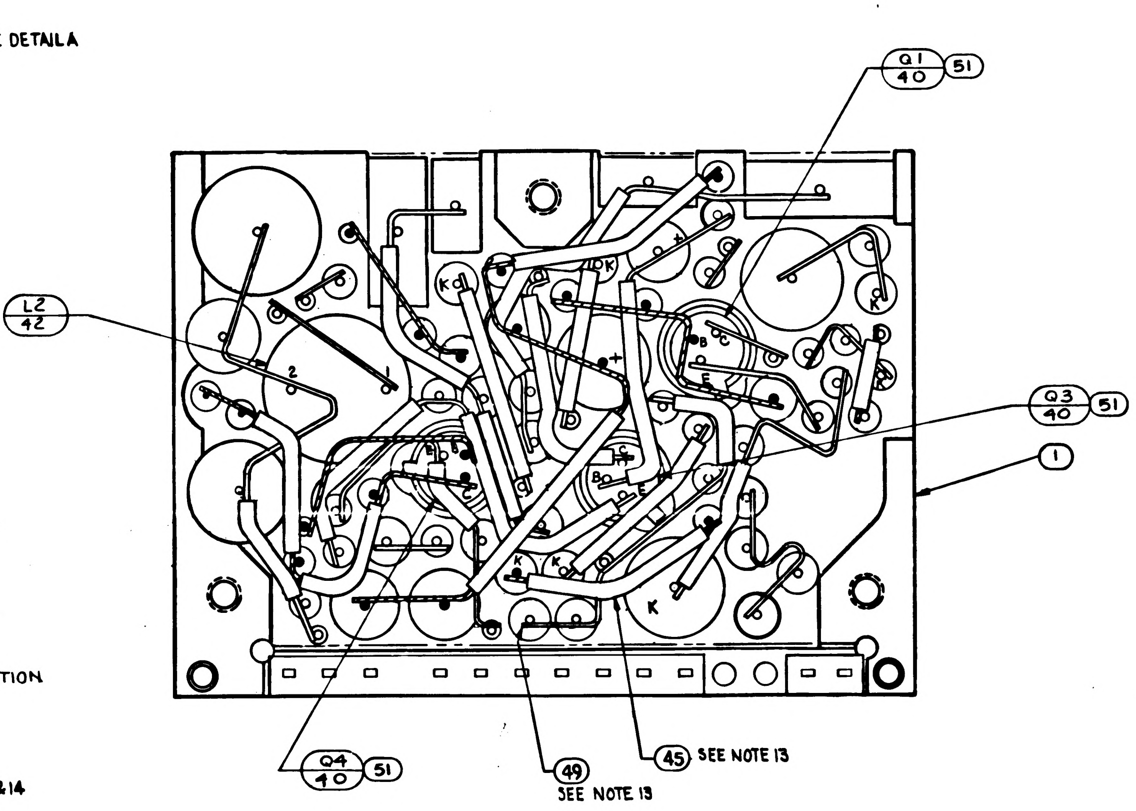
	SYM	ZONE	DESCRIPTION	DATE	APPD.
REVISIONS					
Ⓜ	A	-	REVISED PER TDRR 17339 CHG NO.	3 MAR 65	EN
Ⓜ	B		REVISED PER TDRR 17610	24 MAR 65	HTO
Ⓜ	C		REVISED PER TDRR 18518	26 APR 65	RJJ
	D		REVISED PER TDRR 19392	2 JUN 65	HTO
	E		REVISED PER TDRR 1945[illegible]	3 JUL 65	[illegible]
Ⓜ	F		REVISED PER TDRR 19509	5 JUN 65	[illegible]
Ⓜ	G		REVISED PER TDRR 20143	[illegible] 65	[illegible]
Ⓜ	H		REVISED PER TDRR 22963	12 OCT 65	[illegible]
	J		REVISED PER TDRR 23333	[illegible] 65	[illegible]



SCALE 2:1



DETAIL A



NOTES:

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3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
4. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
5. MARK PIN NUMBER .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
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   - A. BROKEN PATHS INDICATE INSULATION SLEEVING,
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   - C. FT( ) INDICATES FEED THROUGH,
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   - E. C INDICATES COLLECTOR LEAD OF TRANSISTOR,
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   - I. $B_{()}$ INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR,
   - J. $E_{()}$ INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR,
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9. ASSEMBLE PER ND-1002136
10. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. ~~BOND ITEM 53 AND ITEM 54 TO ITEM 46 PER ND1002237.~~
12. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007043. PART TO BE SELECTED FROM CHART
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR R5 THRU R28, R32, R33, AND CR3
15. TYPICAL ~~SLEEVING AND~~ WIRE FOR FT1 THRU FT14
16. PROCURE PER PS1007043.
17. ~~BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
18. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE-I.~~
19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

~~TABLE I~~

~~CONFIGURATION~~	~~BOND BETWEEN WAFER AND HEATSINK~~	~~TOP OF WAFER~~	~~HEATSINK FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE~~
~~WAFER & FLAT HEATSINK~~	~~100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~WAFER AND ADJACENT VERTICAL HEATSINK SURFACE~~	~~CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~HEATSINK FOAM CONTACT SURFACE PERIMETER~~	~~N/A~~	~~N/A~~	~~.25 MIN WIDTH OR TOTAL AVAILABLE ON 80% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE~~

20. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

TABLE C

SELECTION CHART	
PART NUMBER	VALUE
1010410-2	240 PF
-3	270 PF
-4	300 PF
-5	330 PF
-6	360 PF
-7	390 PF
-8	430 PF
-9	470 PF
-10	510 PF
-11	560 PF
-12	620 PF
-13	680 PF
-14	750 PF
-15	820 PF
-16	910 PF
1010410-17	1000 PF

TABLE B

SELECTION CHART	
PART NUMBER	VALUE
1010264-21	.047UF
-22	.056UF
-23	.068UF
-24	.082UF
1010264-25	.100UF

TABLE A

SELECTION CHART	
PART NUMBER	VALUE
1010364-673	158.0K
-635	100.0K
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-593	60.4K
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-517	24.3K
-509	22.1K
-505	21.0K
-501	20.0K
-495	18.7K
-491	17.8K
-487	16.9K
-483	16.2K
-479	15.4K
-475	14.7K
-469	13.7K
-465	13.0K
-461	12.4K
-457	11.8K
-455	11.5K
-451	11.0K
-447	10.5K
-443	10.0K
-439	9.53K
-435	9.09K
-433	8.37K
-431	8.66K
-429	8.45K
-427	8.25K
-425	8.06K
-423	7.87K
-421	7.68K
-419	7.50K
-417	7.32K
-415	7.15K
-413	6.98K
-411	6.81K
-409	6.65K
-407	6.49K
-405	6.34K
-403	6.19K
-401	6.04K
-399	5.90K
1010364-397	5.76K

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 021	QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
AR	AR		58	1010848-2	WIRE, ELECTRICAL-NICKEL
X	-		57	PS1007043 TYPE II	PROCUREMENT SPEC.
-	X		56	PS1007043 TYPE I	PROCUREMENT SPEC.
X	X		REF	1010047	SCHEMATIC, ELECTRICAL
1	1		55	1010830-11	DIODE
1	1		54	1008540-11	GASKET, CONNECTOR-MINIATURE
1	1		53	1008540-2	GASKET, CONNECTOR-MINIATURE
~~AR~~	~~AR~~		~~52~~	~~1006776-22~~	~~INSULATION SLEEVING, ELEC.~~
6	6		51	1008025-1	BUSHING, INSULATOR
1	1		50	1010364-559	RESISTOR, FIXED
AR	AR		49	1006757-1	WIRE, NICKEL RIBBON .010 × .020
AR	AR		48	1006776-20	SLEEVING, ELECT INSULATION
12	12		47	1006782-5	CONTACT, WRAPOST-MALE-MINIATURE
12	12		46	1006775	INSULATOR, WRAPOST-MALE MINIATURE
AR	AR		45	1006776-21	SLEEVING, ELECT INSULATION
~~AR~~	~~AR~~		~~44~~	~~1006757-8~~	~~WIRE FEED THROUGH~~
1	1		43	1010309-8	REACTOR
1	1		42	1010309-3	REACTOR
1	1		41	1010431	TRANSISTOR
6	6		40	1010397-1	TRANSISTOR
1	1		39	1010291-2	TRANSFORMER
13	13		38	1010385	SEMICONDUCTOR DEVICE, DIODE
1	1		37	1010346-1	SEMICONDUCTOR DEVICE, DIODE
	~~1~~		~~36~~	~~1010286-11~~	~~SEMICONDUCTOR DEVICE, DIODE~~
2	2		35	SEE TABLE C	CAPACITOR-FIXED
1	1		34	SEE TABLE B	
1	1		33	1010264-29	
1	1		32	1010264-21	
1	1		31	1010264-17	
2	2		30	1006793-007	
1	1		29	1006755-81	
1	1		28	-69	
1	1		27	-64	
1	1		26	1006755-31	CAPACITOR - FIXED
1	1		25	1010369-140	RESISTOR-FIXED
2	2		24	1010369-95	
1	1		23	1010369-88	
1	1		22	SEE TABLE A	
2	2		21	1010364-693	
1	1		20	1010364-403	
1	1		19	1010364-251	
2	2		18	1010363-351	
1	1		17	1010278-56	
2	2		16	1006750-76	
1	1		15	-73	
3	3		14	-72	
1	1		13	-62	
2	2		12	-60	
3	3		11	-56	
2	2		10	-52	
2	2		9	-48	
1	1		8	-44	
2	2		7	-42	
1	1		6	-40	
1	1		5	-32	
1	1		4	1006750-19	RESISTOR - FIXED
1	1		3	1015728	INSULATOR, LOWER
1	1		2	1015727	INSULATOR, UPPER
1	1		1	1015726	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - .XX ± .02 + -
- - .XXX ± .005 - -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

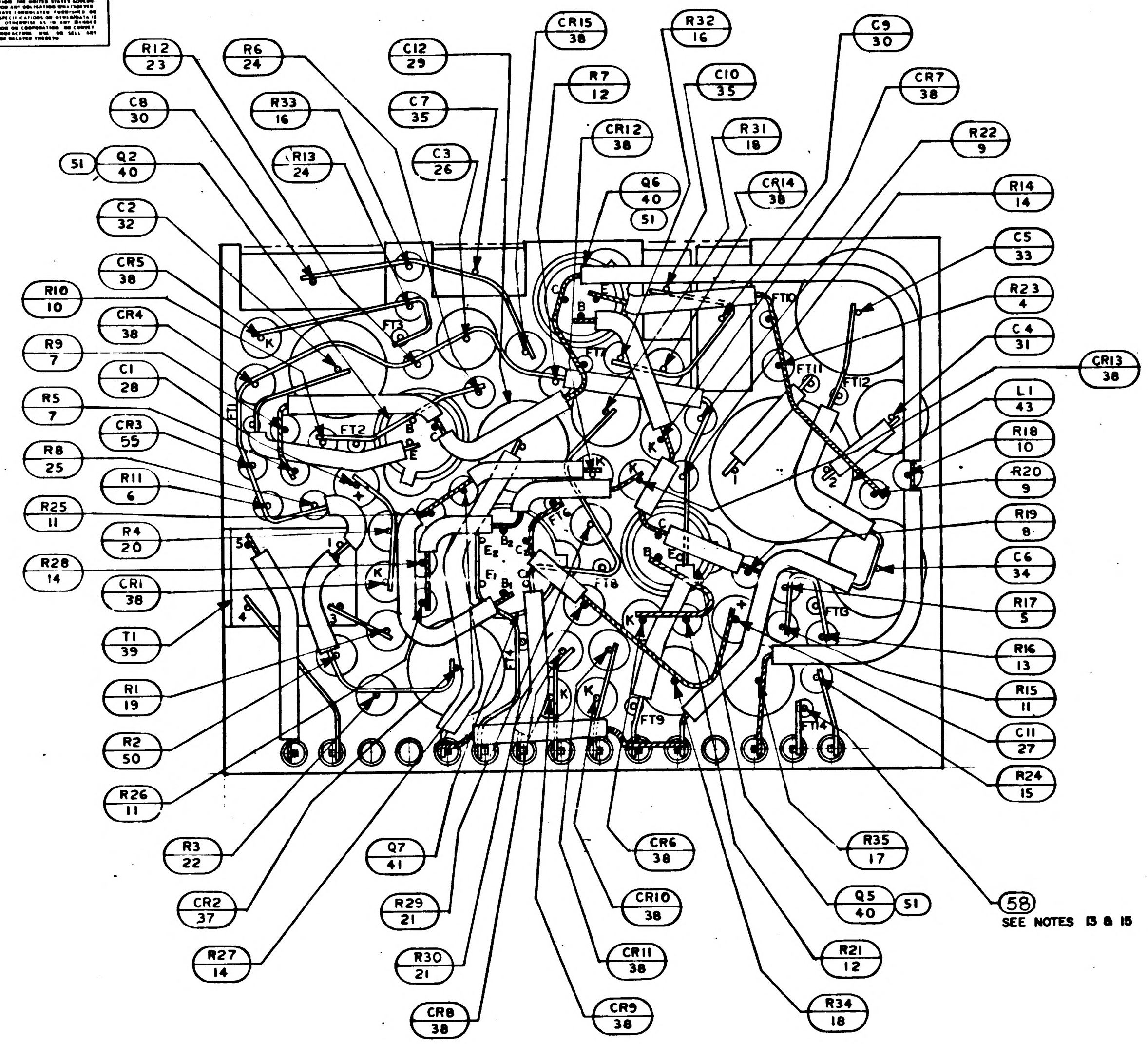
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN S. Agne DATE 17 AUG 64
CHECKED [illegible] 27 [illegible] 64
APPROVAL [illegible]
APPROVAL [illegible] 2-5-64
NASA APPROVAL W. J. [illegible] 10-6-64
MIT APPROVAL [illegible] Oct 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AAC FILTER AND MULTIVIBRATOR
3200 CPS
ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1007543
SCALE 5:1
SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.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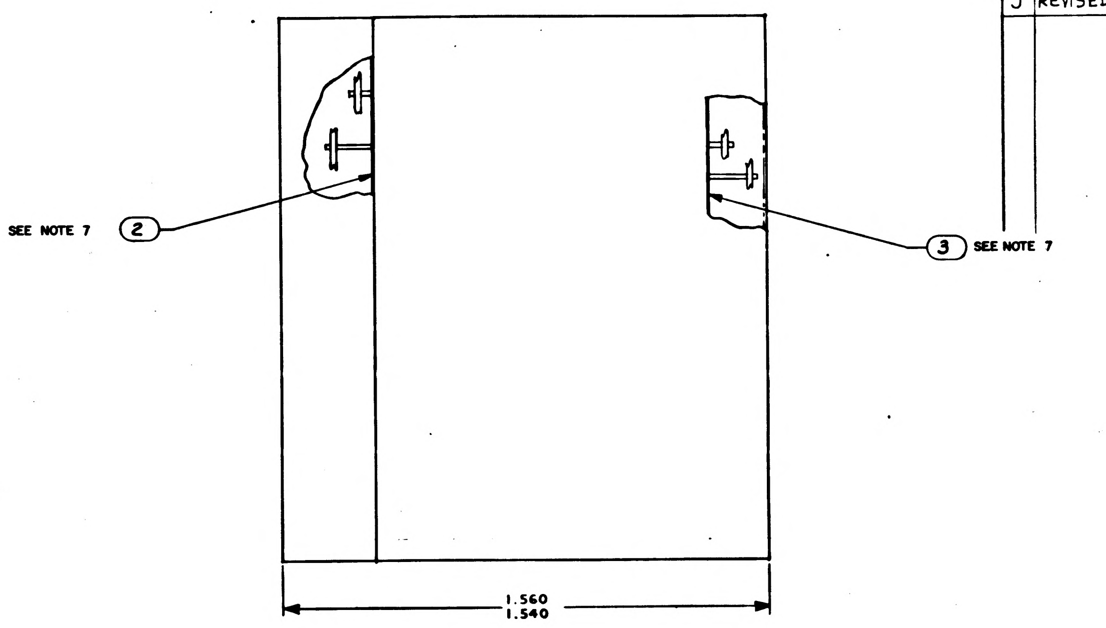
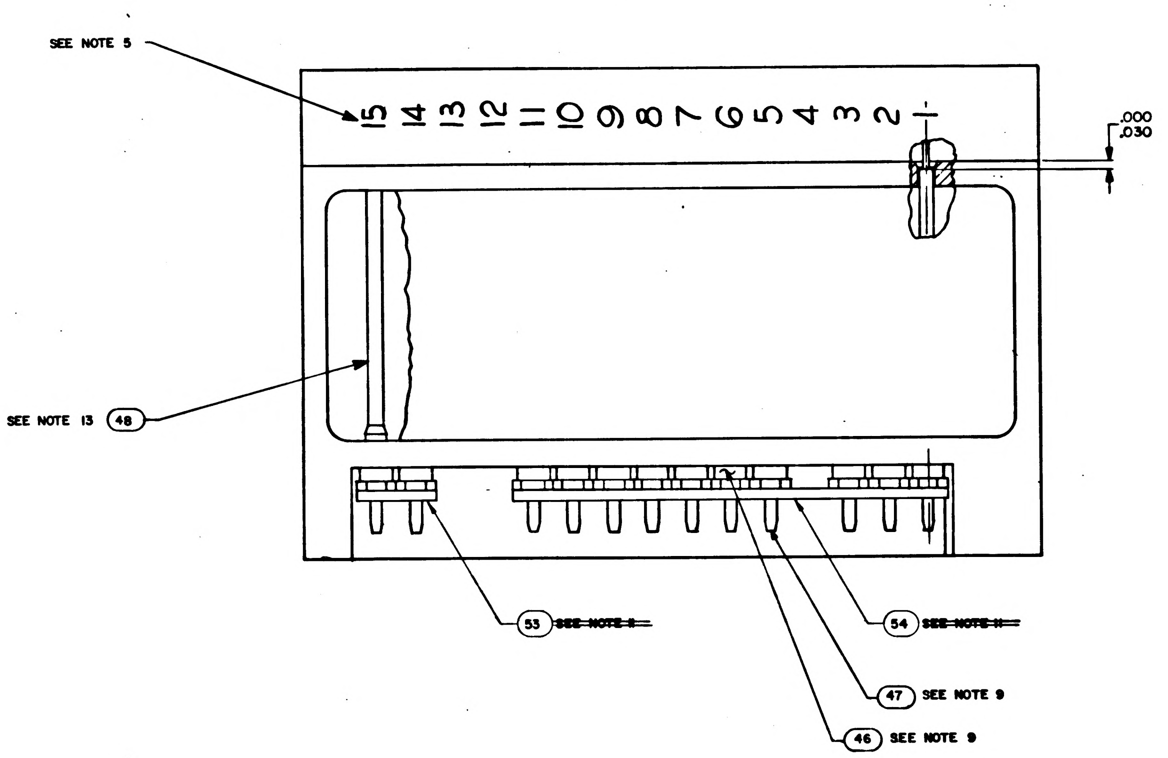
R6 24
C12 29
CR15 38
R32 16
C9 30
C8 30
R33 16
C7 35
R7 12
C10 35
CR7 38
51 Q2 40
R13 24
C3 26
CR12 38
R31 18
R22 9
Q6 40 51
CR14 38
R14 14
C2 32
C5 33
CR5 38
R10 10
R23 4
CR4 38
C4 31
R9 7
CR13 38
C1 28
L1 43
R5 7
R18 10
CR3 55
R8 25
R20 9
R11 6
R19 8
R25 11
R4 20
C6 34
R28 14
CR1 38
R17 5
T1 39
R16 13
R1 19
R15 11
C11 27
R2 50
R24 15
R26 11
R35 17
CR6 38
R3 22
Q7 41
Q5 40 51
58 SEE NOTES 13 & 15
CR2 37
R29 21
CR10 38
R21 12
R27 14
R30 21
CR11 38
R34 18
CR8 38
CR9 38
FT1
FT2
FT3
FT7
FT8
FT9
FT10
FT11
FT12
FT14


SEE NOTE 7 (2)
(3) SEE NOTE 7
1.560
1.540


SEE NOTE 5
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.000
.030
SEE NOTE 13 (48)
(53) ~~SEE NOTE 11~~
(54) ~~SEE NOTE 11~~
(47) SEE NOTE 9
(46) SEE NOTE 9

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 17335	MAR 65	
B	REVISED PER TDRR 17610	24 MAR 65	H.T.O. C7P
C	REVISED PER TDRR 18518	26 APR 65	RJJ AJ
D	REVISED PER TDRR		H.T.C.
E	REVISED PER TDRR 194	JUL	RJJ
F	REVISED PER TDRR 195		
G	REVISED PER TDRR 2014	JUN	
H	REVISION STATUS CHANGE		AU
J	REVISED PER TDRR 2385	JAN	

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT NAS9-4??

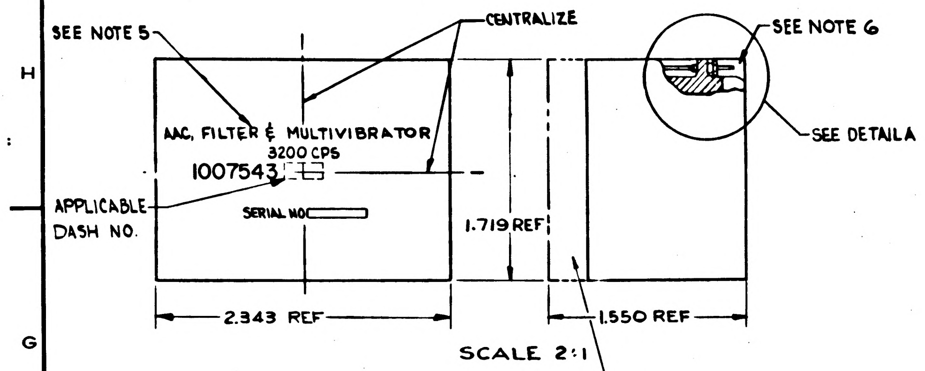
DRAWN S. Agne DATE 17 AUG 64
CHECKED R. Udowich 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL

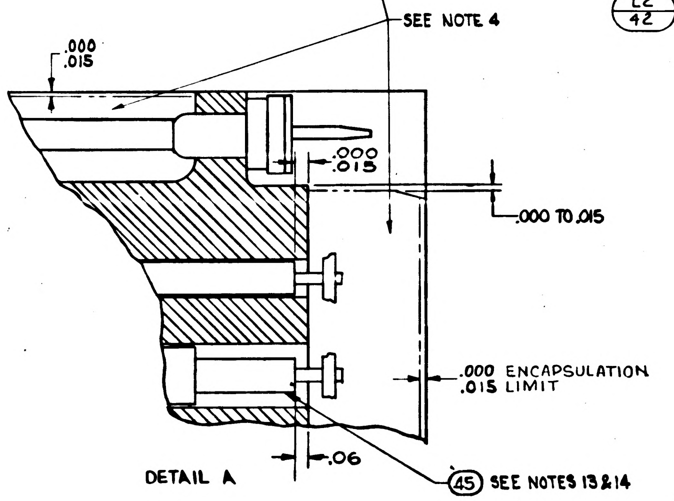
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AAC FILTER AND MULTIVIBRATOR
3200 CPS ASSEMBLY

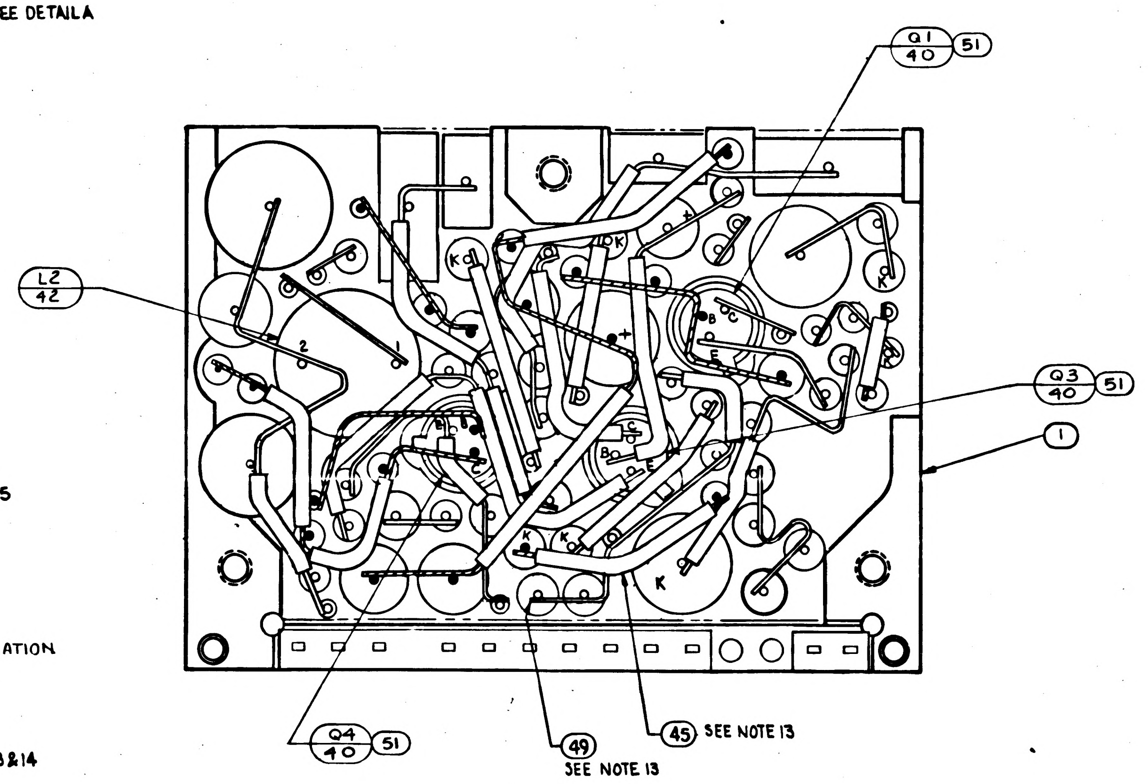
CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1007543
SCALE
WT
SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A	-	REVISED PER TDRR 17339		13 MAR 65	
B		REVISED PER TDRR 17610		24 MAR 65	HTO
C		REVISED PER TDRR 18518		26 APR 65	RJJ
D		REVISED PER TDRR 19392		2 JUN 65	HTO
E		REVISED PER TDRR 19437		3 JUN 65	RJJ
F		REVISED PER TDRR 19509		5 JUN 65	
G		REVISED PER TDRR 20143		10 JUN 65	DRO
H		REVISED PER TDRR 22963		20 OCT 65	JWP
J		REVISED PER TDRR 23888		16 NOV 65	JWP
K		REVISED PER TDRR 26397		23 FEB 66	RP





DETAIL A



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009, METHOD J.
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
4. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
5. MARK PIN NUMBER .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
7. ON ITEMS 2 AND 3:
   - A. BROKEN PATHS INDICATE INSULATION SLEEVING,
   - B. K INDICATES CATHODE SIDE OF DIODE,
   - C. FT( ) INDICATES FEED THROUGH,
   - D. PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   - E. C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   - F. B INDICATES BASE LEAD OF TRANSISTOR,
   - G. E INDICATES EMITTER LEAD OF TRANSISTOR,
   - H. $C_{()}$ INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR,
   - I. $B_{()}$ INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR,
   - J. $E_{()}$ INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR,
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. ASSEMBLE PER ND-1002136
10. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. ~~BOND ITEM 53 AND ITEM 54 TO ITEM 46 PER ND1002237.~~
12. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007043. PART TO BE SELECTED FROM CHART
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR R5 THRU R28, R32, R33, AND CR3
15. TYPICAL ~~SLEEVING AND~~ WIRE FOR FT1 THRU FT14
16. PROCURE PER PS1007043.
17. ~~BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
18. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

TABLE C

SELECTION CHART	
PART NUMBER	VALUE
1010410-2	240 PF
-3	270 PF
-4	300 PF
-5	330 PF
-6	360 PF
-7	390 PF
-8	430 PF
-9	470 PF
-10	510 PF
-11	560 PF
-12	620 PF
-13	680 PF
-14	750 PF
-15	820 PF
-16	910 PF
1010410-17	1000 PF

TABLE B

SELECTION CHART	
PART NUMBER	VALUE
1010264-21	.047UF
-22	.056UF
-23	.068UF
-24	.082UF
1010264-25	.100UF

~~TABLE I~~

~~CONFIGURATION~~	~~BOND BETWEEN WAFER AND HEATSINK~~	~~TOP OF WAFER~~	~~HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE~~
~~WAFER & FLAT HEATSINK~~	~~100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~WAFER AND ADJACENT VERTICAL HEATSINK SURFACE~~	~~CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~HEATSINK FOAM CONTACT SURFACE PERIMETER~~	~~N/A~~	~~N/A~~	~~.25 MIN WIDTH OR TOTAL AVAILABLE ON 80% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE~~

20. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
21. MOISTUREPROOF PER ND1002292 AS REQUIRED BY ITEM NO. (59) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.

TABLE A

SELECTION CHART	
PART NUMBER	VALUE
1010364-673	158.0K
-635	100.0K
-609	73.2 K
-593	60.4 K
-577	49.9 K
-565	43.2 K
-553	37.4 K
-543	33.2 K
-533	29.4 K
-525	26.7 K
-517	24.3 K
-509	22.1 K
-505	21.0 K
-501	20.0 K
-495	18.7 K
-491	17.8 K
-487	16.9 K
-483	16.2 K
-479	15.4 K
-475	14.7 K
-469	13.7 K
-465	13.0 K
-461	12.4 K
-457	11.8 K
-455	11.5 K
-451	11.0 K
-447	10.5 K
-443	10.0 K
-439	9.53 K
-435	9.09 K
-433	8.37 K
-431	8.66 K
-429	8.45 K
-427	8.25 K
-425	8.06 K
-423	7.87 K
-421	7.68 K
-419	7.50 K
-417	7.32 K
-415	7.15 K
-413	6.98 K
-411	6.81 K
-409	6.65 K
-407	6.49 K
-405	6.34 K
-403	6.19 K
-401	6.04 K
-399	5.90 K
1010364-397	5.76 K

031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
AR	—	—		59	SEE NOTE 21	MOISTUREPROOFING
AR	AR	AR		58	1010848-2	WIRE, ELECTRICAL NICKEL
X	X	-		57	PS 1007043 TYPE II	PROCUREMENT SPEC.
-	-	X		56	PS 1007043 TYPE I	PROCUREMENT SPEC.
X	X	X		REF	1010047	SCHEMATIC, ELECTRICAL
1	1	1		55	1010830-11	DIODE
1	1	1		54	1008540-11	GASKET, CONNECTOR-MINIATURE
1	1	1		53	1008540-2	GASKET, CONNECTOR-MINIATURE
	~~AR~~	~~AR~~		~~52~~	~~1006776-22~~	~~INSULATION SLEEVING, ELEC.~~
6	6	6		51	1008025-1	BUSHING, INSULATOR
1	1	1		50	1010364-559	RESISTOR, FIXED
AR	AR	AR		49	1006757-1	WIRE, NICKEL RIBBON .010 × .020
AR	AR	AR		48	1006776-20	SLEEVING, ELECT INSULATION
12	12	12		47	1006782-5	CONTACT, WRAPOST-MALE-MINIATURE
12	12	12		46	1006775	INSULATOR, WRAPOST-MALE MINIATURE
AR	AR	AR		45	1006776-21	SLEEVING, ELECT INSULATION
	~~AR~~	~~AR~~		~~44~~	~~1006757-8~~	~~WIRE FEED THROUGH~~
1	1	1		43	1010309-8	REACTOR
1	1	1		42	1010309-3	REACTOR
1	1	1		41	1010431	TRANSISTOR
6	6	6		40	1010397-1	TRANSISTOR
1	1	1		39	1010291-2	TRANSFORMER
13	13	13		38	1010385	SEMICONDUCTOR DEVICE, DIODE
1	1	1		37	1010346-1	SEMICONDUCTOR DEVICE, DIODE
		~~1~~		36	~~1010286-11~~	~~SEMICONDUCTOR DEVICE, DIODE~~
2	2	2		35	SEE TABLE C	CAPACITOR-FIXED
1	1	1		34	SEE TABLE B	
1	1	1		33	1010264-29	
1	1	1		32	1010264-21	
1	1	1		31	1010264-17	
2	2	2		30	1006793-007	
1	1	1		29	1006755-81	
1	1	1		28	-69	
1	1	1		27	-64	
1	1	1		26	1006755-31	CAPACITOR - FIXED
1	1	1		25	1010369-140	RESISTOR - FIXED
2	2	2		24	1010369-95	
1	1	1		23	1010369-88	
1	1	1		22	SEE TABLE A	
2	2	2		21	1010364-693	
1	1	1		20	1010364-403	
1	1	1		19	1010364-251	
2	2	2		18	1010363-351	
1	1	1		17	1010278-56	
2	2	2		16	1006750-76	
1	1	1		15	-73	
3	3	3		14	-72	
1	1	1		13	-62	
2	2	2		12	-60	
3	3	3		11	-56	
2	2	2		10	-52	
2	2	2		9	-48	
1	1	1		8	-44	
2	2	2		7	-42	
1	1	1		6	-40	
1	1	1		5	-32	
1	1	1		4	1006750-19	RESISTOR - FIXED
1	1	1		3	1015728	INSULATOR, LOWER
1	1	1		2	1015727	INSULATOR, UPPER
1	1	1		1	1015726	HEATSINK

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - .XX ± .02 + -
- - .XXX ± .005 - -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN S. Agne DATE 17 AUG 64
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AAC FILTER AND MULTIVIBRATOR
3200 CPS
ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1007543
SCALE 5:1
SHEET OF 2

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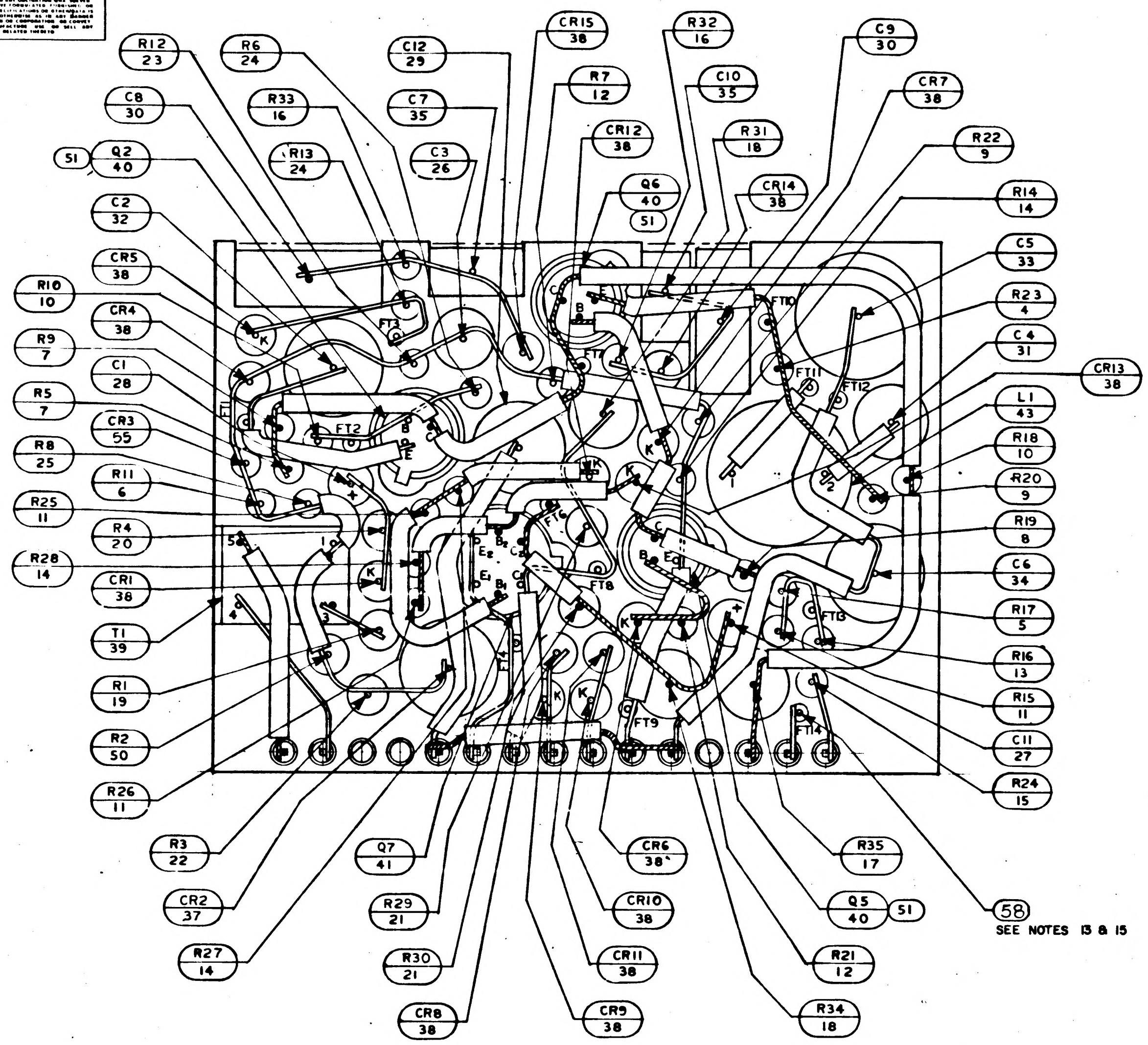
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 17339	12 MAR 65	EM
B	REVISED PER TDRR 17610	24 MAR 65	HTO CHP
C	REVISED PER TDRR 18518	26 APR 65	RJJ AU
D	REVISED PER TDRR 19392	2 JUN 65	HTO
E	REVISED PER TDRR 19437	3 JUN 65	RJJ EF
F	REVISED PER TDRR 19509	5 JUN 65	
G	REVISED PER TDRR 20143	19 JUN 65	OKD
H	REVISION STATUS CHANGED	12 OCT 65	JWP AU
J	REVISED PER TDRR 23888	9/65	JWP
K	REVISION STATUS CHANGED	23 FEB 66	RP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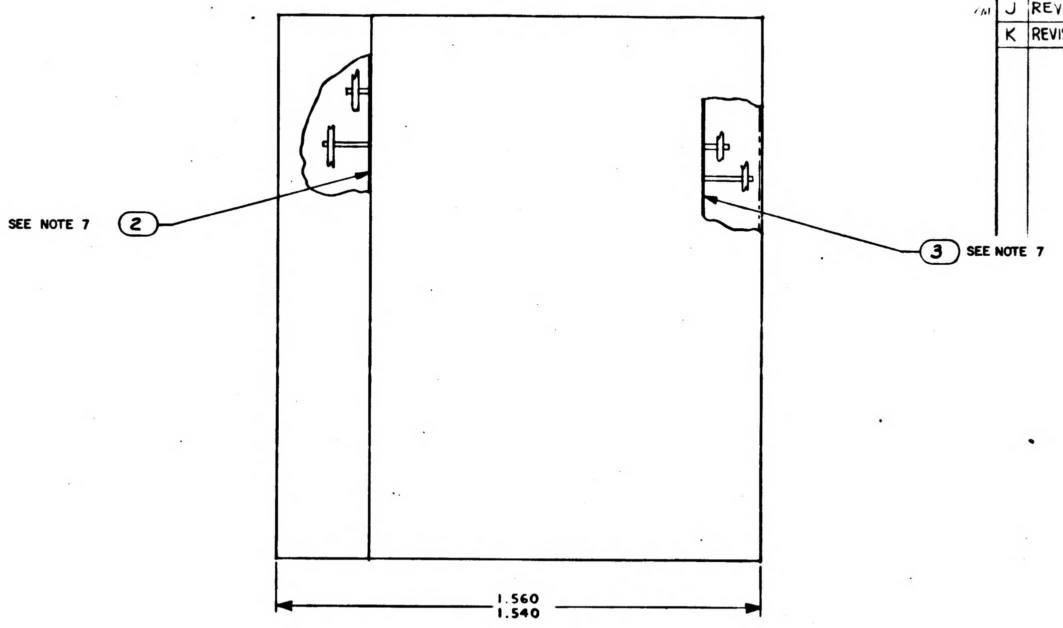
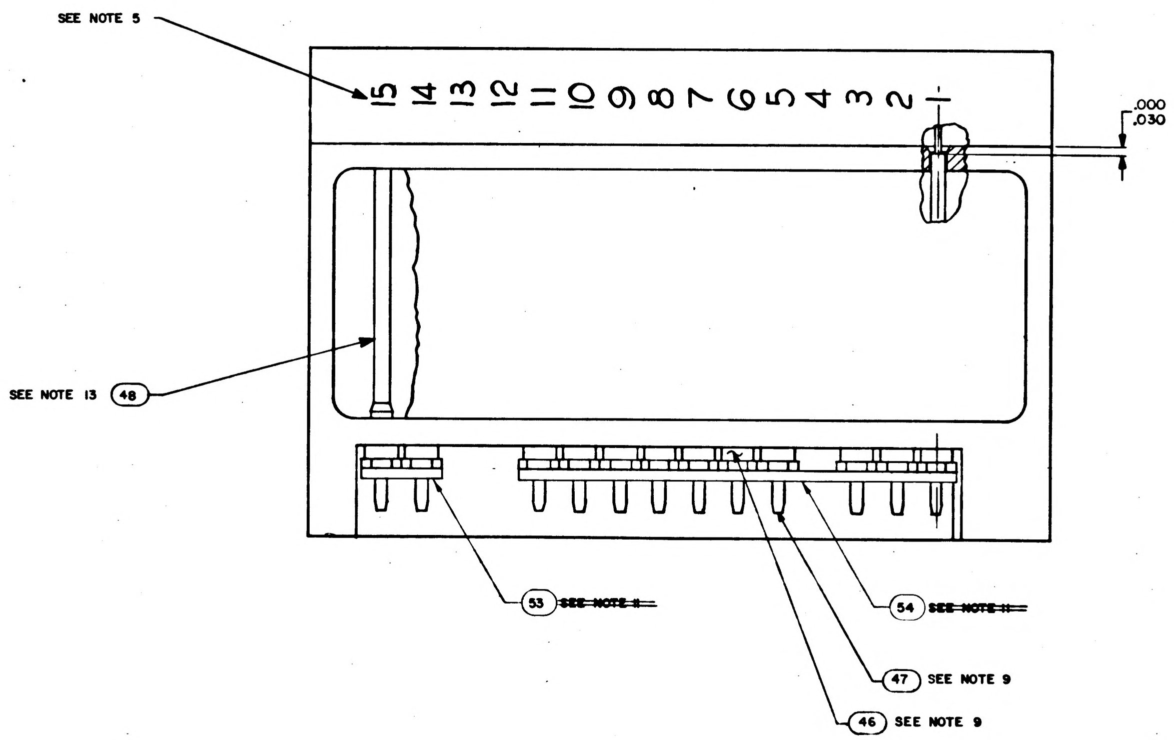
R6 24
C12 29
CR15 38
R32 16
C9 30
C8 30
R33 16
C7 35
R7 12
C10 35
CR7 38
R13 24
C3 26
CR12 38
R31 18
R22 9
51
Q2 40
Q6 40
51
CR14 38
R14 14
C2 32
C5 33
CR5 38
R23 4
R10 10
CR4 38
C4 31
R9 7
CR13 38
C1 28
L1 43
R5 7
CR3 55
R18 10
R8 25
R11 6
R20 9
R25 11
R4 20
R19 8
R28 14
C6 34
CR1 38
R17 5
T1 39
R16 13
R1 19
R15 11
R2 50
C11 27
R26 11
R24 15
R3 22
Q7 41
CR6 38
R35 17
CR2 37
R29 21
CR10 38
Q5 40
51
58
SEE NOTES 13 & 15
R27 14
R30 21
CR11 38
R21 12
CR8 38
CR9 38
R34 18
FT1
FT2
FT3
FT7
FT8
FT9
FT10
FT11
FT12
FT13
FT14


SEE NOTE 7
2
3
SEE NOTE 7
1.560
1.540


SEE NOTE 5
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
.000
.030
SEE NOTE 13
48
53 ~~SEE NOTE 11~~
54 ~~SEE NOTE 11~~
47 SEE NOTE 9
46 SEE NOTE 9

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
CONTRACT NAS9-497
DRAWN S. Agne DATE 17 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL

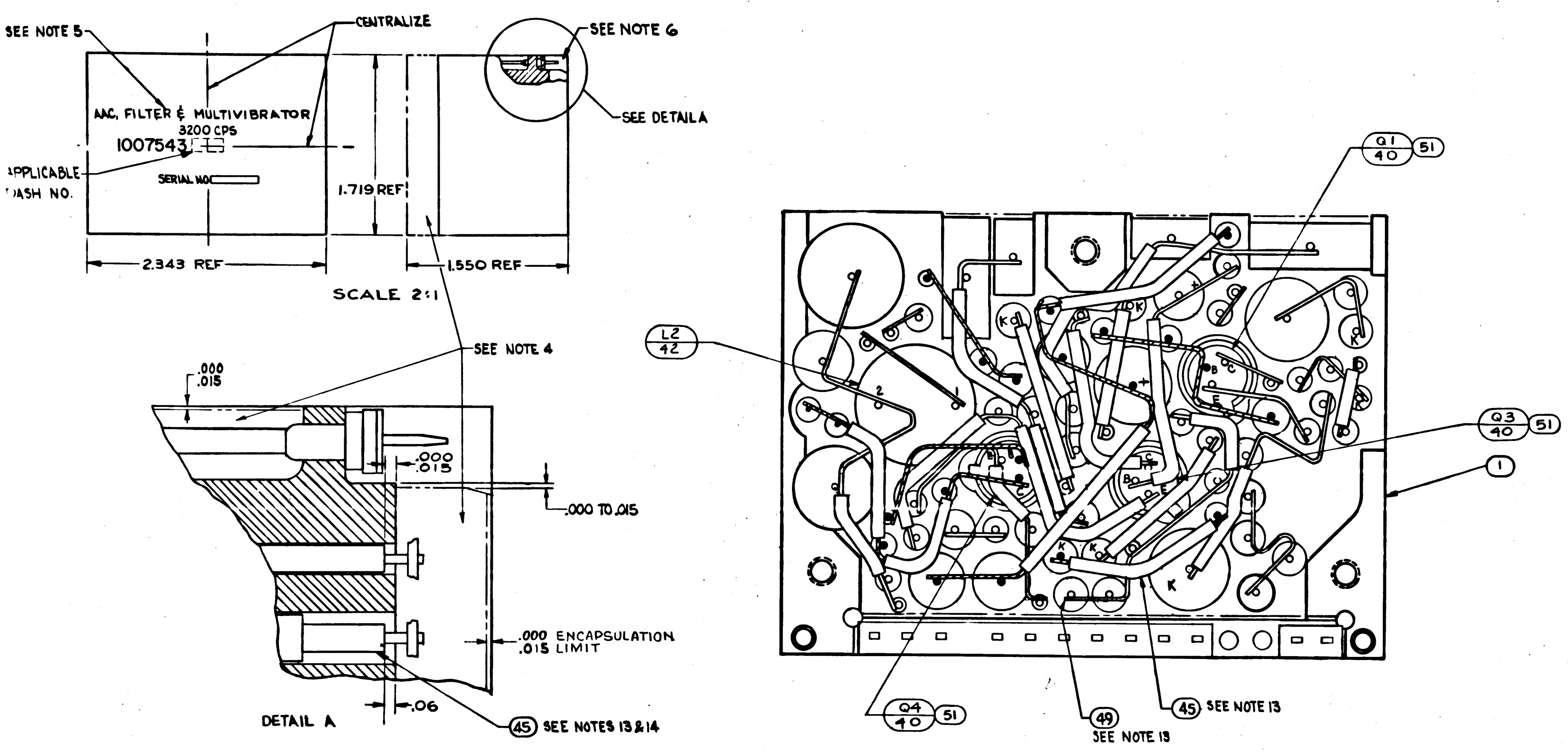
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AAC FILTER AND MULTIVIBRATOR
3200 CPS ASSEMBLY

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1007543
SCALE ——
WT
SHEET 2 OF 2

1007543 K

SYM	ZONE	DESCRIPTION	DATE	APPD.
A	-	REVISED PER TDRR 17339	3 MAR 65	EN
B		REVISED PER TDRR 17610	24 MAR 65	HTO
C		REVISED PER TDRR 18518	26 APR 65	RJJ
D		REVISED PER TDRR 19392	2 JUN 65	HTO
E		REVISED PER TDRR 19437	3 JUN 65	R J
F		REVISED PER TDRR 19509	JUN 65	
G		REVISED PER TDRR 20143	65	
H		REVISED PER TDRR 22963	OCT 65	
J		REVISED PER TDRR 23388	65	
K		REVISED PER TDRR 26397	23 FEB 66	RP
L		REVISED PER TDRR 26375	28 FEB 66	JIM P



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009, METHOD J.
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005
4. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
5. MARK PIN NUMBER .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
7. ON ITEMS 2 AND 3:
   - A. BROKEN PATHS INDICATE INSULATION SLEEVING,
   - B. K INDICATES CATHODE SIDE OF DIODE,
   - C. FT( ) INDICATES FEED THROUGH,
   - D. PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
   - E. C INDICATES COLLECTOR LEAD OF TRANSISTOR,
   - F. B INDICATES BASE LEAD OF TRANSISTOR,
   - G. E INDICATES EMITTER LEAD OF TRANSISTOR,
   - H. $C_{()}$ INDICATES COLLECTOR LEAD OF MULTI STAGE TRANSISTOR,
   - I. $B_{()}$ INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR,
   - J. $E_{()}$ INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR,
8. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
9. ASSEMBLE PER ND-1002136
10. UNLESS OTHERWISE SPECIFIED, WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
11. ~~BOND ITEM 53 AND ITEM 54 TO ITEM 46 PER ND1002237.~~
12. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007043. PART TO BE SELECTED FROM CHART
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR R5 THRU R28, R32, R33, AND CR3
15. TYPICAL ~~SLEEVING AND~~ WIRE FOR FT1 THRU FT14
16. PROCURE PER PS1007043.
17. ~~BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
18. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MAT'L BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 80% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

20. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
21. MOISTUREPROOF PER ND 1002292 AS REQUIRED BY ITEM NO. (59) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.

TABLE C

SELECTION CHART

PART NUMBER	VALUE
1010410-2	240 PF
-3	270 PF
-4	300 PF
-5	330 PF
-6	360 PF
-7	390 PF
-8	430 PF
-9	470 PF
-10	510 PF
-11	560 PF
-12	620 PF
-13	680 PF
-14	750 PF
-15	820 PF
-16	910 PF
1010410-17	1000 PF

TABLE B

SELECTION CHART

PART NUMBER	VALUE
1010264-21	.047UF
-22	.056UF
-23	.068UF
-24	.082UF
1010264-25	.100UF

TABLE A

SELECTION CHART

PART NUMBER	VALUE
1010364-673	158.0K
-635	100.0K
-609	73.2 K
-593	60.4 K
-577	49.9 K
-565	43.2 K
-553	37.4 K
-543	33.2 K
-533	29.4 K
-525	26.7 K
-517	24.3 K
-509	22.1 K
-505	21.0 K
-501	20.0 K
-495	18.7 K
-491	17.8 K
-487	16.9 K
-483	16.2 K
-479	15.4 K
-475	14.7 K
-469	13.7 K
-465	13.0 K
-461	12.4 K
-457	11.8 K
-455	11.5 K
-451	11.0 K
-447	10.5 K
-443	10.0 K
-439	9.53 K
-435	9.09 K
-433	8.37 K
-431	8.66 K
-429	8.45 K
-427	8.25 K
-425	8.06 K
-423	7.87 K
-421	7.68 K
-419	7.50 K
-417	7.32 K
-415	7.15 K
-413	6.98 K
-411	6.81 K
-409	6.65 K
-407	6.49 K
-405	6.34 K
-403	6.19 K
-401	6.04 K
-399	5.90 K
1010364-397	5.76 K

C41	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
AR	AR	—	—		59	SEE NOTE 21	MOISTUREPROOFING
AR	AR	AR	AR		58	1010848-2	WIRE, ELECTRICAL-NICKEL
-	X	X	-		57	PS 1007043 TYPE II	PROCUREMENT SPEC.
X	-	-	X		56	PS 1007043 TYPE I	PROCUREMENT SPEC.
X	X	X	X		REF	1010047	SCHEMATIC, ELECTRICAL
1	1	1	1		55	1010830-11	DIODE
1	1	1	1		54	1008540-11	GASKET, CONNECTOR-MINIATURE
1	1	1	1		53	1008540-2	GASKET, CONNECTOR-MINIATURE
		~~AR~~	~~AR~~		~~52~~	~~1006776-22~~	~~INSULATION SLEEVING, ELEC.~~
6	6	6	6		51	1008025-1	BUSHING, INSULATOR
1	1	1	1		50	1010364-559	RESISTOR, FIXED
AR	AR	AR	AR		49	1006757-1	WIRE, NICKEL RIBBON .010 x .020
AR	AR	AR	AR		48	1006776-20	SLEEVING, ELECT INSULATION
12	12	12	12		47	1006782-5	CONTACT, WRAPOST-MALE-MINIATURE
12	12	12	12		46	1006775	INSULATOR, WRAPOST-MALE MINIATURE
AR	AR	AR	AR		45	1006776-21	SLEEVING, ELECT INSULATION
		~~AR~~	~~AR~~		~~44~~	~~1006757-8~~	~~WIRE FEED THROUGH~~
1	1	1	1		43	1010309-8	REACTOR
1	1	1	1		42	1010309-3	REACTOR
1	1	1	1		41	1010431	TRANSISTOR
6	6	6	6		40	1010397-1	TRANSISTOR
1	1	1	1		39	1010291-2	TRANSFORMER
13	13	13	13		38	1010385	SEMICONDUCTOR DEVICE, DIODE
1	1	1	1		37	1010346-1	SEMICONDUCTOR DEVICE, DIODE
			~~1~~		36	~~1010286-11~~	~~SEMICONDUCTOR DEVICE, DIODE~~
2	2	2	2		35	SEE TABLE C	CAPACITOR-FIXED
1	1	1	1		34	SEE TABLE B	
1	1	1	1		33	1010264-29	
1	1	1	1		32	1010264-21	
1	1	1	1		31	1010264-17	
2	2	2	2		30	1006793-007	
1	1	1	1		29	1006755-81	
1	1	1	1		28	-69	
1	1	1	1		27	-64	
1	1	1	1		26	1006755-31	CAPACITOR-FIXED
1	1	1	1		25	1010369-140	RESISTOR-FIXED
2	2	2	2		24	1010369-95	
1	1	1	1		23	1010369-88	
1	1	1	1		22	SEE TABLE A	
2	2	2	2		21	1010364-693	
1	1	1	1		20	1010364-403	
1	1	1	1		19	1010364-251	
2	2	2	2		18	1010363-351	
1	1	1	1		17	1010278-56	
2	2	2	2		16	1006750-76	
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3	3	3	3		14	-72	
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3	3	3	3		11	-56	
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2	2	2	2		9	-48	
1	1	1	1		8	-44	
2	2	2	2		7	-42	
1	1	1	1		6	-40	
1	1	1	1		5	-32	
1	1	1	1		4	1006750-19	RESISTOR - FIXED
1	1	1	1		3	1015728	INSULATOR, LOWER
1	1	1	1		2	1015727	INSULATOR, UPPER
1	1	1	1		1	1015726	HEATSINK

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS .XX ±.02 .XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

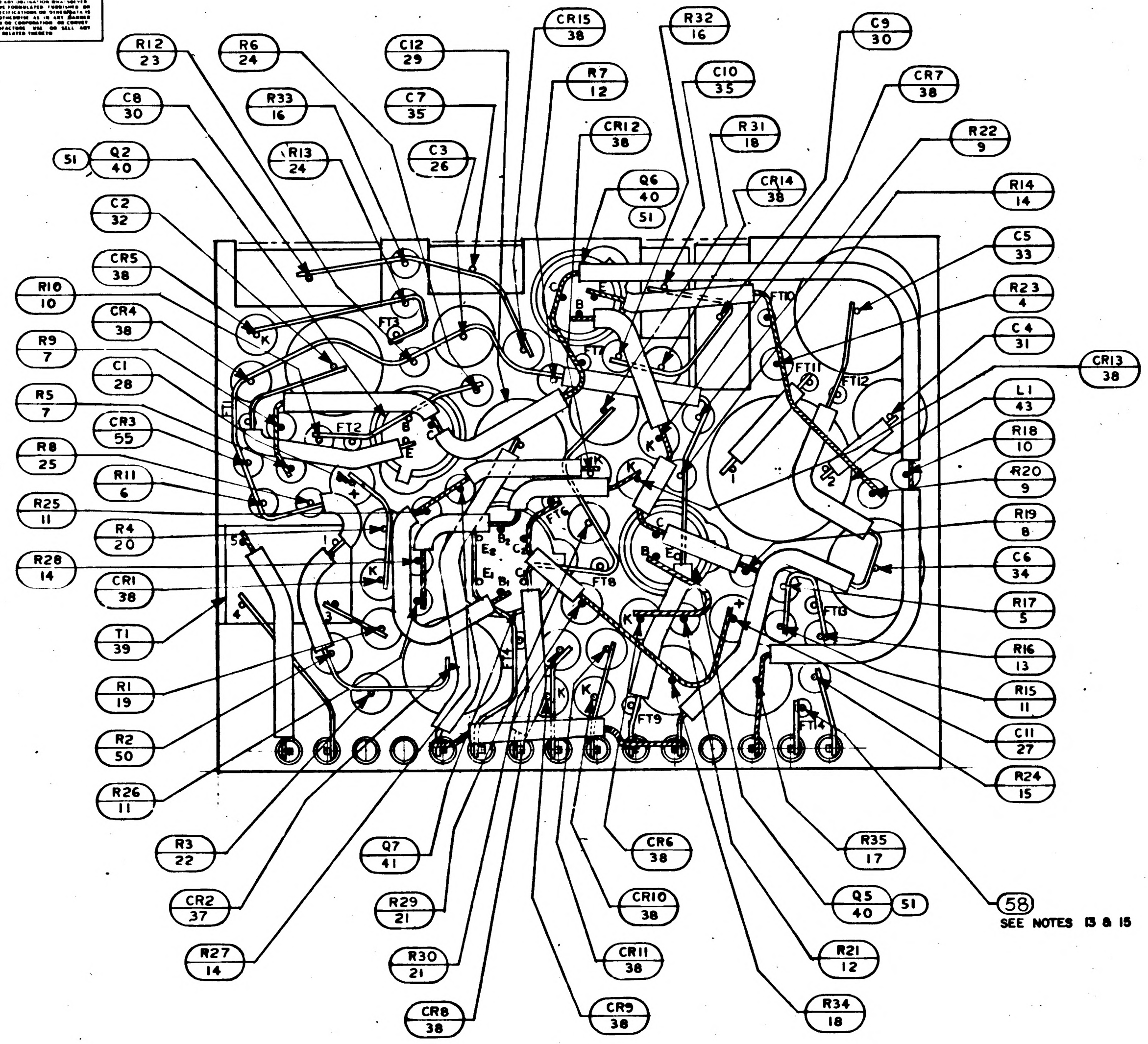
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN S. Ayne DATE 17 AUG 64
CHECKED A. Aldrich 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AAC FILTER AND MULTIVIBRATOR
3200 CPS
ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1007543
SCALE 5:1
SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.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R6 24
C12 29
CR15 38
R32 16
C9 30
C8 30
R33 16
C7 35
R7 12
C10 35
CR7 38
51
Q2 40
R13 24
C3 26
CR12 38
R31 18
R22 9
Q6 40 51
CR14 38
R14 14
C2 32
C5 33
CR5 38
R23 4
R10 10
CR4 38
C4 31
R9 7
CR13 38
C1 28
L1 43
R5 7
CR3 55
R18 10
R8 25
R20 9
R11 6
R19 8
R25 11
R4 20
C6 34
R28 14
CR1 38
R17 5
T1 39
R16 13
R1 19
R15 11
R2 50
C11 27
R26 11
R24 15
R3 22
Q7 41
CR6 38
R35 17
CR2 37
R29 21
CR10 38
Q5 40
51
58
SEE NOTES 13 & 15
R27 14
R30 21
CR11 38
R21 12
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FT2
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FT8
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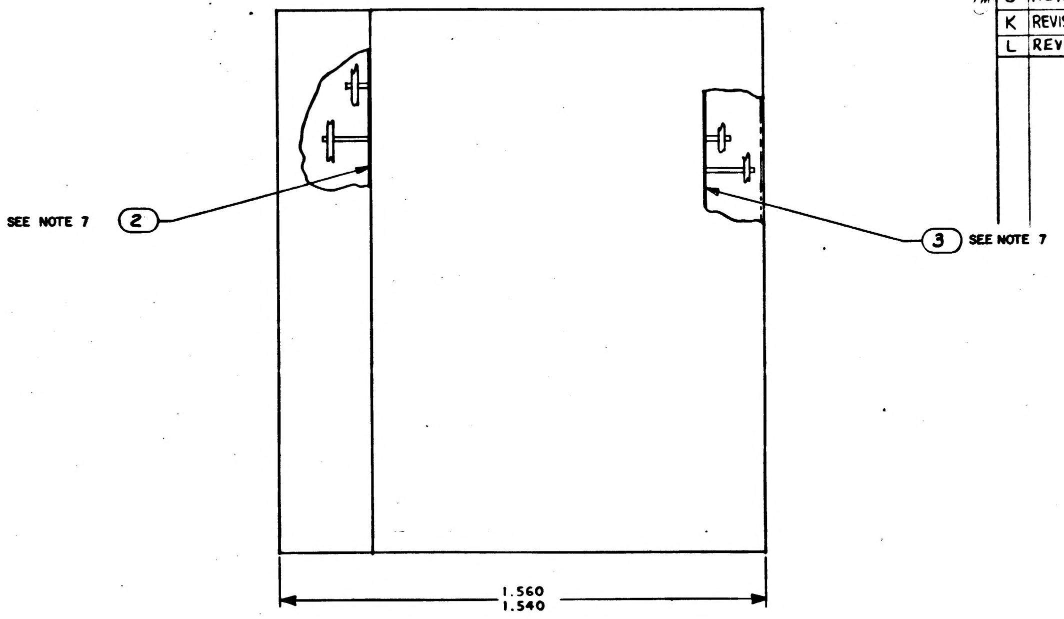
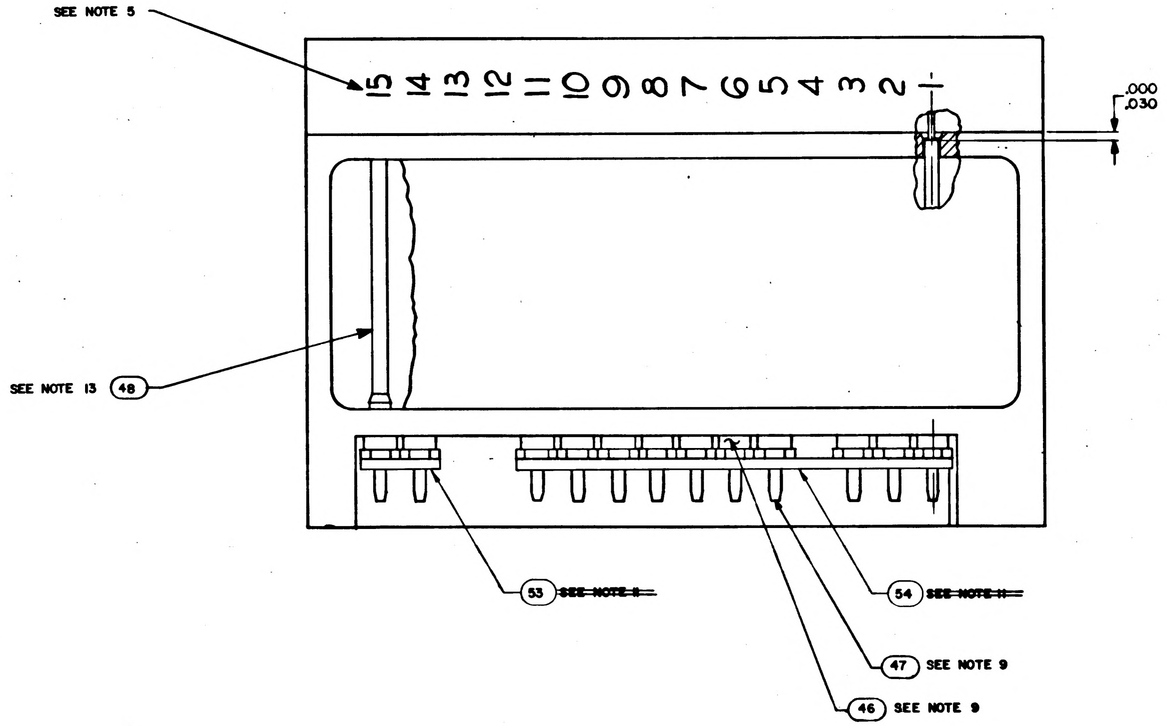
FT10
FT11
FT12
FT13
FT14


SEE NOTE 7
2
3
SEE NOTE 7
1.560
1.540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.000
.030
SEE NOTE 13
48
53
~~SEE NOTE 8~~
54
~~SEE NOTE 11~~
47 SEE NOTE 9
46 SEE NOTE 9

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 17534	MAR 65	
B	REVISED PER TDRR 17610	24 MAR 65	HTD CFP
C	REVISED PER TDRR 18518	26 APR 65	RJJ AJ
D	REVISED PER TDRR 193[illegible]	JUL 65	HTC
E	REVISED PER TDRR 19487	3 JUN 65	RJJ
F	REVISED PER TDRR 19509	JUN 65	
G	REVISED PER TDRR 20143	3 JUN 65	DWD
H	REVISION STATUS CHANGED		AU
J	REVISED PER TDRR 20[illegible]8	JUN	
K	REVISION STATUS CHANGED	23 FEB 66	RP
L	REVISION STATUS CHANGED	28 FEB 66	JMP

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

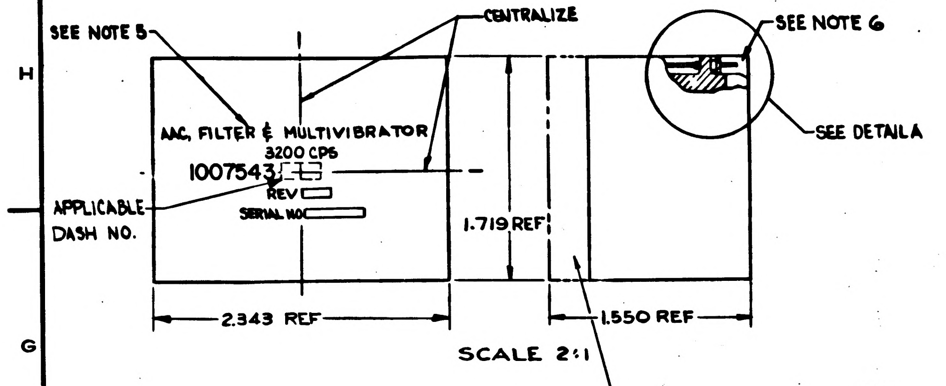
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
CONTRACT NAS9-497
DRAWN S. Agne DATE 17 AUG 64
CHECKED R. Udonich 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

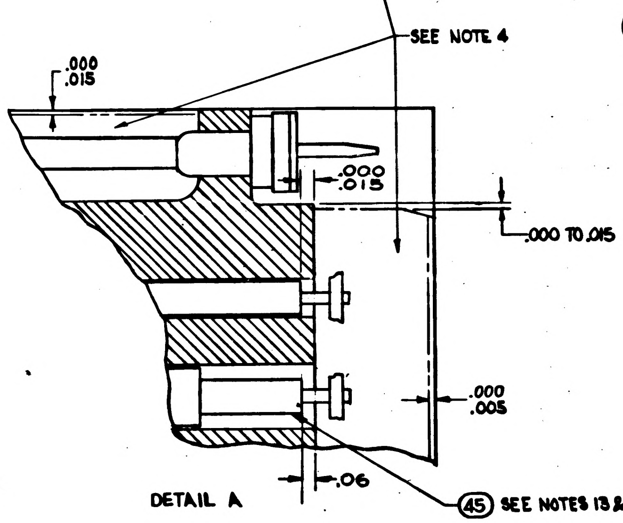
AAC FILTER AND MULTIVIBRATOR 3200 CPS ASSEMBLY

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1007543
SCALE ——
WT
SHEET 2 OF 2

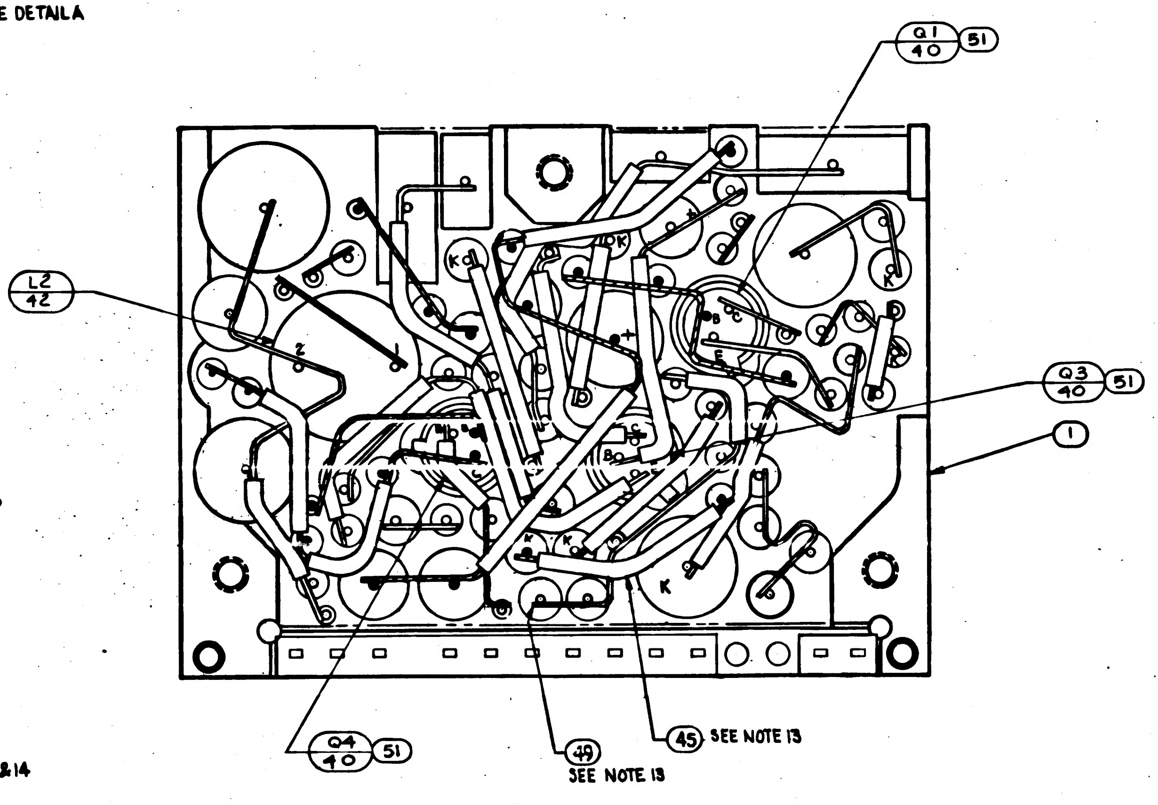
REVISIONS 13233				
SYM	ZONE	DESCRIPTION	DATE	APPD.
		CHG NO.		



SCALE 2:1



DETAIL A



NOTES:

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5. MARK PIN NUMBER .08 HIGH (WHITE) AND ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
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11. BOND ITEM 53 AND ITEM 54 TO ITEM 46 PER ND1002237.
12. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007043. PART TO BE SELECTED FROM CHART
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR R5 THRU R28, R32, R33, AND CR3
15. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT14
16. PROCURE PER PS1007043.

TABLE C

SELECTION CHART	
PART NUMBER	VALUE
1010410-2	240 PF
-3	270 PF
-4	300 PF
-5	330 PF
-6	360 PF
-7	390 PF
-8	430 PF
-9	470 PF
-10	510 PF
-11	560 PF
-12	620 PF
-13	680 PF
-14	750 PF
-15	820 PF
-16	910 PF
1010410-17	1000 PF

TABLE B

SELECTION CHART	
PART NUMBER	VALUE
1010264-21	.047UF
-22	.056UF
-23	.068UF
-24	.082UF
1010264-25	.100UF

TABLE A

SELECTION CHART	
PART NUMBER	VALUE
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-577	49.9K
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-431	8.66K
-429	8.45K
-427	8.25K
-425	8.06K
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-421	7.68K
-419	7.50K
-417	7.32K
-415	7.15K
-413	6.98K
-411	6.81K
-409	6.65K
-407	6.49K
-405	6.34K
-403	6.19K
-401	6.04K
-399	5.90K
1010364-397	5.76K

			X		REF	1010047	SCHEMATIC, ELECTRICAL
			1		54	1008540-11	GASKET, CONNECTOR-MINIATURE
			1		53	1008540-2	GASKET, CONNECTOR-MINIATURE
			AR		52	1006776-22	INSULATION SLEEVING, ELEC.
			6		51	1008025-1	BUSHING, INSULATOR
			1		50	1010364-559	RESISTOR, FIXED
			AR		49	1006757-1	WIRE, NICKEL RIBBON .010 x .020
			AR		48	1006776-20	SLEEVING, ELECT INSULATION
			12		47	1006782-5	CONTACT, WRAPOST-MALE-MINIATURE
			12		46	1006775	INSULATOR, WRAPOST-MALE MINIATURE
			AR		45	1006776-21	SLEEVING, ELECT INSULATION
			AR		44	1006757-8	WIRE FEED THROUGH
			1		43	1010309-8	REACTOR
			1		42	1010309-3	REACTOR
			1		41	1010451	TRANSISTOR
			6		40	1010397-1	TRANSISTOR
			1		39	1010291-2	TRANSFORMER
			13		38	1010385	SEMICONDUCTOR DEVICE, DIODE
			1		37	1010346-1	SEMICONDUCTOR DEVICE, DIODE
			1		36	1010286-11	SEMICONDUCTOR DEVICE, DIODE
			2		35	SEE TABLE C	CAPACITOR-FIXED
			1		34	SEE TABLE B	
			1		33	1010264-29	
			1		32	1010264-21	
			1		31	1010264-17	
			2		30	1006793-007	
			1		29	1006755-81	
			1		28	-69	
			1		27	-64	
			1		26	1006755-31	CAPACITOR - FIXED
			1		25	1010369-140	RESISTOR-FIXED
			2		24	1010369-95	
			1		23	1010369-88	
			1		22	SEE TABLE A	
			2		21	1010364-693	
			1		20	1010364-403	
			1		19	1010364-251	
			2		18	1010363-351	
			1		17	1010278-56	
			2		16	1006750-76	
			1		15	-73	
			3		14	-72	
			1		13	-62	
			2		12	-60	
			3		11	-56	
			2		10	-52	
			2		9	-48	
			1		8	-44	
			2		7	-42	
			1		6	-40	
			1		5	-32	
			1		4	1006750-19	RESISTOR - FIXED
			1		3	1015728	INSULATOR, LOWER
			1		2	1015727	INSULATOR, UPPER
			1		1	1015726	HEATSINK
			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

1007571		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - .XX ±.02 + -
- - .XXX±.005 - -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN S. Ayres DATE 12 AUG 64
CHECKED R. Ulasich 27 AUG 64
APPROVAL Shewnyak EJS
APPROVAL D. R. Test 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

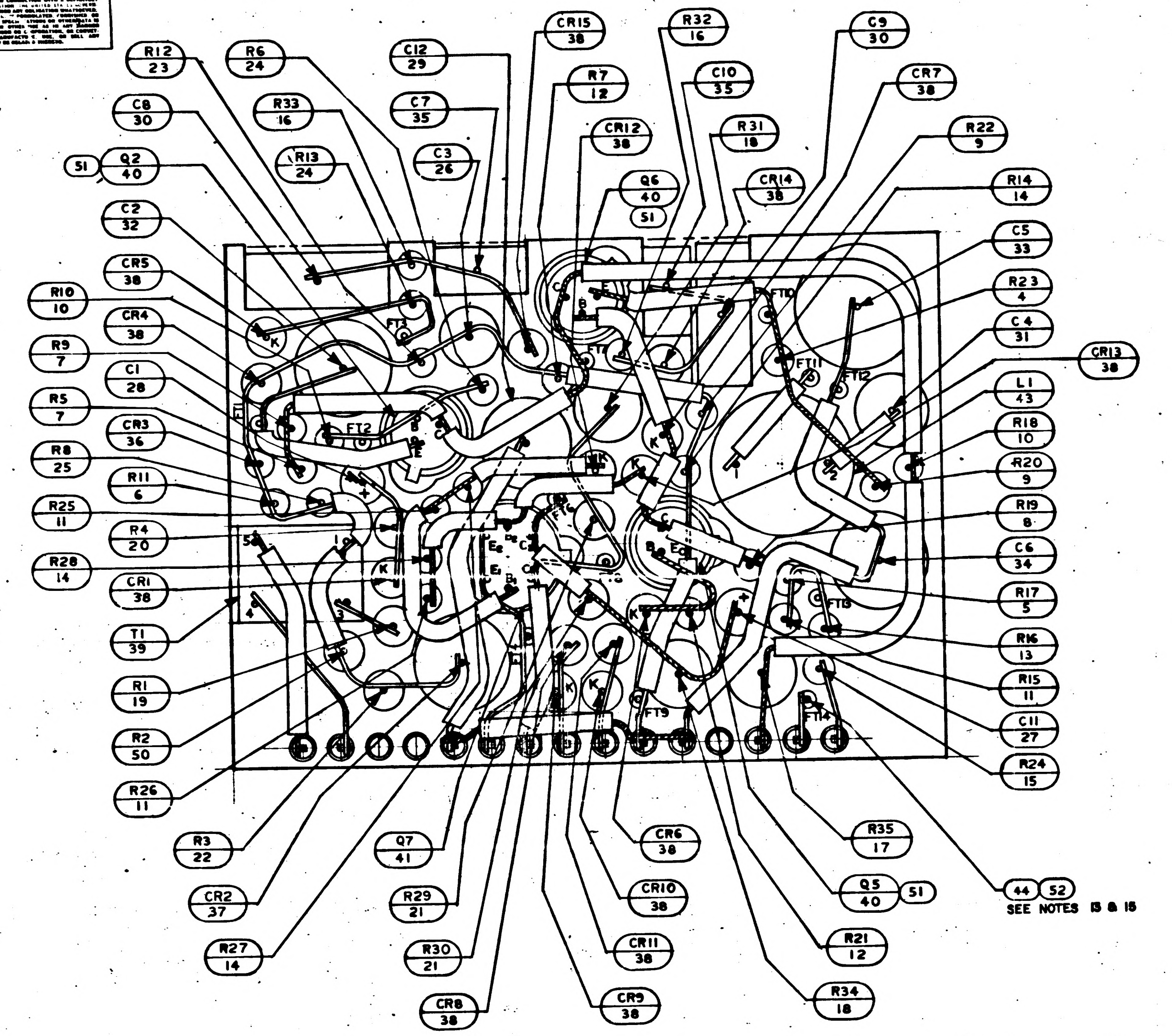
AAC FILTER AND MULTIVIBRATOR
3200 CPS
ASSEMBLY

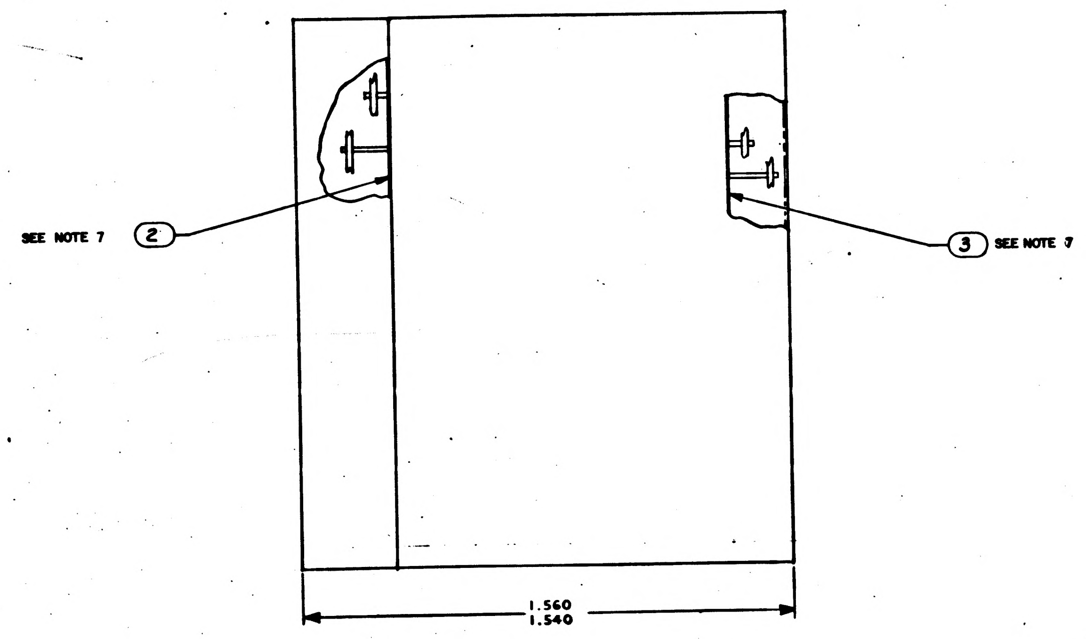
CODE IDENT NO.
SIZE E
1007543
SCALE 5:1
SHEET
OF 2

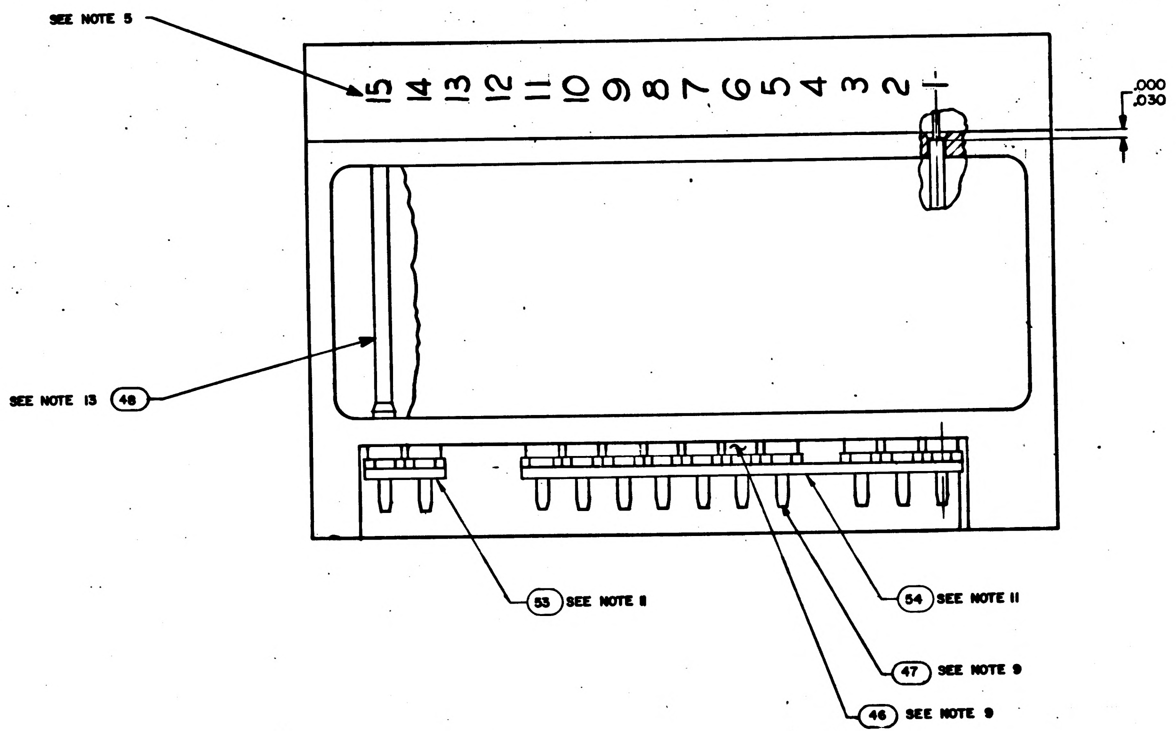
1007543

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 13233			
SYM	DESCRIPTION	DATE	APPROVAL


R12 23
R6 24
C12 29
CR15 38
R32 16
C9 30
R7 12
C10 35
CR7 38
C8 30
R33 16
C7 35
CR12 38
R31 18
R22 9
R13 24
C3 26
51 Q2 40
Q6 40 51
CR14 38
R14 14
C2 32
C5 33
R10 10
CR5 38
R23 4
CR4 38
C4 31
R9 7
CR13 38
C1 28
L1 43
R5 7
R18 10
CR3 36
R8 25
R20 9
R11 6
R19 8
R25 11
R4 20
C6 34
R28 14
CR1 38
R17 5
T1 39
R16 13
R1 19
R15 11
C11 27
R2 50
R24 15
R26 11
R35 17
R3 22
Q7 41
CR6 38
Q5 40 51
44 52 SEE NOTES 13 & 15
CR2 37
R29 21
CR10 38
R21 12
R27 14
R30 21
CR11 38
R34 18
CR8 38
CR9 38
FT1
FT2
FT7
FT10
FT11
FT12
FT8
FT9
FT14
S4
S3
K
E
B
C


SEE NOTE 7 2
3 SEE NOTE 7
1.560
1.540


SEE NOTE 5
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
.000
.030
SEE NOTE 13 48
53 SEE NOTE 8
54 SEE NOTE 11
47 SEE NOTE 9
46 SEE NOTE 9

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
CONTRACT NAS9-497
DRAWN S. Agne DATE [illegible]
CHECKED A. Udovich 27 AUG 64
APPROVAL [illegible]
APPROVAL [illegible] 10-5-64
NASA APPROVAL [illegible] 10-6-64
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AAC FILTER AND MULTIVIBRATOR 3200 CPS ASSEMBLY

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1007543
SCALE —
WT
SHEET 2 OF 2

1007543

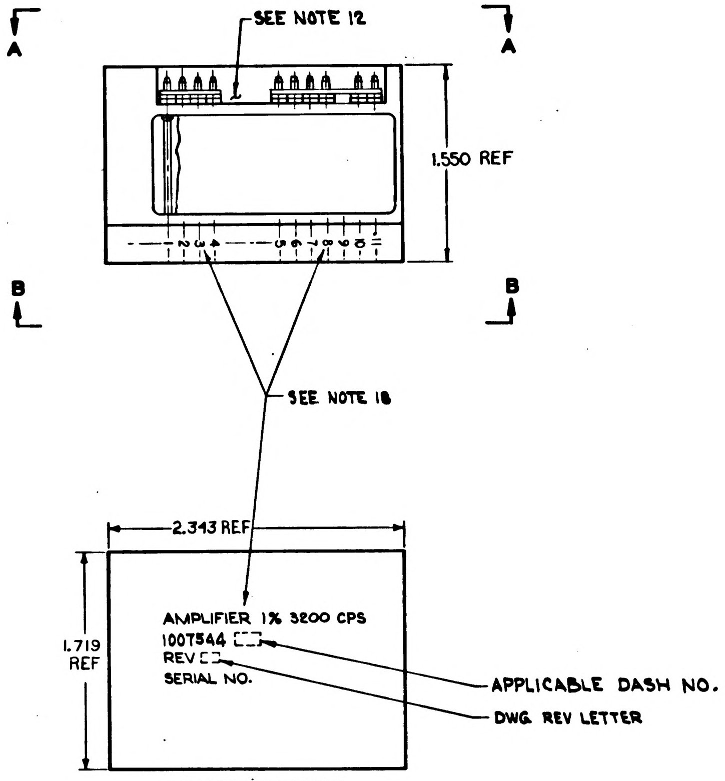
REVISIONS					
SYM	ZONE	DESCRIPTION		DATE	APPD.
A		REVISED PER TDRR 17302	CHG NO.	12 MAR 65	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER CONNECTIONS TO EMITTER (E), BASE(B) AND COLLECTOR(C) OF Q4 AND Q5 PER ND1002071.
3. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD C & CENTRALIZE
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. BOND ITEM 43 AND ITEM 44 TO ITEM 5 PER ND 1002237.
7. PROCURE PER PS 1007044.
8. MOUNTING TORQUE 12 INCH POUNDS ± 2 IN. LBS.
9. MARKING ON ITEMS 2 & 3 INDICATES THE FOLLOWING: BROKEN PATHS INDICATES INSULATION SLEEVING.

   K: CATHODE SIDE OF SEMICONDUCTOR DEVICE.
   FT( ): FEED THRU
   PLUS(+): POSITIVE SIDE OF CAPACITOR
   C: COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C( ): COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B( ): BASE
   E( ): EMITTER

10. BOND ITEM 39 TO ITEM 15. PER MIL-I-15126, CONDITION C-2/23/50 BEFORE ASSEMBLY TO ITEM 1.
11. UNLESS OTHERWISE SPECIFIED:
    A. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    B. WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
12. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR: R3, R4, R5, R10, R11, R12, R14, R15, R16 & R18.
15. TYPICAL SLEEVING & WIRE FOR FT1 THRU FT12.
16. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007544 PART TO BE SELECTED FROM TABLE "A", VALUE IS IN OHMS.
17. FILL PER ND1002117
18. MARK PIN NUMBERS $\overset{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\overset{.148}{.100}$ HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
19. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007544 PART TO BE SELECTED FROM TABLE "B", VALUE IS IN OHMS
20. ASSEMBLE PER ND1002136.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT-2.5, ½ WIDE
23. BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.



MARKING VIEW

TABLE "A" SELECTION CHART FOR R7	
PART NUMBER	VALUE
1010364-337	2800
-345	3090
-351	3320
-359	3650
-365	3920
-371	4220
-377	4530
-381	4750
-387	5110
-391	5360
-395	5620
-397	5760
-401	6040
-405	6340
-409	6650
-411	6810
-415	7150
-419	7500
-421	7680
-425	8060

TABLE "B" SELECTION CHART- FOR R19	
PART NUMBER	VALUE
1006750-70	39K
-52	6.8K
-45	3.6K
-41	2.4K
-38	1.8K
-35	1.3K
-33	1.1K
-114	865
-113	785
-111	650
-110	590
-108	490
-107	450
-106	410

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		REF	1009529	SCHEMATIC DIAGRAM, ELECTRICAL
1		45	SEE NOTE 19	RESISTOR
1		44	1008540-7	GASKET, CONNECTOR-MINIATURE
1		43	1008540-4	GASKET, CONNECTOR-MINIATURE
2		42	1006750-17	RESISTOR, FIXED
2		41	1000093-14	SCREW
1		40	1010264-21	CAPACITOR, FIXED
AR		39	SEE NOTE 22	INSULATION TAPE, ELECT
AR		38	1006776-20	INSULATION, SLEEVING, ELECT
AR		37	1006776-21	INSULATION, SLEEVING, ELECT
AR		36	1006776-22	INSULATION, SLEEVING, ELECT
AR		35	1006757-9	WIRE, ELEC
AR		34	1006757-8	WIRE, ELEC
AR		33	1006757-1	WIRE, ELEC
1		32	1010337	TRANSFORMER
1		31	1010324	TRANSFORMER
1		30	1010269-2	TRANSISTOR
1		29	1010345-2	TRANSISTOR
1		28	1010431	TRANSISTOR
1		27	1010278-80	RESISTOR
1		26	1010278-8	
1		25	1006750-73	
1		24	1006750-49	
2		23	1006750-12	
2		22	1006750-26	
2		21	1006750-1	
2		20	1010364-385	
1		19	1010364-335	
1		18	1010364-381	
1		17	1010364-251	
1		16	SEE NOTE 16	RESISTOR
1		15	1010265-3	SEMICONDUCTOR DEVICE, DIODE
1		14	1010372-16	SEMICONDUCTOR DEVICE, DIODE
2		13	1010264-29	CAPACITOR, FIXED
2		12	1010410-9	CAPACITOR, FIXED
2		11	1008025-2	INSULATOR, BUSHING
2		10	1008021-1	BUSHING, INSULATOR
2		9	1008071-4	WASHER, FLAT
2		8	1008024-2	WASHER, INSULATOR
2		7	1008024-1	WASHER, INSULATOR
2		6	MS20341-10B	NUT
10		5	1006775	INSULATOR
10		4	1006782-5	CONTACT, WRAPOST-MALE
1		3	1015722	INSULATOR
1		2	1015721	INSULATOR
1		1	1015720	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007511		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS XXX ±.005 XX ±.02 ANGLES + − − −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

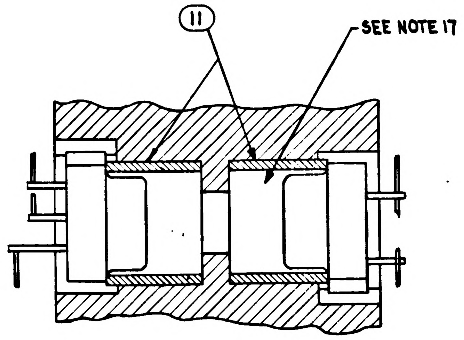
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
Contract NAS 9-497
DRAWN DATE 14 AUG 64
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1% 3200 CPS
MODULE ASSY

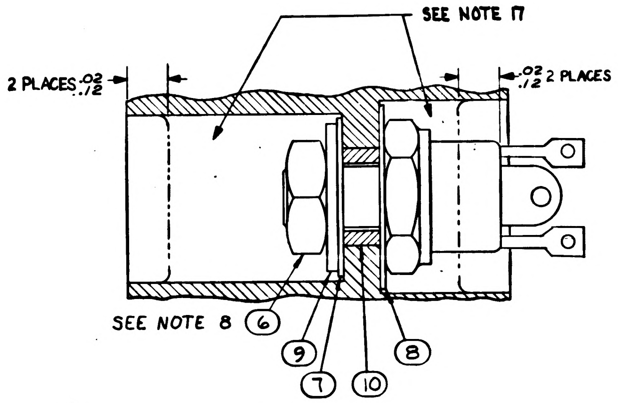
CODE IDENT NO.
SIZE E
1007544
SCALE 2:1
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION		DATE	APPD
A		REVISED PER TDRR 17302	CHG NO.	12 … 65	



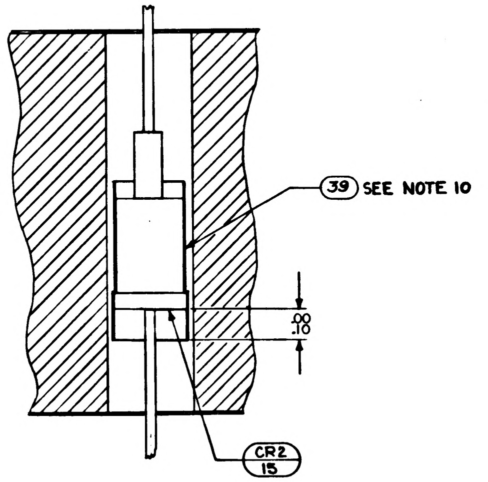
11
SEE NOTE 17

PARTIAL SECTION A-A



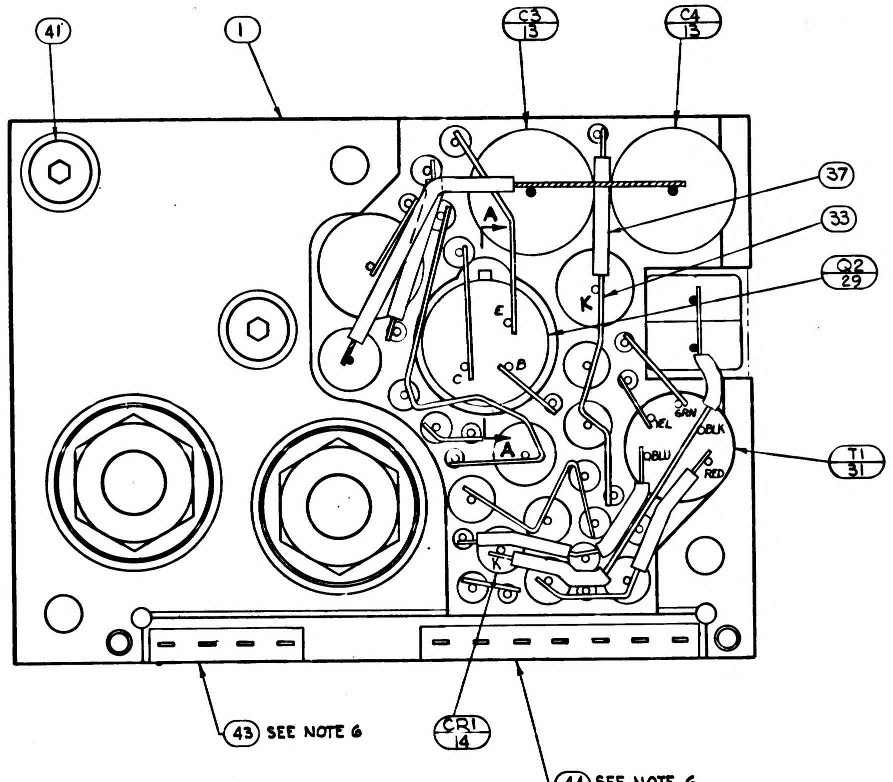
SEE NOTE 17
2 PLACES .02 .12
.02 .12 2 PLACES
SEE NOTE 8
6
9
7
10
8

PARTIAL SECTION B-B
TYP 2 PLACES
SEE NOTE 8



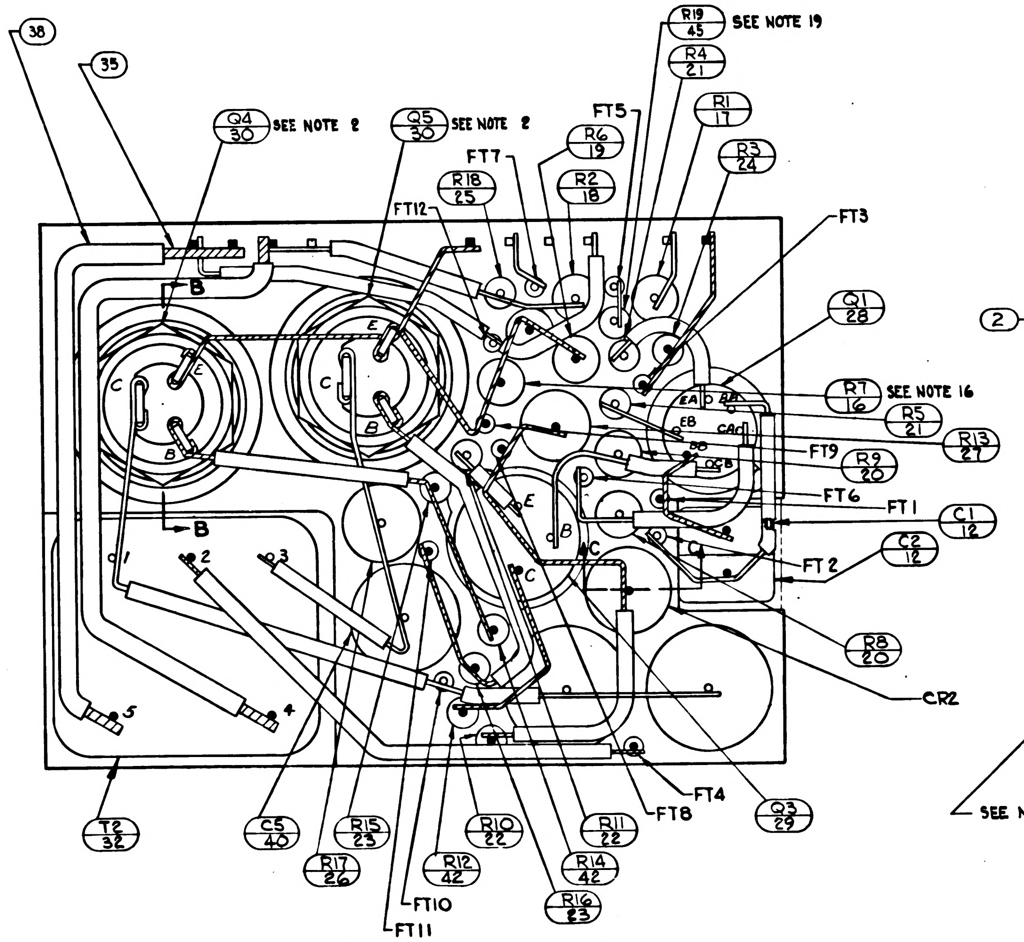
39 SEE NOTE 10
.00 .10
CR2 15

PARTIAL SECTION C-C



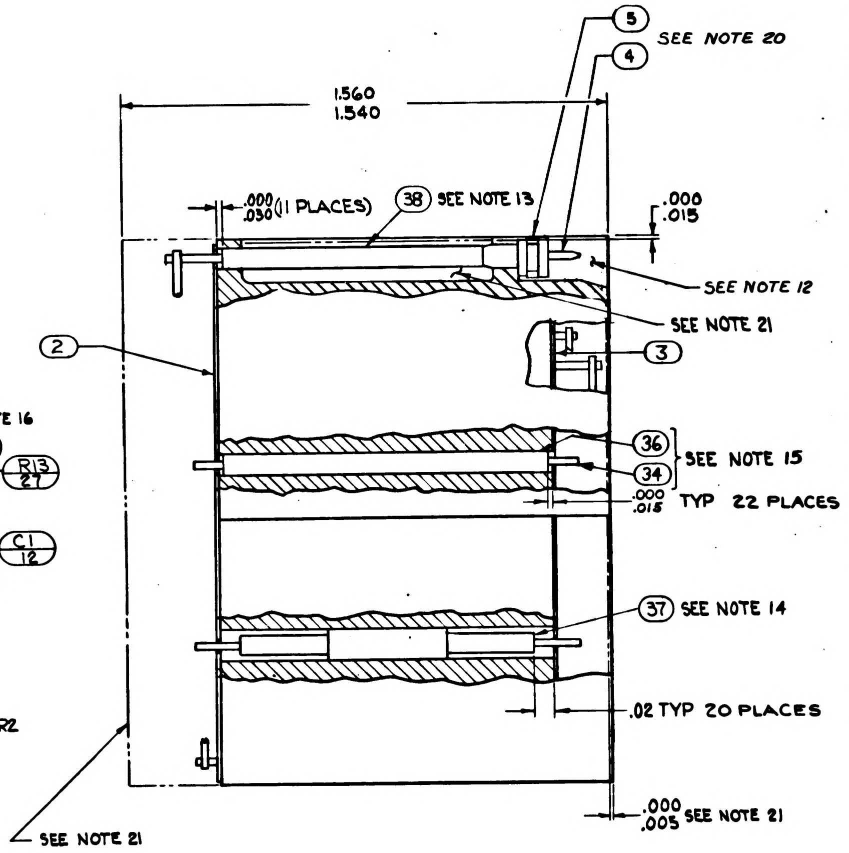
41
1
C3 13
C4 13
37
33
Q2 29
A
K
E
B
C
A
T1 31
YEL
GRN
BLK
BLU
RED
43 SEE NOTE 6
CR1 14
44 SEE NOTE 6

VIEW A-A
BEFORE ENCAPSULATION



38
35
Q4 30 SEE NOTE 2
Q5 30 SEE NOTE 2
R19 45 SEE NOTE 19
R4 21
FT5
R1 17
R6 19
FT7
R3 24
R18 25
R2 18
FT12
FT3
Q1 28
R7 16 SEE NOTE 16
R5 21
R13 27
FT9
R9 20
FT6
FT1
C1 12
C2 12
FT2
R8 20
CR2
B
B
E
C
B
E
C
B
E
B
C
C
1
2
3
4
5
T2 32
C5 40
R15 23
R17 26
R12 42
R10 22
R11 22
R14 42
R16 23
Q3 29
FT4
FT8
FT10
FT11

VIEW B-B
BEFORE ENCAPSULATION.



5
4
SEE NOTE 20
1.560
1.540
.000 .030 (11 PLACES)
38 SEE NOTE 13
.000 .015
SEE NOTE 12
SEE NOTE 21
2
3
36
34
SEE NOTE 15
.000 .015 TYP 22 PLACES
37 SEE NOTE 14
.02 TYP 20 PLACES
.000 .005 SEE NOTE 21
SEE NOTE 21

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + − DECIMALS + − ANGLES + −	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	ACSP PN	AMPLIFIER 1% 3200 CPS MODULE ASSY.
	DRAWN DATE 14 AUG 64	
	CHECKED 20 AUG 64	
	APPROVAL	
DO NOT SCALE THIS DRAWING	APPROVAL	
MATERIAL	NASA APPROVAL W. J. R…	CODE IDENT NO. | SIZE E | 1007544
CONTRACT NAS9-497	MIT APPROVAL 4 Nov 64	SCALE 5:1 | SHEET 2 OF 2

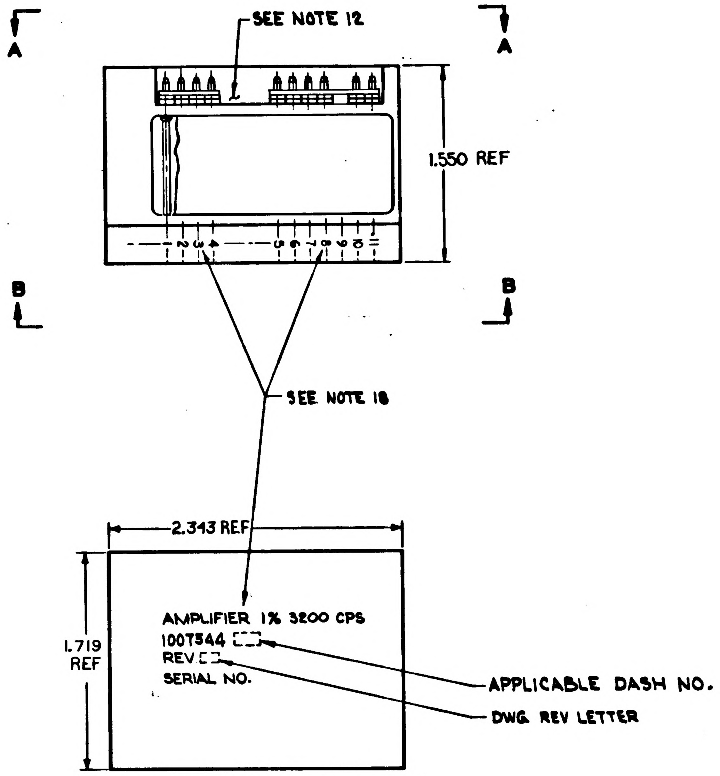
1007544

REVISIONS 13917					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17302		2 … 65	
B		REVISED PER TDRR 17610		24 MAR 65	H.T.O. C7F

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER CONNECTIONS TO EMITTER (E), BASE(B) AND COLLECTOR(C) OF Q4 AND Q5 PER ND1002071.
3. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD C & CENTRALIZE
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. BOND ITEM 43 AND ITEM 44 TO ITEM 5 PER ND 1002237.
7. PROCURE PER PS 1007044.
8. MOUNTING TORQUE 12 INCH POUNDS ± 2 IN. LBS.
9. MARKING ON ITEMS 2 & 3 INDICATES THE FOLLOWING:
   BROKEN PATHS INDICATES INSULATION SLEEVING.

   K: CATHODE SIDE OF SEMICONDUCTOR DEVICE.
   FT( ): FEED THRU
   PLUS(+): POSITIVE SIDE OF CAPACITOR
   C: COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C( ): COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B( ): BASE
   E( ): EMITTER
10. BOND ITEM 39 TO ITEM 15. PER MIL-I-15126, CONDITION C-2/23/50 BEFORE ASSEMBLY TO ITEM 1.
11. UNLESS OTHERWISE SPECIFIED:
    A. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    B. WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
12. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR: R3, R4, R5, R10, R11, R12, R14, R15, R16 & R18.
15. TYPICAL SLEEVING & WIRE FOR FT1 THRU FT12.
16. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007544 PART TO BE SELECTED FROM TABLE "A", VALUE IS IN OHMS.
17. FILL PER ND1002117
18. MARK PIN NUMBERS .100 ~~.060~~ HIGH (WHITE) AND ALL OTHER CHARACTERS ~~.140~~ .100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
19. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007544 PART TO BE SELECTED FROM TABLE "B", VALUE IS IN OHMS
20. ASSEMBLE PER ND1002136.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT-2.5, ½ WIDE
23. BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.



MARKING VIEW

TABLE "A" SELECTION CHART - FOR R7	
PART NUMBER	VALUE
1010364-337	2800
-345	3090
-351	3320
-359	3650
-365	3920
-371	4220
-377	4530
-381	4750
-387	5110
-391	5360
-395	5620
-397	5760
-401	6040
-405	6340
-409	6650
-411	6810
-415	7150
-419	7500
-421	7680
-425	8060

TABLE "B" SELECTION CHART - FOR R19	
PART NUMBER	VALUE
1006750-70	39K
-52	6.8K
-45	3.6K
-41	2.4K
-38	1.8K
-35	1.3K
-33	1.1K
-114	865
-113	785
-111	650
-110	590
-108	490
-107	450
-106	410

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		REF	1009529	SCHEMATIC DIAGRAM, ELECTRICAL
1		46	1010829-3	DIODE
1		45	SEE NOTE 19	RESISTOR
1		44	1008540-7	GASKET, CONNECTOR-MINIATURE
1		43	1008540-6	GASKET, CONNECTOR-MINIATURE
2		42	1006750-17	RESISTOR, FIXED
2		41	1000093-14	SCREW
1		40	1010264-21	CAPACITOR, FIXED
AR		39	SEE NOTE 22	INSULATION TAPE, ELECT
AR		38	1006776-20	INSULATION, SLEEVING, ELECT
AR		37	1006776-21	INSULATION, SLEEVING, ELECT
AR		36	1006776-22	INSULATION, SLEEVING, ELECT
AR		35	1006757-9	WIRE, ELEC
AR		34	1006757-8	WIRE, ELEC
AR		33	1006757-1	WIRE, ELEC
1		32	1010337	TRANSFORMER
1		31	1010324	TRANSFORMER
1		30	1010269-2	TRANSISTOR
1		29	1010345-2	TRANSISTOR
1		28	1010431	TRANSISTOR
1		27	1010278-80	RESISTOR
1		26	1010278-8	
1		25	1006750-73	
1		24	1006750-49	
2		23	1006750-12	
2		22	1006750-26	
2		21	1006750-1	
2		20	1010364-385	
1		19	1010364-335	
1		18	1010364-381	
1		17	1010364-251	
1		16	SEE NOTE 16	RESISTOR
~~1~~		15	~~1010265-3~~	~~SEMICONDUCTOR DEVICE, DIODE~~
1		14	1010372-16	SEMICONDUCTOR DEVICE, DIODE
2		13	1010264-29	CAPACITOR, FIXED
2		12	1010410-9	CAPACITOR, FIXED
2		11	1008025-2	INSULATOR, BUSHING
2		10	1008021-1	BUSHING, INSULATOR
2		9	1008071-4	WASHER, FLAT
2		8	1008024-2	WASHER, INSULATOR
2		7	1008024-1	WASHER, INSULATOR
2		6	MS20341-10B	NUT
10		5	1006775	INSULATOR
10		4	1006782-5	CONTACT, WRAPOST-MALE
1		3	1015722	INSULATOR
1		2	1015721	INSULATOR
1		1	1015720	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007511		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ XXX ±.005 + -
- XX ±.02 - -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

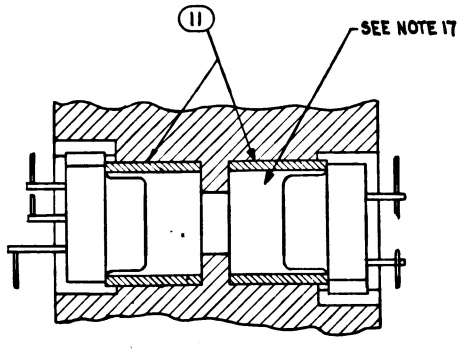
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
Contract NAS 9-497
DRAWN DATE 14 AUG 64
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1% 3200 CPS
MODULE ASSY

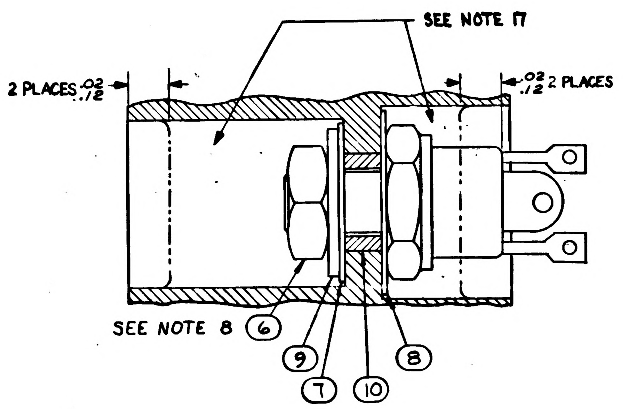
CODE IDENT NO.
SIZE E
1007544
SCALE 2:1
SHEET 1 OF 2

REVISIONS 13913					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TORR 17802		12 MAR 65	EM
B		REVISED PER TORR 17610		24 MAR 65	HTO



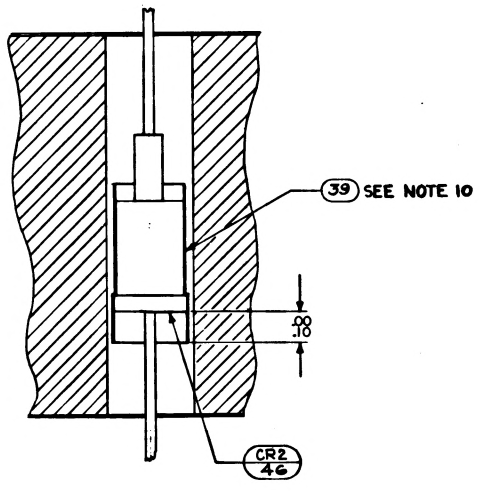
11
SEE NOTE 17

PARTIAL SECTION A-A



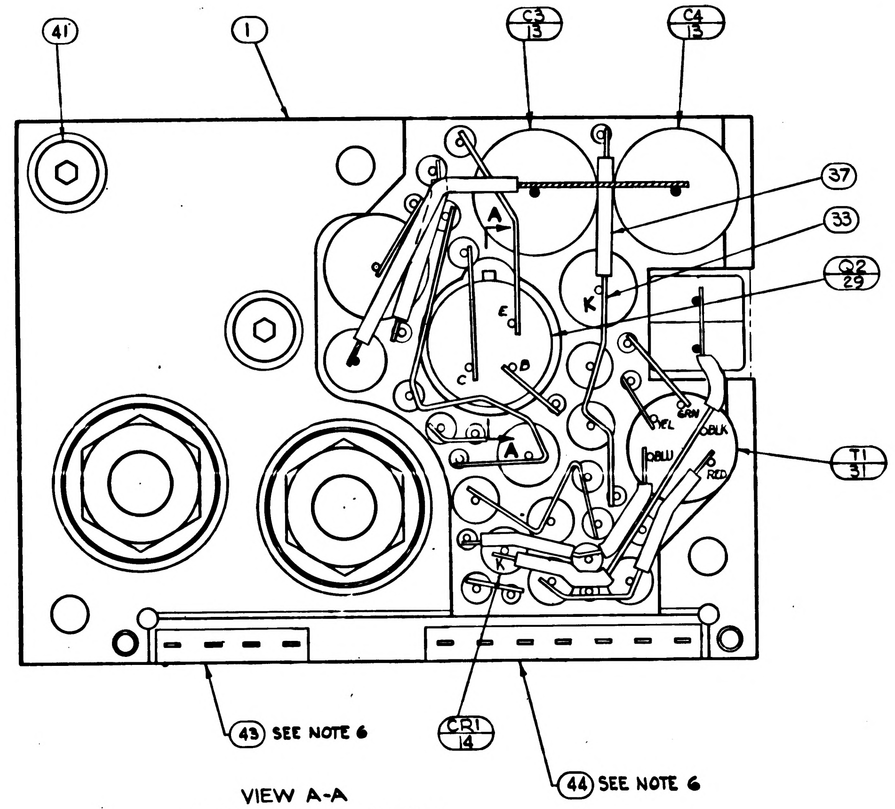
SEE NOTE 17
2 PLACES .02 .12
.02 .12 2 PLACES
SEE NOTE 8
6
9
7
10
8

PARTIAL SECTION B-B
TYP 2 PLACES
SEE NOTE 8



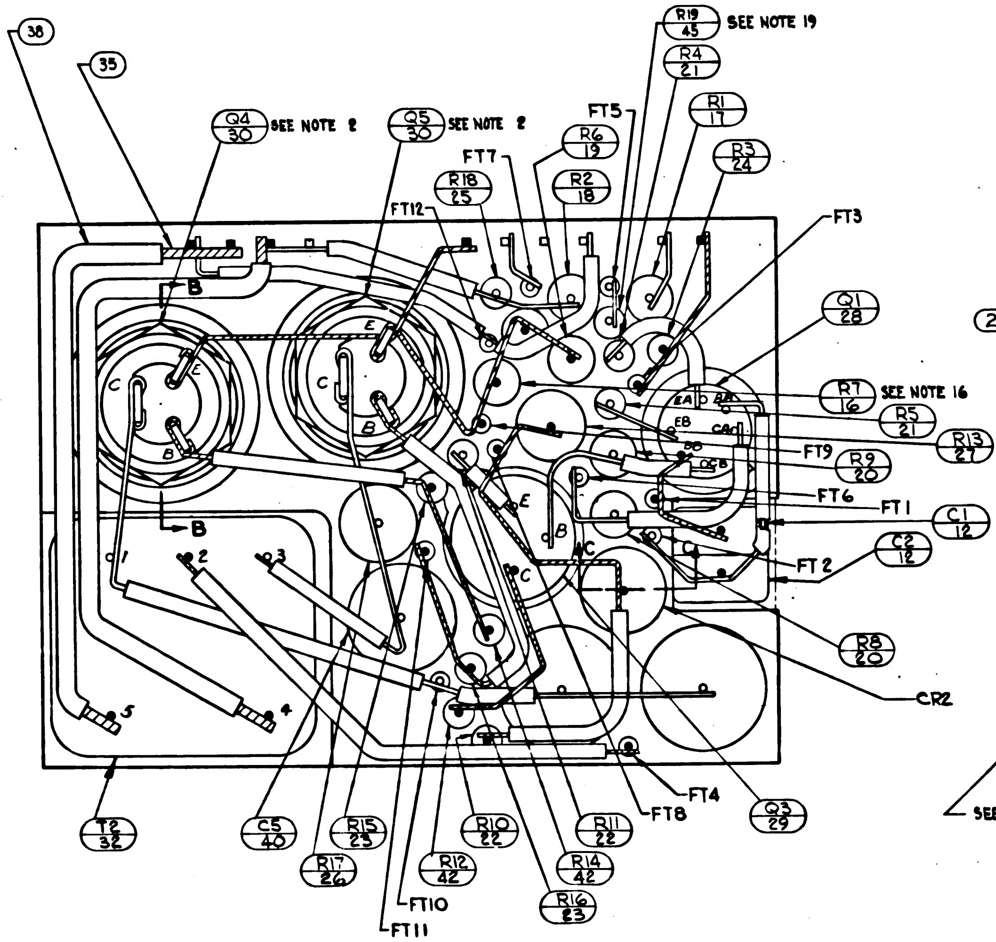
39 SEE NOTE 10
.00 .10
CR2 46

PARTIAL SECTION C-C



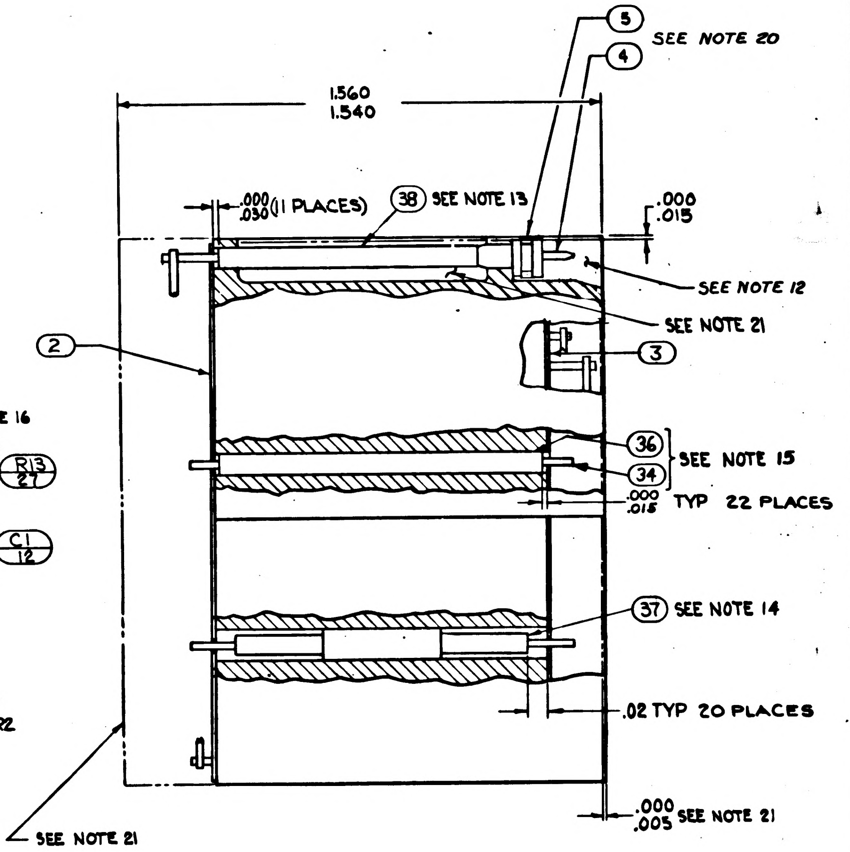
41
1
C3 13
C4 13
37
33
Q2 29
T1 31
A
K
E
B
C
YEL
GRN
BLK
BLU
RED
43 SEE NOTE 6
CR1 14
44 SEE NOTE 6

VIEW A-A
BEFORE ENCAPSULATION



38
35
Q4 30 SEE NOTE 2
Q5 30 SEE NOTE 2
R19 43 SEE NOTE 19
R4 21
R1 17
R6 19
FT5
FT7
R18 25
R2 18
R3 24
FT12
FT3
Q1 28
R7 16 SEE NOTE 16
R5 21
R13 27
FT9
R9 20
FT6
FT1
C1 12
C2 12
FT2
R8 20
CR2
Q3 29
FT4
FT8
B
C
E
1
2
3
4
5
T2 32
C5 40
R15 23
R17 26
R10 22
R12 42
R11 22
R14 42
R16 23
FT10
FT11

VIEW B-B
BEFORE ENCAPSULATION



5 SEE NOTE 20
4
1.560
1.540
.000 .030 (11 PLACES)
38 SEE NOTE 13
.000 .015
SEE NOTE 12
SEE NOTE 21
2
3
36
34
SEE NOTE 15
.000 .015 TYP 22 PLACES
37 SEE NOTE 14
.02 TYP 20 PLACES
.000 .005 SEE NOTE 21
SEE NOTE 21

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	+	+
−	−	−

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN 14 AUG 64 DATE
CHECK 20 AUG 64
APPROVAL
APPROVAL 11-2-64
NASA APPROVAL W J 11-4-64
MIT APPROVAL 4 Nov 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1% 3200 CPS
MODULE ASSY.

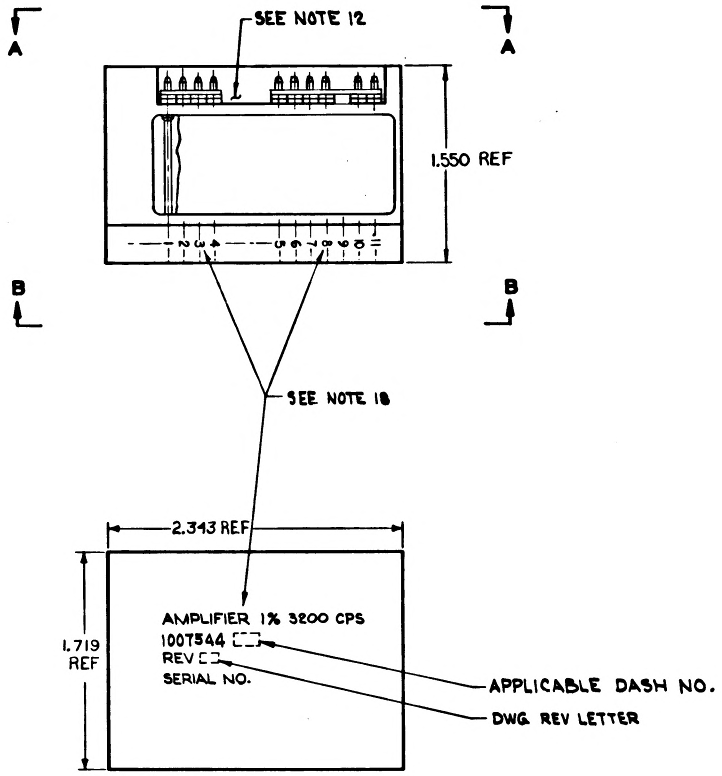
CODE IDENT NO.
SIZE E
1007544
SCALE 5:1
SHEET 2 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17302		MAR 65	
B		REVISED PER TDRR 17610		24 MAR 65	
C		REVISED PER TDRR 17962		6 APR 65	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER CONNECTIONS TO EMITTER (E), BASE(B) AND COLLECTOR(C) OF Q4 AND Q5 PER ND1002071.
3. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD C & CENTRALIZE
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. BOND ITEM 43 AND ITEM 44 TO ITEM 5 PER ND 1002237.
7. PROCURE PER PS 1007044.
8. MOUNTING TORQUE 12 INCH POUNDS ± 2 IN. LBS.
9. MARKING ON ITEMS 2 & 3 INDICATES THE FOLLOWING:
   BROKEN PATHS INDICATES INSULATION SLEEVING.

   K: CATHODE SIDE OF SEMICONDUCTOR DEVICE.
   FT( ): FEED THRU
   PLUS(+): POSITIVE SIDE OF CAPACITOR
   C: COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C( ): COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B( ): BASE
   E( ): EMITTER
10. BOND ITEM 39 TO ITEM 15. PER MIL-I-15126, CONDITION C-2/23/50 BEFORE ASSEMBLY TO ITEM 1.
11. UNLESS OTHERWISE SPECIFIED:
    A. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    B. WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
12. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR: R3, R4, R5, R10, R11, R12, R14, R15, R16 & R18.
15. TYPICAL SLEEVING & WIRE FOR FT1 THRU FT12.
16. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007544 PART TO BE SELECTED FROM TABLE "A", VALUE IS IN OHMS.
17. FILL PER ND1002117
18. MARK PIN NUMBERS .100 .060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140 .100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
19. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007544 PART TO BE SELECTED FROM TABLE "B", VALUE IS IN OHMS
20. ASSEMBLE PER ND1002136.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT-2.5, ½ WIDE
23. BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.



MARKING VIEW

TABLE "A" SELECTION CHART - FOR R7	
PART NUMBER	VALUE
1010364-337	2800
-345	3090
-351	3320
-359	3650
-365	3920
-371	4220
-377	4530
-381	4750
-387	5110
-391	5360
-395	5620
-397	5760
-401	6040
-405	6340
-409	6650
-411	6810
-415	7150
-419	7500
-421	7680
-425	8060

TABLE "B" SELECTION CHART - FOR R19	
PART NUMBER	VALUE
1006750-70	39K
-52	6.8K
-45	3.6K
-41	2.4K
-38	1.8K
-35	1.3K
-33	1.1K
-114	865
-113	785
-111	650
-110	590
-108	490
-107	450
-106	410

QUANTITY REQUIRED							
			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
					REF	1009529	SCHEMATIC DIAGRAM, ELECTRICAL
			1		46	1010829-3	DIODE
			1		45	SEE NOTE 19	RESISTOR
			1		44	1008540-7	GASKET, CONNECTOR-MINIATURE
			1		43	1008540-4	GASKET, CONNECTOR-MINIATURE
			2		42	1006750-17	RESISTOR, FIXED
			2		41	1000093-14	SCREW
			1		40	1010264-21	CAPACITOR, FIXED
			AR		39	SEE NOTE 22	INSULATION TAPE, ELECT
			AR		38	1006776-20	INSULATION, SLEEVING, ELECT
			AR		37	1006776-21	INSULATION, SLEEVING, ELECT
			AR		36	1006776-22	INSULATION, SLEEVING, ELECT
			AR		35	1006757-9	WIRE, ELEC
			AR		34	1006757-8	WIRE, ELEC
			AR		33	1006757-1	WIRE, ELEC
			1		32	1010337	TRANSFORMER
			1		31	1010324	TRANSFORMER
			1		30	1010269-2	TRANSISTOR
			1		29	1010345-2	TRANSISTOR
			1		28	1010431	TRANSISTOR
			1		27	1010278-80	RESISTOR
			1		26	1010278-8	
			1		25	1006750-73	
			1		24	1006750-49	
			2		23	1006750-12	
			2		22	1006750-26	
			2		21	1006750-1	
			2		20	1010364-385	
			1		19	1010364-335	
			1		18	1010364-381	
			1		17	1010364-251	
			1		16	SEE NOTE 16	RESISTOR
			~~1~~		15	~~1010265-3~~	~~SEMICONDUCTOR DEVICE, DIODE~~
			1		14	1010372-16	SEMICONDUCTOR DEVICE, DIODE
			2		13	1010264-29	CAPACITOR, FIXED
			2		12	1010410-9	CAPACITOR, FIXED
			2		11	1008025-2	INSULATOR, BUSHING
			2		10	1008021-1	BUSHING, INSULATOR
			2		9	1008071-4	WASHER, FLAT
			2		8	1008024-2	WASHER, INSULATOR
			2		7	1008024-1	WASHER, INSULATOR
			2		6	MS20341-10B	NUT
			10		5	1006775	INSULATOR
			10		4	1006782-5	CONTACT, WRAPOST-MALE
			1		3	1008302	INSULATOR
			1		2	1008301	INSULATOR
			1		1	1008300	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + - DECIMALS XXX ±.005 XX ±.02 ANGLES + - - -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
Contract NAS 9-497
DRAWN R.J. Olson DATE 14 AUG 64
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

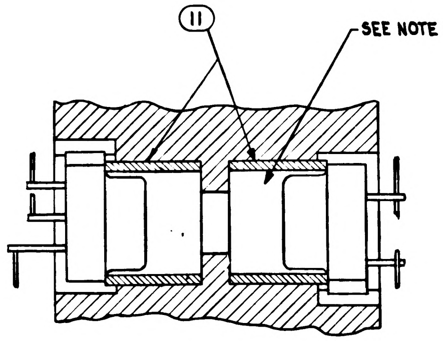
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1% 3200 CPS
MODULE ASSY

CODE IDENT NO.
SIZE E
1007544
SCALE 2:1
SHEET 1 OF 2

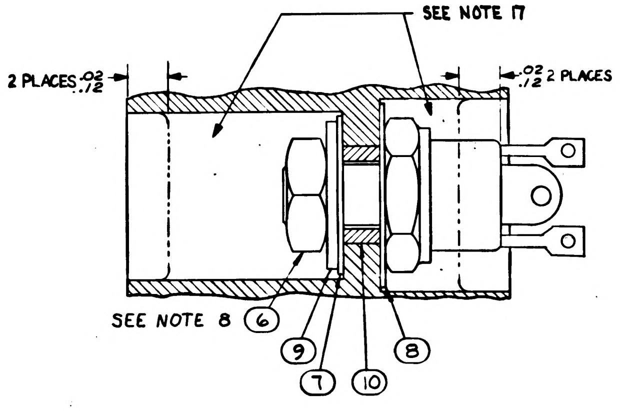
1007544 C

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17302		65	
B		REVISED PER TDRR 17610		31 MAR 65	
C		REVISED PER TDRR 17962		6 APR 65	



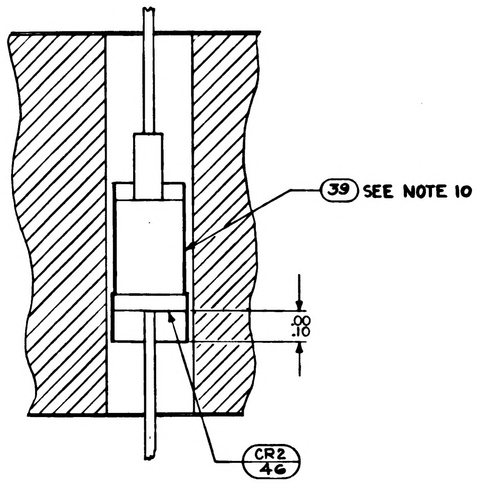
11
SEE NOTE 17

PARTIAL SECTION A-A



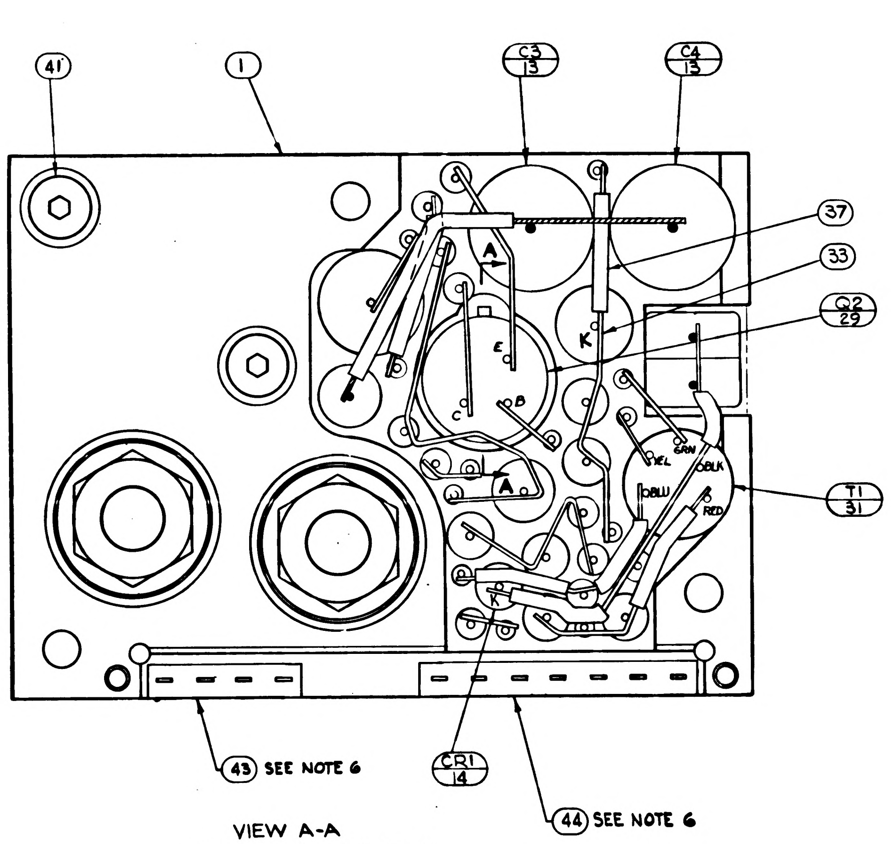
SEE NOTE 17
2 PLACES .02 .12
.02 .12 2 PLACES
SEE NOTE 8
6
9
7
10
8

PARTIAL SECTION B-B
TYP 2 PLACES
SEE NOTE 8



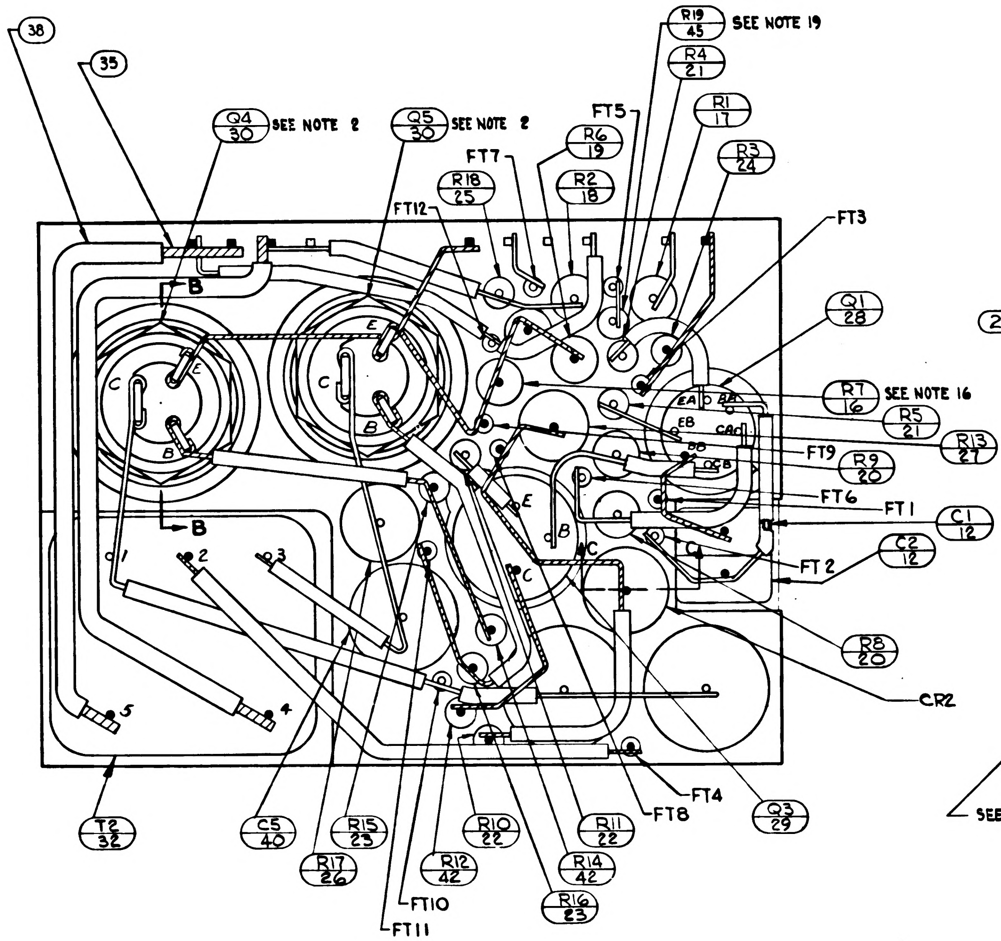
39 SEE NOTE 10
.00 .10
CR2 46

PARTIAL SECTION C-C



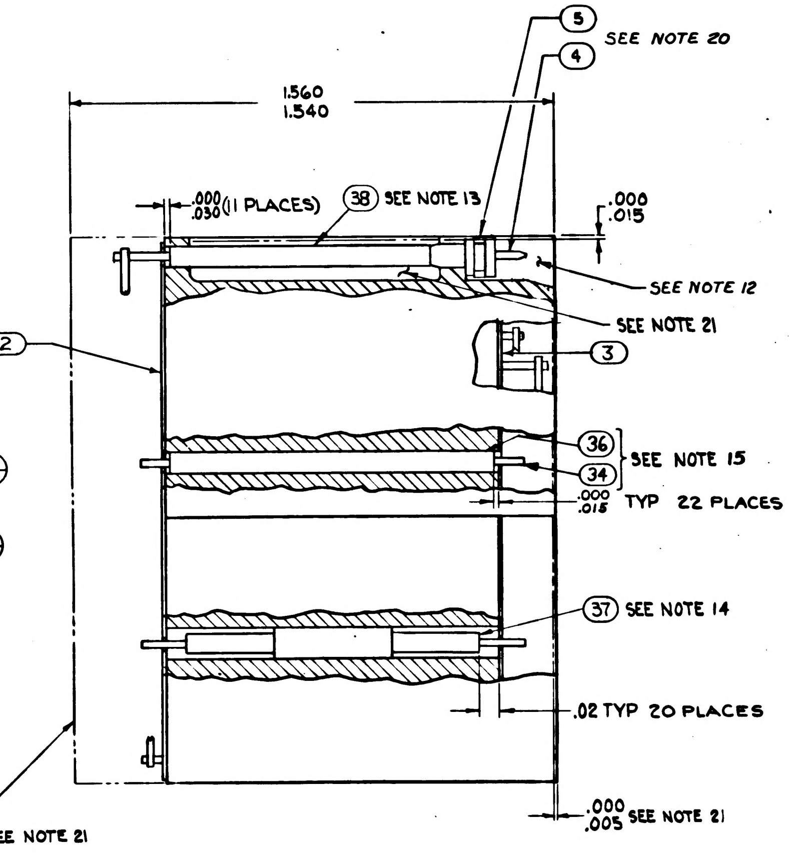
41
1
C3 13
C4 13
37
33
Q2 29
T1 31
A
K
E
B
C
YEL
GRN
BLU
BLK
RED
43 SEE NOTE 6
CR1 14
44 SEE NOTE 6

VIEW A-A
BEFORE ENCAPSULATION



38
35
Q4 30 SEE NOTE 2
Q5 30 SEE NOTE 2
R19 45 SEE NOTE 19
R4 21
FT5
R1 17
FT7
R6 19
R3 24
R18 25
FT12
R2 18
FT3
Q1 28
B
E
C
R7 16 SEE NOTE 16
R5 21
R13 27
FT9
R9 20
FT6
FT1
C1 12
C2 12
FT 2
R8 20
CR2
1
2
3
4
5
FT4
FT8
Q3 29
T2 32
C5 40
R15 23
R17 26
R12 42
R10 22
R14 42
R11 22
R16 23
FT10
FT11

VIEW B-B
BEFORE ENCAPSULATION



5
4
SEE NOTE 20
1.560
1.540
.000 .030 (11 PLACES)
38 SEE NOTE 13
.000 .015
SEE NOTE 12
SEE NOTE 21
2
3
36
34
SEE NOTE 15
.000 .015 TYP 22 PLACES
37 SEE NOTE 14
.02 TYP 20 PLACES
.000 .005 SEE NOTE 21
SEE NOTE 21

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + − DECIMALS + − ANGLES + −	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN DATE 14 AUG 64 CHECKED 20 AUG 64 APPROVAL APPROVAL	MANNED SPACECRAFT CENTER HOUSTON, TEXAS AMPLIFIER 1% 3200 CPS MODULE ASSY
DO NOT SCALE THIS DRAWING		
MATERIAL	NASA APPROVAL	CODE IDENT NO · SIZE E · 1007544
CONTRACT NAS9-497	MIT APPROVAL	SCALE 5:1 · SHEET 2 OF 2

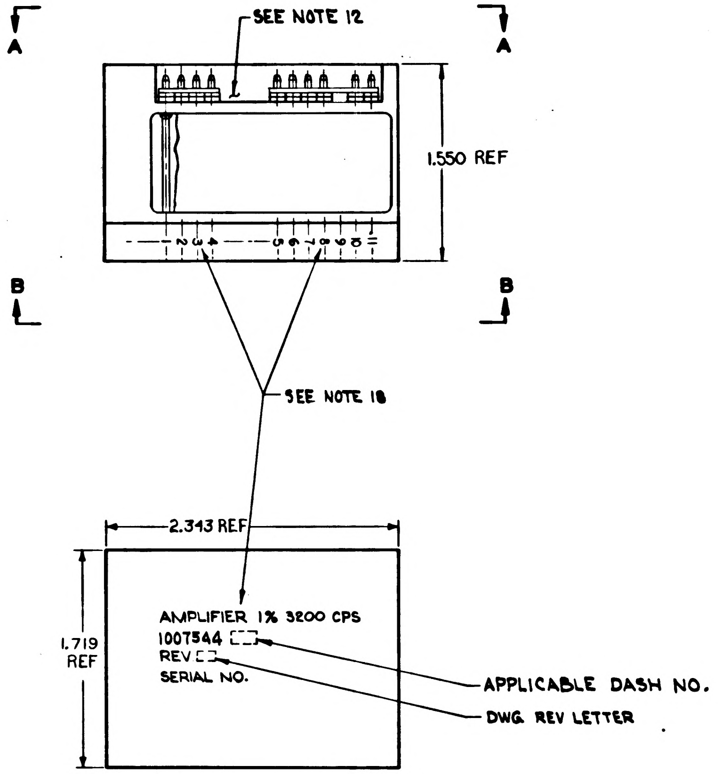
1007544

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17302		[illegible]	[illegible]
B		REVISED PER TDRR 17610		[illegible]	[illegible]
C		REVISED PER TDRR 17962		[illegible]	[illegible]
D		REVISED PER TDRR 18514		[illegible]	R.N.T.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER CONNECTIONS TO EMITTER (E), BASE(B) AND COLLECTOR(C) OF Q4 AND Q5 PER ND1002071.
3. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD C & CENTRALIZE
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. BOND ITEM 43 AND ITEM 44 TO ITEM 5 PER ND 1002237.
7. PROCURE PER PS 1007044.
8. MOUNTING TORQUE 12 INCH POUNDS ± 2 IN. LBS.
9. MARKING ON ITEMS 2 & 3 INDICATES THE FOLLOWING:
   BROKEN PATHS INDICATES INSULATION SLEEVING.

   K: CATHODE SIDE OF SEMICONDUCTOR DEVICE.
   FT( ): FEED THRU
   PLUS(+): POSITIVE SIDE OF CAPACITOR
   C: COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C( ): COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B( ): BASE
   E( ): EMITTER
10. BOND ITEM 39 TO ITEM 15. PER MIL-I-15126, CONDITION C-2/23/50 BEFORE ASSEMBLY TO ITEM I.
11. UNLESS OTHERWISE SPECIFIED:
    A. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    B. WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
12. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR: R3, R4, R5, R10, R11, R12, R14, R15, R16 & R18.
15. TYPICAL SLEEVING & WIRE FOR FT1 THRU FT12.
16. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "A", VALUE IS IN OHMS.
17. FILL PER ND1002117
18. MARK PIN NUMBERS ~~.060~~ .100 HIGH (WHITE) AND ALL OTHER CHARACTERS ~~.100~~ .140 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
19. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "B", VALUE IS IN OHMS
20. ASSEMBLE PER ND1002136.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT-2.5, $\frac{1}{2}$ WIDE
23. BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.



MARKING VIEW

TABLE "A" SELECTION CHART FOR R7	
PART NUMBER	VALUE
1010364-337	2800
-345	3090
-351	3320
-359	3650
-365	3920
-371	4220
-377	4530
-381	4750
-387	5110
-391	5360
-395	5620
-397	5760
-401	6040
-405	6340
-409	6650
-411	6810
-415	7150
-419	7500
-421	7680
-425	8060

TABLE "B" SELECTION CHART-FOR R19	
PART NUMBER	VALUE
1006750-70	39K
-52	6.8K
-45	3.6K
-41	2.4K
-38	1.8K
-35	1.3K
-33	1.1K
-114	865
-113	785
-111	650
-110	590
-108	490
-107	450
-106	410

			011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
					REF	1009529	SCHEMATIC DIAGRAM, ELECTRICAL
			1		46	1010829-3	DIODE
			1		45	SEE NOTE 19	RESISTOR
			1		44	1008540-7	GASKET, CONNECTOR-MINIATURE
			1		43	1008540-4	GASKET, CONNECTOR-MINIATURE
			2		42	1006750-17	RESISTOR, FIXED
			2		41	1000093-14	SCREW
			1		40	1010264-21	CAPACITOR, FIXED
			AR		39	SEE NOTE 22	INSULATION TAPE, ELECT
			AR		38	1006776-20	INSULATION, SLEEVING, ELECT
			AR		37	1006776-21	INSULATION, SLEEVING, ELECT
			AR		36	1006776-22	INSULATION, SLEEVING, ELECT
			AR		35	1006757-9	WIRE, ELEC
			AR		34	1006757-8	WIRE, ELEC
			AR		33	1006757-1	WIRE, ELEC
			1		32	1010337	TRANSFORMER
			1		31	1010324	TRANSFORMER
			1		30	1010269-2	TRANSISTOR
			1		29	1010345-2	TRANSISTOR
			1		28	1010431	TRANSISTOR
			1		27	1010278-80	RESISTOR
			1		26	1010278-8	
			1		25	1006750-73	
			1		24	1006750-49	
			2		23	1006750-12	
			2		22	1006750-26	
			2		21	1006750-1	
			2		20	1010364-385	
			1		19	1010364-335	
			1		18	1010364-381	
			1		17	1010364-251	
			1		16	SEE NOTE 16	RESISTOR
			~~1~~		15	~~1010265-3~~	~~SEMICONDUCTOR DEVICE, DIODE~~
			1		14	1010372-16	SEMICONDUCTOR DEVICE, DIODE
			2		13	1010264-29	CAPACITOR, FIXED
			2		12	1010410-9	CAPACITOR, FIXED
			2		11	1008025-2	INSULATOR, BUSHING
			2		10	1008021-1	BUSHING, INSULATOR
			2		9	1008071-4	WASHER, FLAT
			2		8	1008024-2	WASHER, INSULATOR
			2		7	1008024-1	WASHER, INSULATOR
			2		6	MS20341-103	NUT
			10		5	1006775	INSULATOR
			10		4	1006782-5	CONTACT, WRAPOST-MALE
			1		3	1008302	INSULATOR
			1		2	1008301	INSULATOR
			1		1	1008300	HEATSINK

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ XXX ±.005 + −
− XX ±.02 − −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

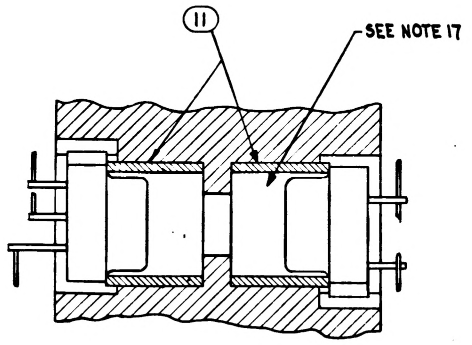
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN R.J. Olson DATE 14 AUG 64
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

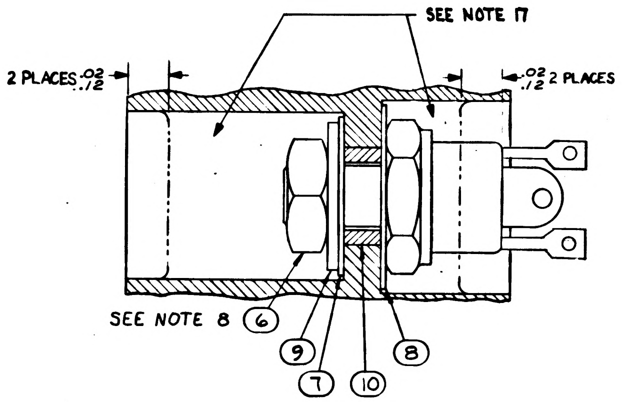
AMPLIFIER 1% 3200 CPS
MODULE ASSY

CODE IDENT NO 80230
SIZE E
1007544
SCALE 2:1
SHEET 1 OF 2

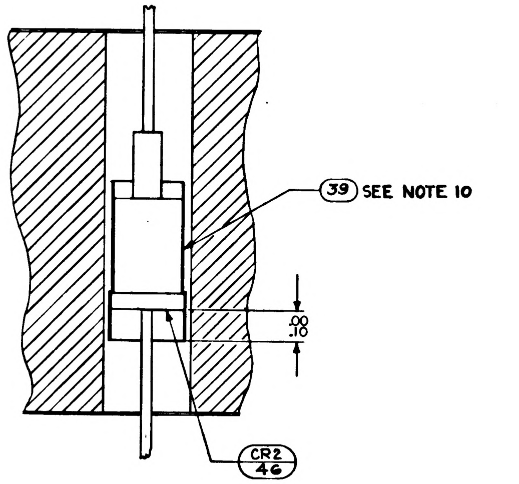
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17302		[illegible] 65	[illegible]
B		REVISED PER TDRR 17610		31 MAR 65	[illegible]
C		REVISED PER TDRR 17962		6 APR 65	[illegible]
D		REVISED PER TDRR 18514		27 AUG 65	[illegible]


11
SEE NOTE 17

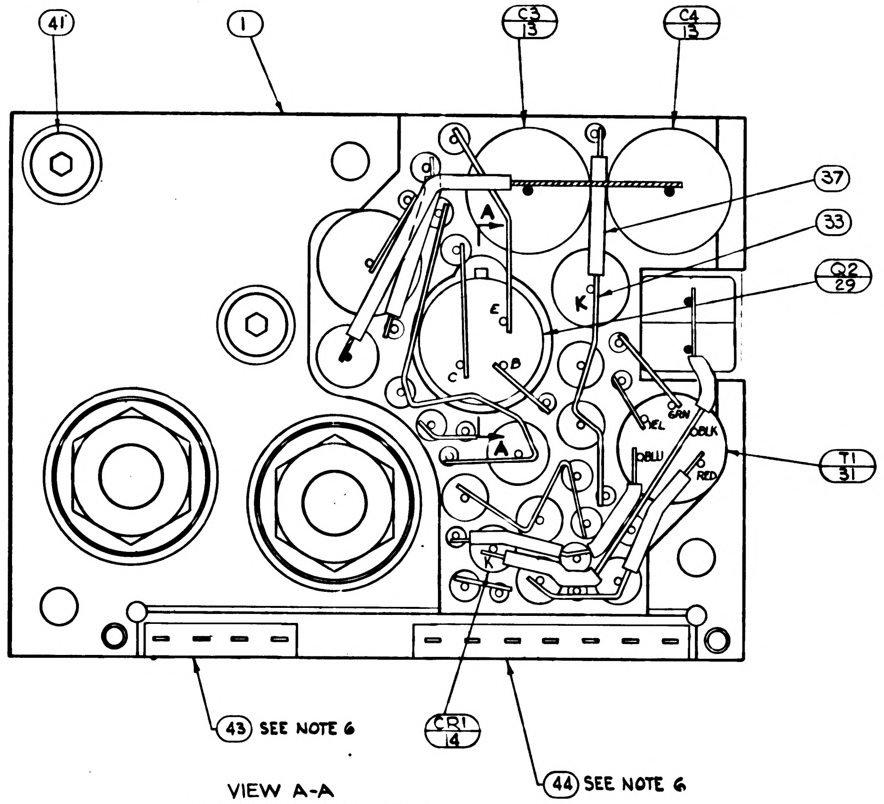
PARTIAL SECTION A-A


SEE NOTE 17
2 PLACES .02 .12
.02 .12 2 PLACES
SEE NOTE 8
6
9
7
10
8

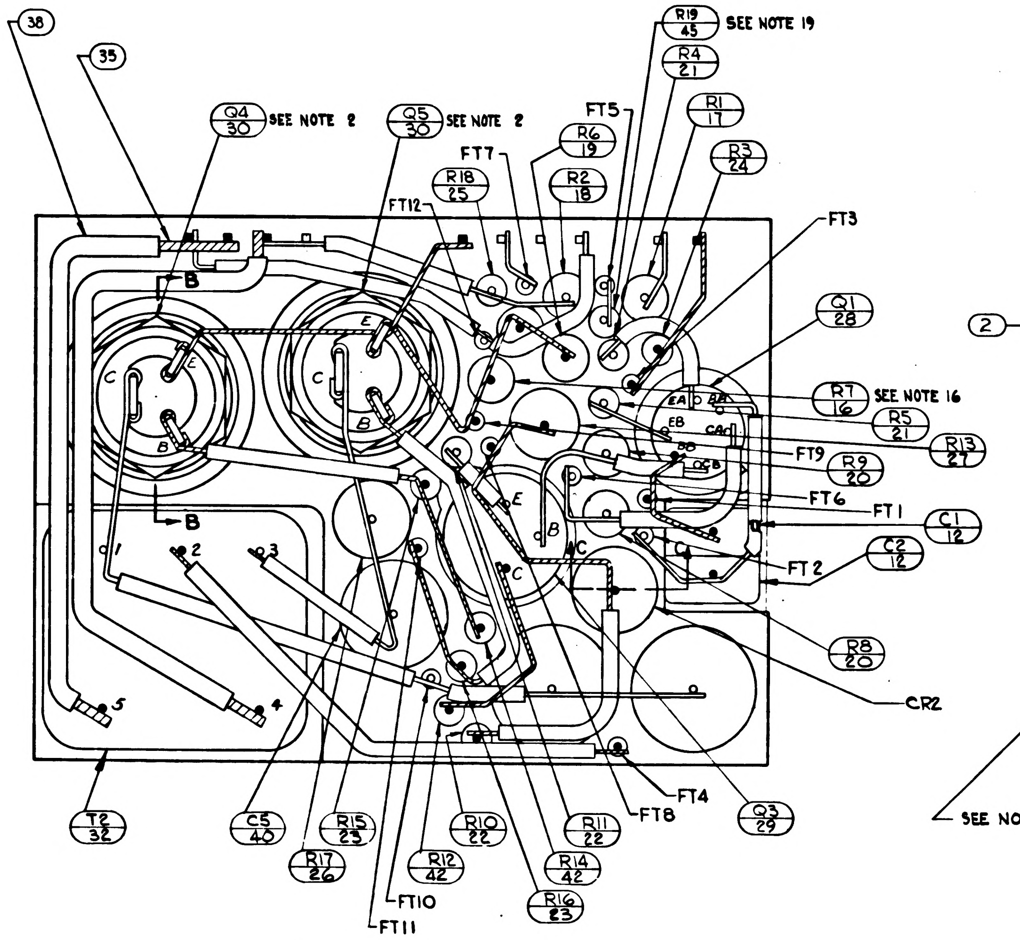
PARTIAL SECTION B-B
TYP 2 PLACES
SEE NOTE 8


39 SEE NOTE 10
.00 .10
CR2 46

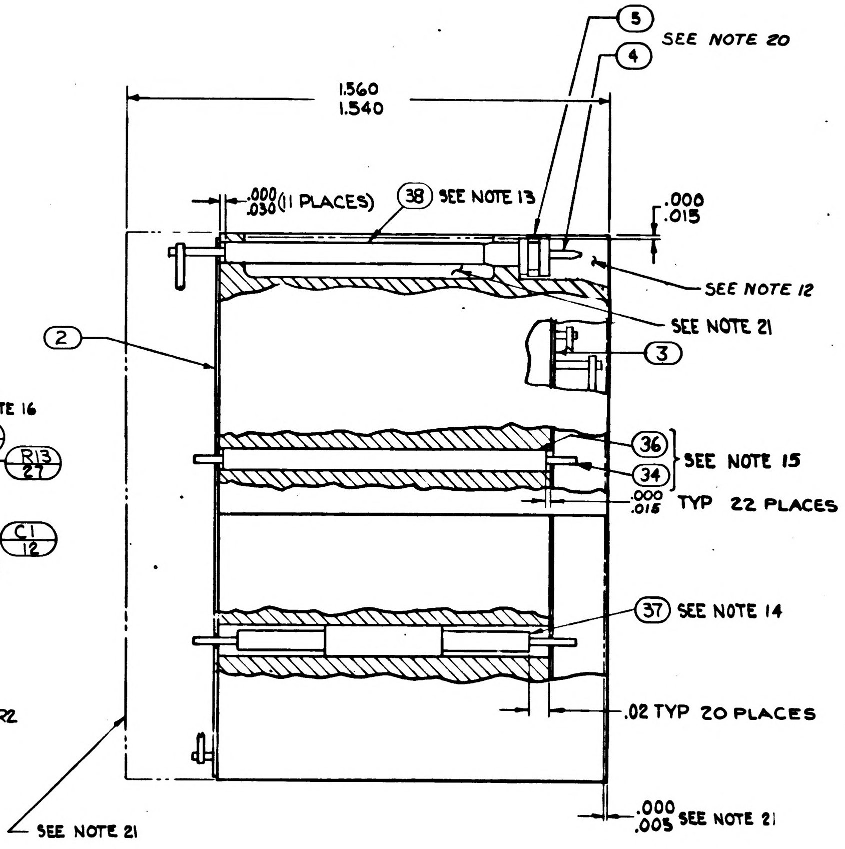
PARTIAL SECTION C-C


41
1
C3 13
C4 13
37
33
Q2 29
T1 31
A
K
E
B
C
GRN
YEL
BLK
BLU
RED
43 SEE NOTE 6
CR1 14
44 SEE NOTE 6

VIEW A-A
BEFORE ENCAPSULATION


38
35
Q4 30 SEE NOTE 2
Q5 30 SEE NOTE 2
R18 25
FT12
FT7
R6 19
R2 18
FT5
R19 45 SEE NOTE 19
R4 21
R1 17
R3 24
FT3
Q1 28
R7 16 SEE NOTE 16
R5 21
R13 27
FT9
R9 20
FT6
FT1
C1 12
C2 12
FT2
R8 20
CR2
Q3 29
FT4
FT8
B
E
C
1
2
3
4
5
T2 32
C5 40
R17 26
R15 23
R12 42
FT10
FT11
R10 22
R16 23
R14 42
R11 22

VIEW B-B
BEFORE ENCAPSULATION


5 SEE NOTE 20
4
1.560 1.540
.000 .030 (11 PLACES)
38 SEE NOTE 13
.000 .015
SEE NOTE 12
SEE NOTE 21
2
3
36
34
SEE NOTE 15
.000 .015 TYP 22 PLACES
37 SEE NOTE 14
.02 TYP 20 PLACES
.000 .005 SEE NOTE 21
SEE NOTE 21

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + − DECIMALS + − ANGLES + −	MIT INSTRUMENTATION LAB Cambridge Mass DRAWN 14 AUG 64 DATE CHECKED 20 AUG 64 APPROVAL APPROVAL	MANNED SPACECRAFT CENTER HOUSTON, TEXAS AMPLIFIER 1% 3200 CPS MODULE ASSY
DO NOT SCALE THIS DRAWING		
MATERIAL	NASA APPROVAL	CODE IDENT NO. 80230 · SIZE E · 1007544
CONTRACT NAS9-497	MIT APPROVAL 4 Nov 64	SCALE 5:1 · SHEET 2 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 17302		[illegible] 65	[illegible]
B		REVISED PER TDRR 17610		24 MAR 65	HTO CJP
C		REVISED PER TDRR 17962		6 APR	JJJ
D		REVISED PER TDRR 18514		26 APR 65	R.W.T. AU
E		REVISED PER TDRR 19387		[illegible] 65	IWP

NOTES:

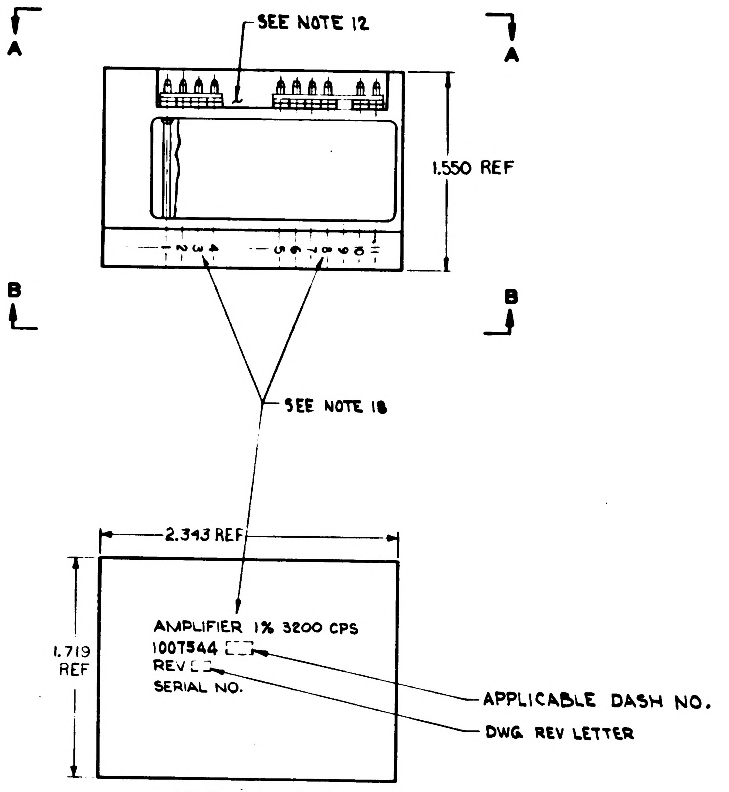
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER CONNECTIONS TO EMITTER (E), BASE(B) AND COLLECTOR(C) OF Q4 AND Q5 PER ND1002071.
3. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 *METHOD C & CENTRALIZE*
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. BOND ITEM 43 AND ITEM 44 TO ITEM 5 PER ND 1002237.
7. PROCURE PER PS 1007044.
8. MOUNTING TORQUE 12 INCH POUNDS ± 2 IN. LBS.
9. MARKING ON ITEMS 2 & 3 INDICATES THE FOLLOWING:
   BROKEN PATHS INDICATES INSULATION SLEEVING.

   K: CATHODE SIDE OF SEMICONDUCTOR DEVICE.
   FT( ): FEED THRU
   PLUS(+): POSITIVE SIDE OF CAPACITOR
   C: COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C( ): COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B( ): BASE
   E( ): EMITTER
10. BOND ITEM 39 TO ITEM 5. PER MIL-I-15126, CONDITION C-2/23/50 BEFORE ASSEMBLY TO ITEM 1.
11. UNLESS OTHERWISE SPECIFIED:
    A. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    B. WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
12. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR: R3, R4, R5, R10, R11, R12, R14, R15, R16 & R18.
15. TYPICAL SLEEVING & WIRE FOR FT1 THRU FT12
16. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "A", VALUE IS IN OHMS.
17. FILL PER ND1002117
18. MARK PIN NUMBERS $\overset{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\overset{.140}{.100}$ HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
19. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "B", VALUE IS IN OHMS
20. ASSEMBLE PER ND1002136.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT-2.5, ½ WIDE
23. ~~BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~

NOTES: (CONTINUED)

24. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF PRIMER BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE I. PRIMER TO CONSIST OF SIX PARTS BY VOLUME OF 1012504-1 AND ONE PART BY VOLUME OF 1012504-2. APPLY MATERIAL AND PRIMER AS INDICATED IN TABLE I.

CONFIGURATION	MAT	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER AT PERIMETER.	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE.
WAFER AND FLAT HEATSINK	ADHESIVE	.12 MIN 100% OF PERIMETER .25 MIN 80% OF PERIMETER	.25 MIN 100% OF PERIMETER	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	ADHESIVE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE.	.25 MIN 100% OF PERIMETER	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	PRIMER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 TO .06 OF EXTERNAL EDGE.



MARKING VIEW

TABLE "A" SELECTION CHART FOR R7	
PART NUMBER	VALUE
1010364-337	2800
-345	3090
-351	3320
-359	3650
-365	3920
-371	4220
-377	4530
-381	4750
-387	5110
-391	5360
-395	5620
-397	5760
-401	6040
-405	6340
-409	6650
-411	6810
-415	7150
-419	7500
-421	7680
-425	8060

TABLE "B" SELECTION CHART FOR R19	
PART NUMBER	VALUE
1006750-70	39K
-52	6.8K
-45	3.6K
-41	2.4K
-38	1.8K
-35	1.3K
-33	1.1K
-114	865
-113	785
-111	650
-110	590
-108	490
-107	450
-106	410

QUANTITY REQUIRED			011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
					REF	1009529	SCHEMATIC DIAGRAM, ELECTRICAL
			1		46	1010829-3	DIODE
			1		45	SEE NOTE 19	RESISTOR
			1		44	1008540-7	GASKET, CONNECTOR-MINIATURE
			1		43	1008540-4	GASKET, CONNECTOR-MINIATURE
			2		42	1006750-17	RESISTOR, FIXED
			2		41	1000093-14	SCREW
			1		40	1010264-21	CAPACITOR, FIXED
			AR		39	SEE NOTE 22	INSULATION TAPE, ELECT
			AR		38	1006776-20	INSULATION, SLEEVING, ELECT
			AR		37	1006776-21	INSULATION, SLEEVING, ELECT
			AR		36	1006776-22	INSULATION, SLEEVING, ELECT
			AR		35	1006757-9	WIRE, ELEC
			AR		34	1006757-8	WIRE, ELEC
			AR		33	1006757-1	WIRE, ELEC
			1		32	1010337	TRANSFORMER
			1		31	1010324	TRANSFORMER
			1		30	1010269-2	TRANSISTOR
			1		29	1010345-2	TRANSISTOR
			1		28	1010431	TRANSISTOR
			1		27	1010278-80	RESISTOR
			1		26	1010278-8	
			1		25	1006750-73	
			1		24	1006750-49	
			2		23	1006750-12	
			2		22	1006750-26	
			2		21	1006750-1	
			2		20	1010364-385	
			1		19	1010364-335	
			1		18	1010364-381	
			1		17	1010364-251	
			1		16	SEE NOTE 16	RESISTOR
			~~1~~		15	~~1010265-3~~	~~SEMICONDUCTOR DEVICE DIODE~~
			1		14	1010372-16	SEMICONDUCTOR DEVICE, DIODE
			2		13	1010264-29	CAPACITOR, FIXED
			2		12	1010410-9	CAPACITOR, FIXED
			2		11	1008025-2	INSULATOR, BUSHING
			2		10	1008021-1	BUSHING, INSULATOR
			2		9	1008071-4	WASHER, FLAT
			2		8	1008024-2	WASHER, INSULATOR
			2		7	1008024-1	WASHER, INSULATOR
			2		6	MS20341-105	NUT
			10		5	1006775	INSULATOR
			10		4	1006782-5	CONTACT, WRAPOST-MALE
			1		3	1008302	INSULATOR
			1		2	1008301	INSULATOR
			1		1	1008300	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO
1007571		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ANGLES
XXX ±.005 ±
XX ±.02 ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

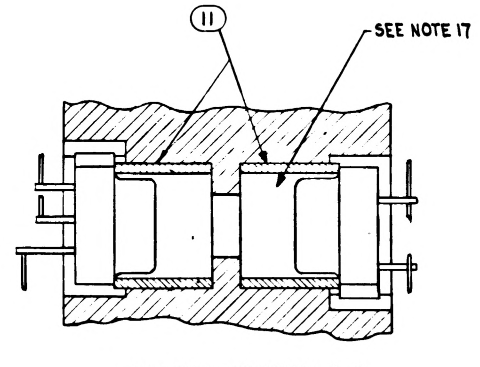
MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DRAWN DATE 14 AUG 64
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1% 3200 CPS
MODULE ASSY

CODE IDENT NO 80230
SIZE E
1007544
SCALE 2:1
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TORR 17302		65	FM
B		REVISED PER TORR 17610		24 MAR 65	HTO
C		REVISED PER TORR 17962		6 APR 65	
D		REVISED PER TORR 18514		27 APR 65	R.W.T.
E		REVISED PER TORR 19367		65	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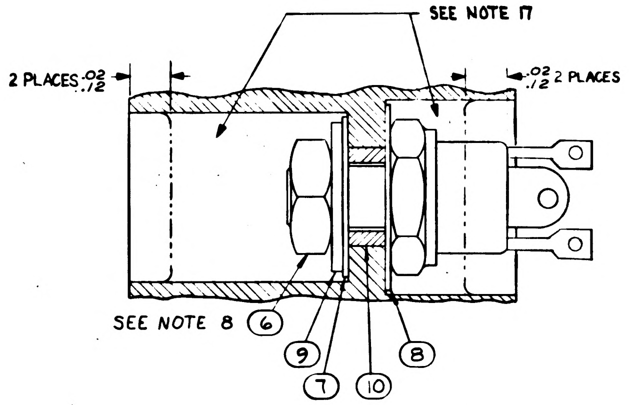
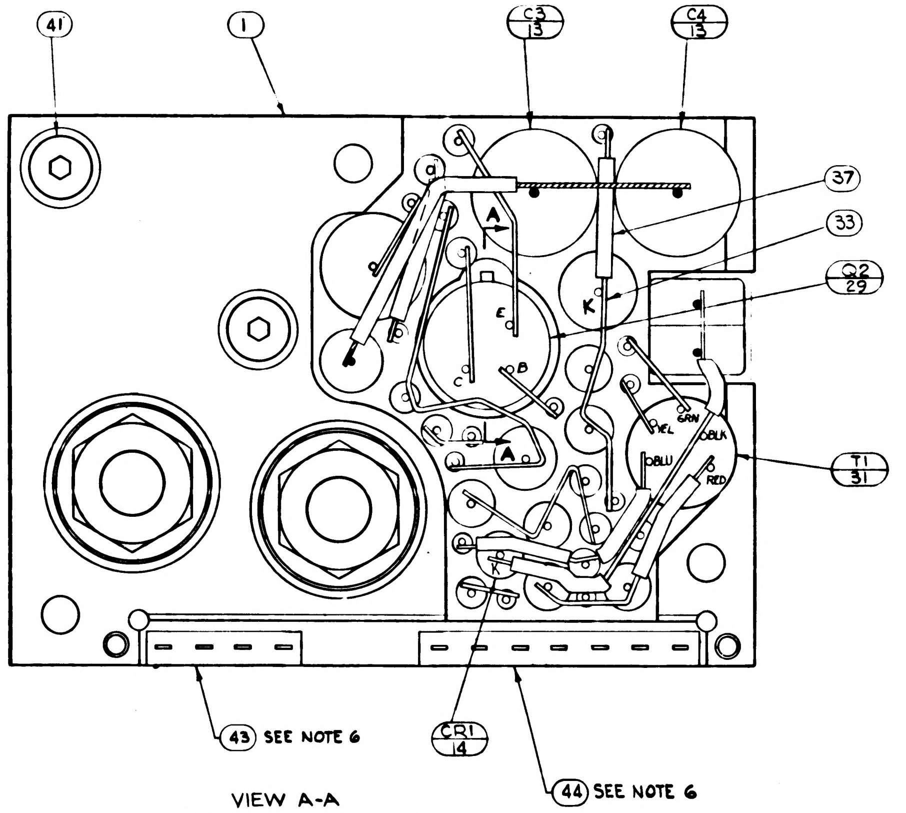
SEE NOTE 17

PARTIAL SECTION A-A


SEE NOTE 17
2 PLACES .02 .12
.02 .12 2 PLACES
SEE NOTE 8
6
9
7
10
8

PARTIAL SECTION B-B
TYP 2 PLACES
SEE NOTE 8


41
1
C3 13
C4 13
37
33
Q2 29
A
K
E
B
C
YEL
GRN
BLK
BLU
RED
T1 31
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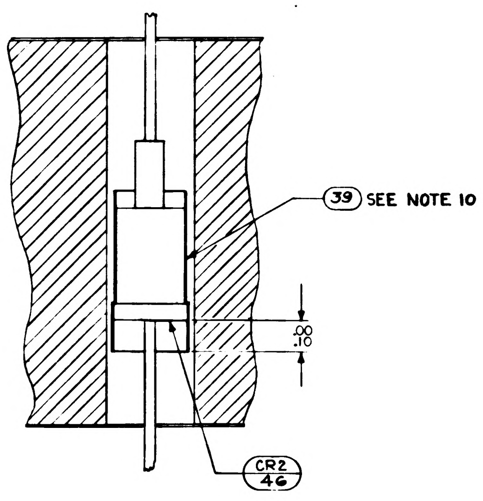
CR1 14
44 SEE NOTE 6

VIEW A-A
BEFORE ENCAPSULATION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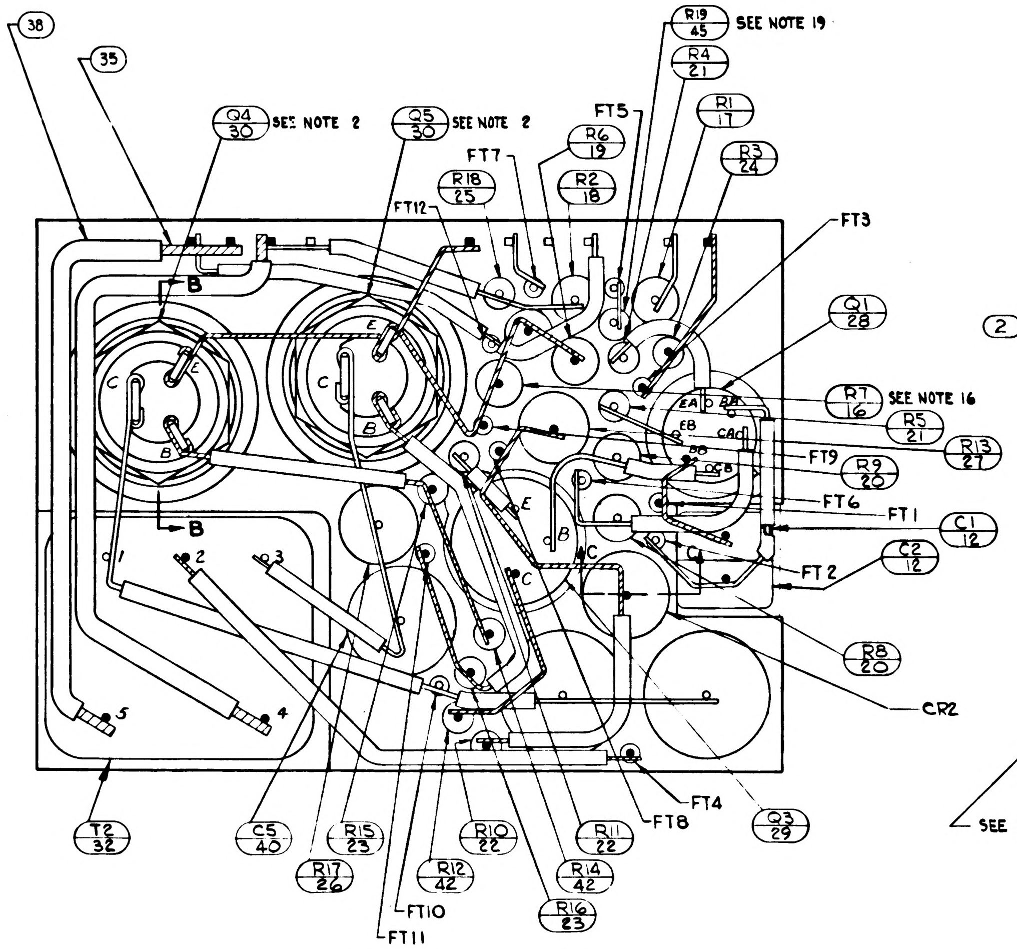
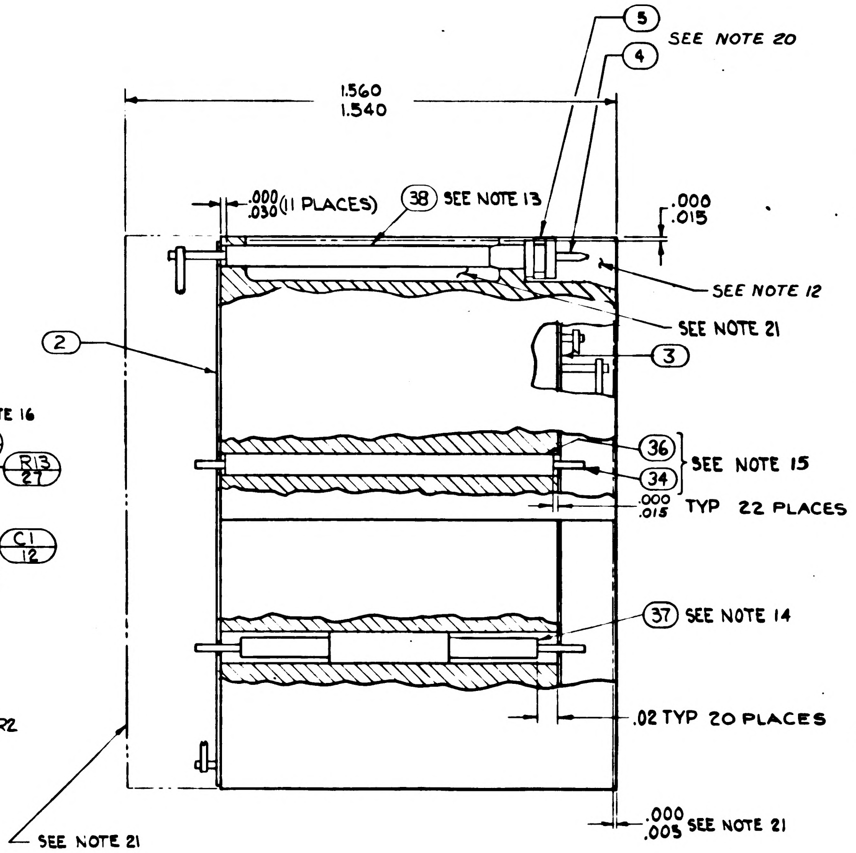
CR2 46

PARTIAL SECTION C-C


38
35
Q4 30 SEE NOTE 2
Q5 30 SEE NOTE 2
R18 25
FT12
FT7
R6 19
R2 18
FT5
R19 45 SEE NOTE 19
R4 21
R1 17
R3 24
FT3
Q1 28
R7 16 SEE NOTE 16
R5 21
R13 27
FT9
R9 20
FT6
FT1
C1 12
C2 12
FT2
R8 20
CR2
B
B
C
E
B
1
2
3
4
5
EA
BA
EB
CA
BB
CB
T2 32
C5 40
R17 26
R15 23
FT10
FT11
R12 42
R10 22
R16 23
R14 42
R11 22
FT8
FT4
Q3 29

VIEW B-B
BEFORE ENCAPSULATION


5
4
SEE NOTE 20
1.560
1.540
.000 .030 (11 PLACES)
38 SEE NOTE 13
.000 .015
SEE NOTE 12
SEE NOTE 21
2
3
36
34
SEE NOTE 15
.000 .015 TYP 22 PLACES
37 SEE NOTE 14
.02 TYP 20 PLACES
SEE NOTE 21
.000 .005 SEE NOTE 21

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + − DECIMALS + − ANGLES + −	M I T INSTRUMENTATION LAB CAMBRIDGE, MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
	DRAWN [illegible] DATE 14 AUG 64 CHECKED [illegible] 20 AUG 64 APPROVAL [illegible] APPROVAL [illegible]	AMPLIFIER 1% 3200 CPS MODULE ASSY	
DO NOT SCALE THIS DRAWING			
MATERIAL	NASA APPROVAL [illegible]	CODE IDENT NO 80230	SIZE E 1007544
CONTRACT NAS9-497	MIT APPROVAL [illegible]	SCALE 5:1	SHEET 2 OF 2

1007544 E

NOTES: (CONTINUED)

24. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR [illegible]		[illegible]	[illegible]
B		REVISED PER TDRR 17610		4 MAR 65	HTO
C		REVISED PER TDRR [illegible]		6 APR	[illegible]
D		REVISED PER TDRR 18514		26 APR 65	R.W.T.
E		REVISED PER TDRR 19387		[illegible]	WP
F		REVISED PER TDRR 19438		[illegible] 65	WP

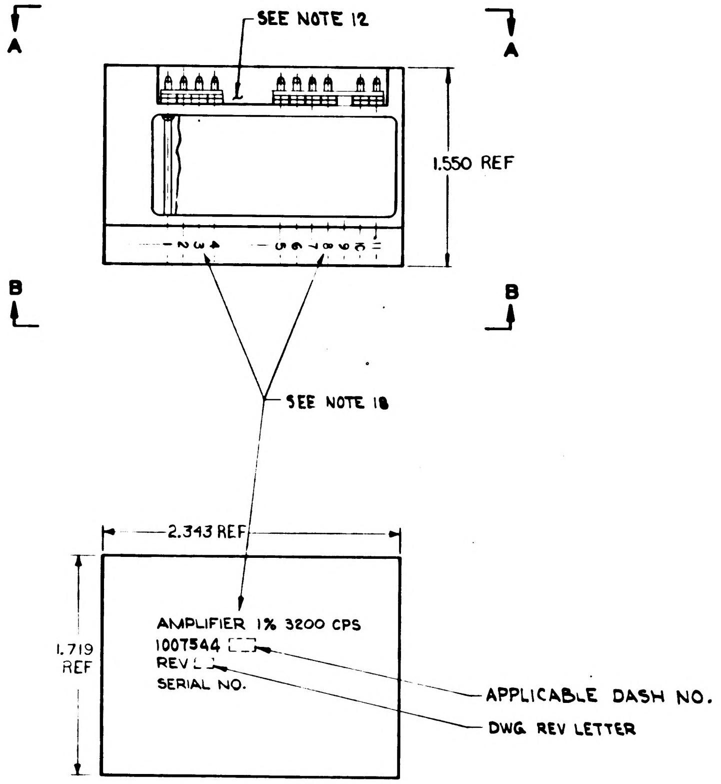
TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE.
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03±.03 OF EXTERNAL EDGE.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER CONNECTIONS TO EMITTER (E), BASE(B) AND COLLECTOR(C) OF Q4 AND Q5 PER ND1002071.
3. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD C & CENTRALIZE
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. BOND ITEM 43 AND ITEM 44 TO ITEM 5 PER ND 1002237.
7. PROCURE PER PS 1007044.
8. MOUNTING TORQUE 12 INCH POUNDS ± 2 IN. LBS.
9. MARKING ON ITEMS 2 & 3 INDICATES THE FOLLOWING:
   BROKEN PATHS INDICATES INSULATION SLEEVING.

   K: CATHODE SIDE OF SEMICONDUCTOR DEVICE.
   FT( ): FEED THRU
   PLUS(+): POSITIVE SIDE OF CAPACITOR
   C: COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C( ): COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B( ): BASE
   E( ): EMITTER
10. BOND ITEM 39 TO ITEM 15. PER MIL-I-15126, CONDITION C-2/23/50 BEFORE ASSEMBLY TO ITEM 1.
11. UNLESS OTHERWISE SPECIFIED:
    A. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    B. WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
12. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR: R3, R4, R5, R10, R11, R12, R14, R15, R16 & R18.
15. TYPICAL SLEEVING & WIRE FOR FT1 THRU FT12
16. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "A", VALUE IS IN OHMS.
17. FILL PER ND1002117
18. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
19. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "B", VALUE IS IN OHMS
20. ASSEMBLE PER ND 1002136.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM, UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT-2.5, ½ WIDE
23. ~~BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~



MARKING VIEW

TABLE "A" SELECTION CHART FOR R7	
PART NUMBER	VALUE
1010364-337	2800
-345	3090
-351	3320
-359	3650
-365	3920
-371	4220
-377	4530
-381	4750
-387	5110
-391	5360
-395	5620
-397	5760
-401	6040
-405	6340
-409	6650
-411	6810
-415	7150
-419	7500
-421	7680
-425	8060

TABLE "B" SELECTION CHART FOR R19	
PART NUMBER	VALUE
1006750-70	39K
-52	6.8K
-45	3.6K
-41	2.4K
-38	1.8K
-35	1.3K
-33	1.1K
-114	865
-113	785
-111	650
-110	590
-108	490
-107	450
-106	410

QUANTITY REQUIRED	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		REF	1009529	SCHEMATIC DIAGRAM, ELECTRICAL
1		46	1010829-3	DIODE
1		45	SEE NOTE 19	RESISTOR
1		44	1008540-7	GASKET, CONNECTOR-MINIATURE
1		43	1008540-4	GASKET, CONNECTOR-MINIATURE
2		42	1006750-17	RESISTOR, FIXED
2		41	1000093-14	SCREW
1		40	1010264-21	CAPACITOR, FIXED
AR		39	SEE NOTE 22	INSULATION TAPE, ELECT
AR		38	1006776-20	INSULATION, SLEEVING, ELECT
AR		37	1006776-21	INSULATION, SLEEVING, ELECT
AR		36	1006776-22	INSULATION, SLEEVING, ELECT
AR		35	1006757-9	WIRE, ELEC
AR		34	1006757-8	WIRE, ELEC
AR		33	1006757-1	WIRE, ELEC
1		32	1010337	TRANSFORMER
1		31	1010324	TRANSFORMER
1		30	1010269-2	TRANSISTOR
1		29	1010345-2	TRANSISTOR
1		28	1010431	TRANSISTOR
1		27	1010278-80	RESISTOR
1		26	1010278-8	
1		25	1006750-73	
1		24	1006750-49	
2		23	1006750-12	
2		22	1006750-26	
2		21	1006750-1	
2		20	1010364-385	
1		19	1010364-335	
1		18	1010364-381	
1		17	1010364-251	
1		16	SEE NOTE 16	RESISTOR
~~1~~		15	~~1010265-3~~	SEMICONDUCTOR DEVICE, DIODE
1		14	1010372-16	SEMICONDUCTOR DEVICE, DIODE
2		13	1010264-29	CAPACITOR, FIXED
2		12	1010410-9	CAPACITOR, FIXED
2		11	1008025-2	INSULATOR, BUSHING
2		10	1008021-1	BUSHING, INSULATOR
2		9	1008071-4	WASHER, FLAT
2		8	1008024-2	WASHER, INSULATOR
2		7	1008024-1	WASHER, INSULATOR
2		6	MS20341-103	NUT
10		5	1006775	INSULATOR
10		4	1006782-5	CONTACT, WRAPOST-MALE
1		3	1008302	INSULATOR
1		2	1008301	INSULATOR
1		1	1008300	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + - DECIMALS XXX ±.005 XX ±.02 ANGLES + - - -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

M I T
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN [illegible] DATE 14 AUG 64
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

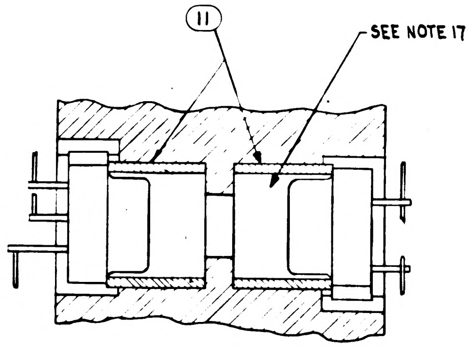
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1% 3200 CPS
MODULE ASSY

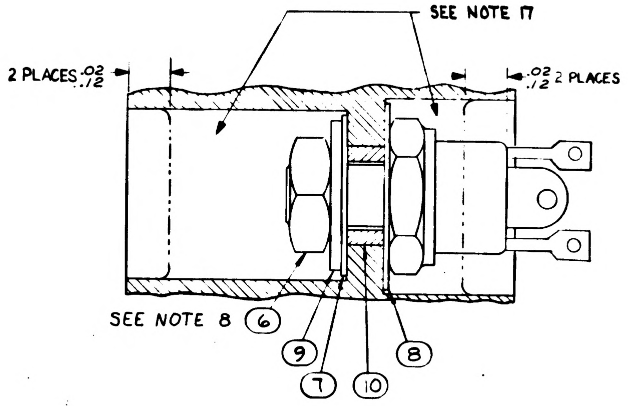
CODE IDENT NO 80230
SIZE E
1007544
SCALE 2:1
SHEET 1 OF 2

1007544

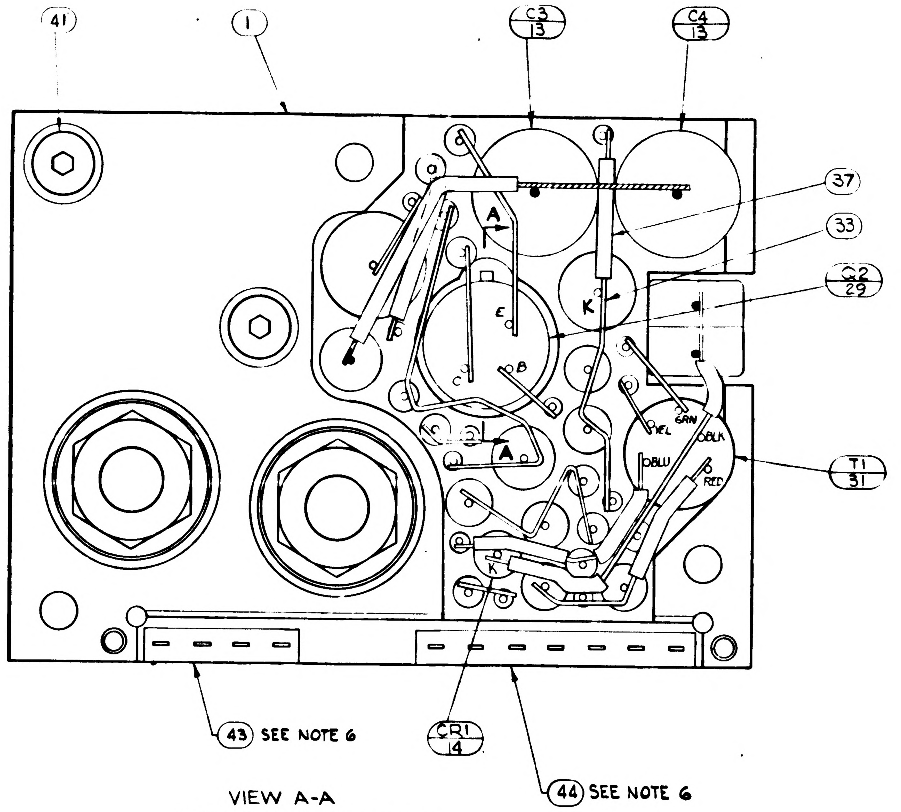
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR [illegible]		[illegible]	[illegible]
B		REVISED PER TDRR 17610		24 JUNE 64	HTO 64
C		REVISED PER TDRR [illegible]		[illegible]	[illegible]
D		REVISED PER TDRR 18514		27 APR 65	K.W.T.
E		REVISED PER TDRR 19367		[illegible]	[illegible]
F		REVISED PER TDRR 19438		[illegible] 65	WP


11
SEE NOTE 17

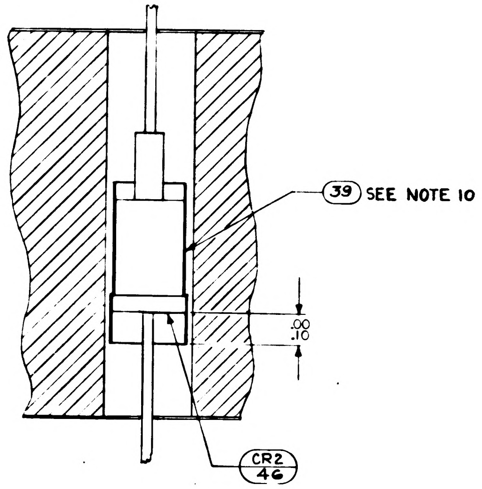
PARTIAL SECTION A-A


SEE NOTE 17
2 PLACES .02 .12
.02 .12 2 PLACES
SEE NOTE 8
6
9
7
10
8

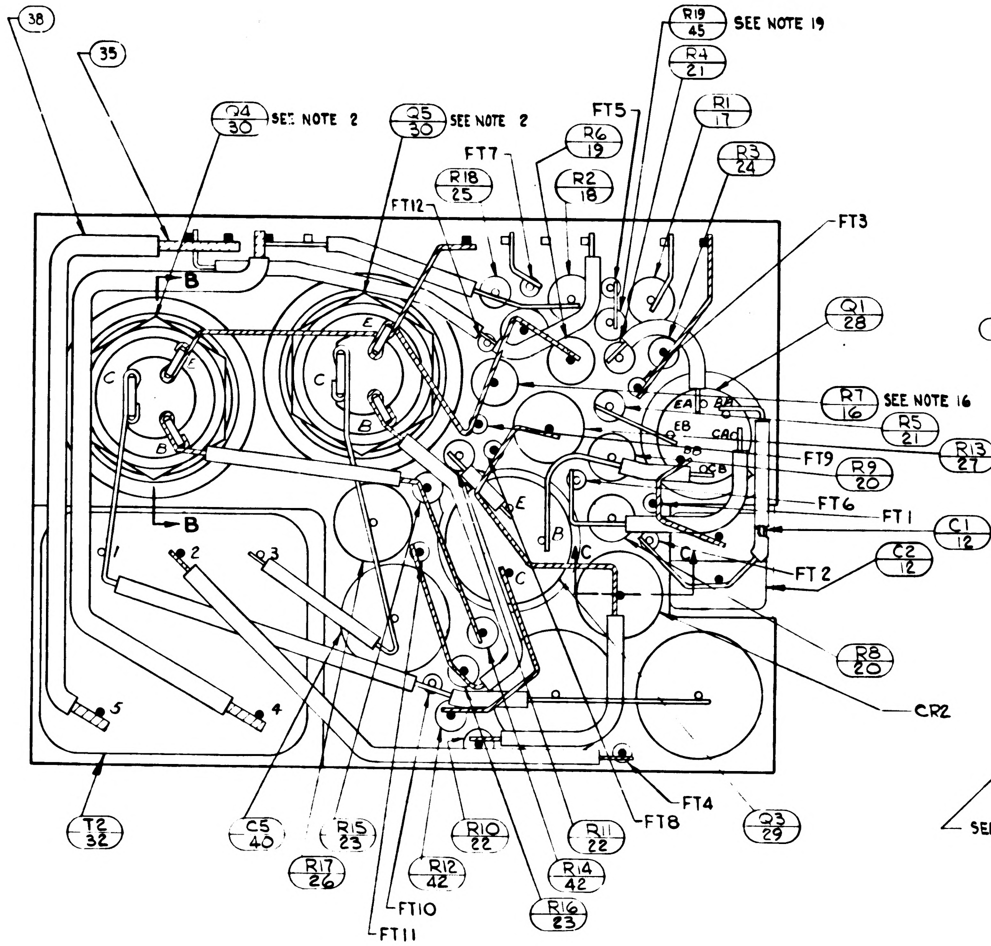
PARTIAL SECTION B-B
TYP 2 PLACES
SEE NOTE 8


41
1
C3 13
C4 13
37
33
Q2 29
T1 31
A
K
E
B
C
GRN
YEL
BLK
BLU
RED
43 SEE NOTE 6
CR1 14
44 SEE NOTE 6

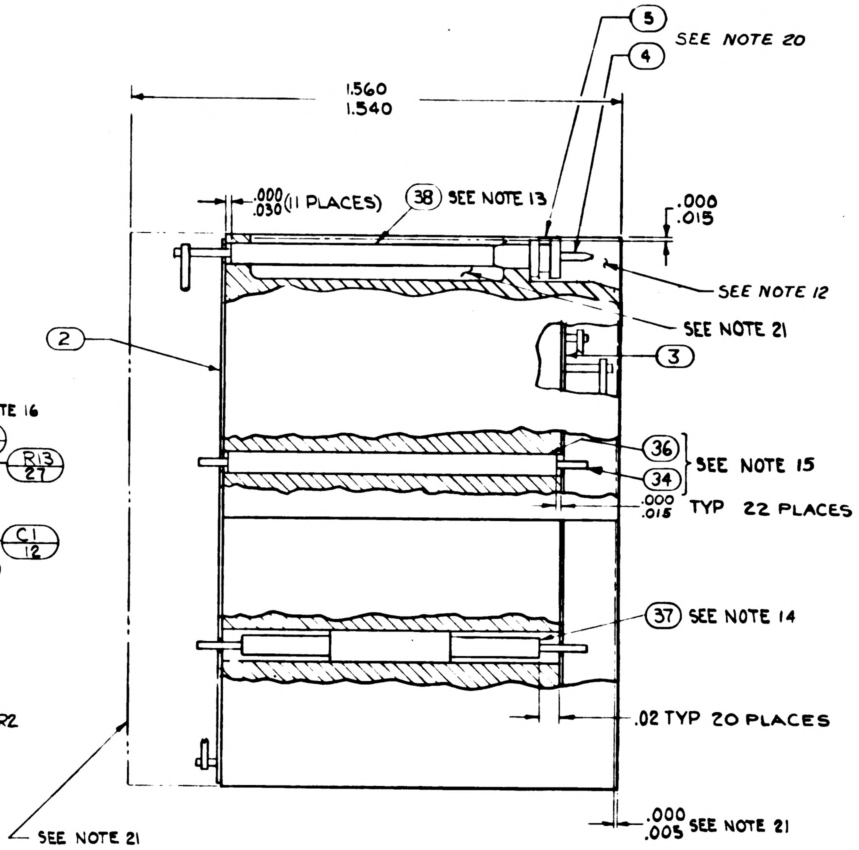
VIEW A-A
BEFORE ENCAPSULATION


39 SEE NOTE 10
.00 .10
CR2 46

PARTIAL SECTION C-C


38
35
Q4 30 SEE NOTE 2
Q5 30 SEE NOTE 2
R18 25
R6 19
R2 18
FT12
FT7
FT5
R19 45 SEE NOTE 19
R4 21
R1 17
R3 24
FT3
Q1 28
R7 16 SEE NOTE 16
R5 21
R13 27
R9 20
FT9
FT6
FT1
C1 12
C2 12
FT2
R8 20
CR2
B
C
E
1
2
3
4
5
T2 32
C5 40
R15 23
R17 26
R12 42
R10 22
FT10
FT11
R14 42
R16 23
R11 22
FT8
FT4
Q3 29

VIEW B-B
BEFORE ENCAPSULATION


5 SEE NOTE 20
4
1.560
1.540
.000 .030 (11 PLACES)
38 SEE NOTE 13
.000 .015
SEE NOTE 12
SEE NOTE 21
2
3
36
34
SEE NOTE 15
.000 .015 TYP 22 PLACES
37 SEE NOTE 14
.02 TYP 20 PLACES
SEE NOTE 21
.000 .005 SEE NOTE 21

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + − DECIMALS + − ANGLES + −	M I T INSTRUMENTATION LAB	MANNED SPACECRAFT CENTER HOUSTON TEXAS
DO NOT SCALE THIS DRAWING	DRAWN O.J. Olson DATE 14 AUG 64 CHECK Jakina 20 AUG 64 APPROVAL Sherwood APPROVAL [illegible]	AMPLIFIER 1% 3200 CPS MODULE ASSY
MATERIAL	NASA APPROVAL	CODE IDENT NO 80230 · SIZE E · 1007544
CONTRACT NAS9-497	MIT APPROVAL [illegible]	SCALE 5:1 · SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17302		12 [illegible] 65	[illegible]
B		REVISED PER TDRR 17610		[illegible] MAR 65	[illegible]
C		REVISED PER TDRR 17962		6 APR 65	JJJ
D		REVISED PER TDRR 18514		[illegible] 65	[illegible]
E		REVISED PER TDRR 19387		[illegible]	[illegible]
F		REVISED PER TDRR 19438		[illegible]	JWP
G		REVISED PER TDRR 19510		[illegible]	[illegible]

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER CONNECTIONS TO EMITTER (E), BASE(B) AND COLLECTOR(C) OF Q4 AND Q5 PER ND1002071.
3. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD H & CENTRALIZE
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. BOND ITEM 43 AND ITEM 44 TO ITEM 5 PER ND 1002237.
7. PROCURE PER PS 1007044.
8. MOUNTING TORQUE 12 INCH POUNDS ± 2 IN. LBS.
9. MARKING ON ITEMS 2 & 3 INDICATES THE FOLLOWING:
   BROKEN PATHS INDICATES INSULATION SLEEVING.

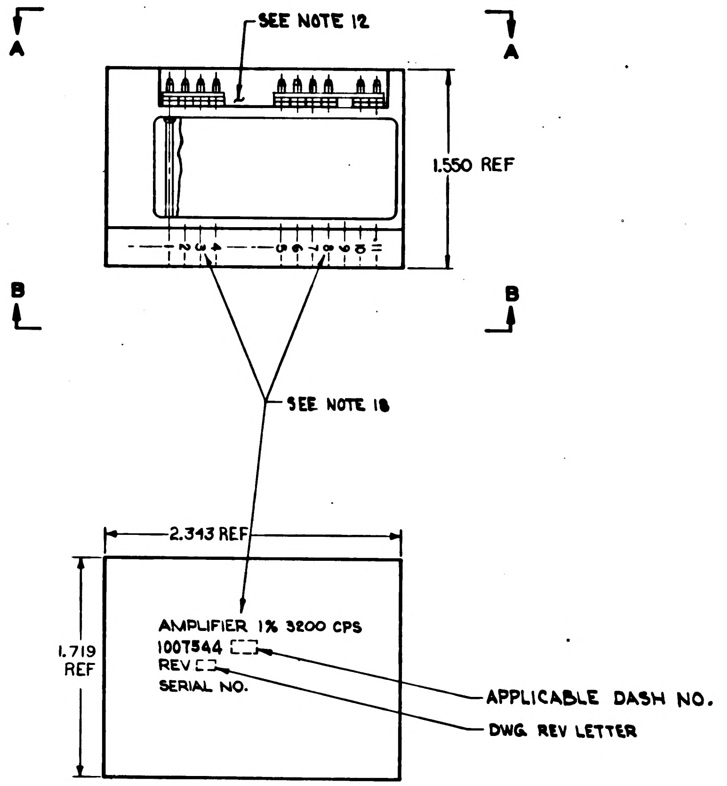
   K: CATHODE SIDE OF SEMICONDUCTOR DEVICE.
   FT( ): FEED THRU
   PLUS(+): POSITIVE SIDE OF CAPACITOR
   C: COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C( ): COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B( ): BASE
   E( ): EMITTER
10. BOND ITEM 39 TO ITEM 15. PER MIL-I-15126, CONDITION C-2/23/50 BEFORE ASSEMBLY TO ITEM 1.
11. UNLESS OTHERWISE SPECIFIED:
    A. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    B. WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
12. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR: R3, R4, R5, R10, R11, R12, R14, R15, R16 & R18.
15. TYPICAL SLEEVING & WIRE FOR FT1 THRU FT12.
16. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "A", VALUE IS IN OHMS.
17. FILL PER ND1002117
18. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
19. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "B", VALUE IS IN OHMS
20. ASSEMBLE PER ND1002136.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT-2.5, ½ WIDE
23. ~~BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~

NOTES: (CONTINUED)

24. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I~~
25. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
26. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002112 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140° FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE.
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE.



MARKING VIEW

TABLE "A" SELECTION CHART - FOR R7	
PART NUMBER	VALUE
1010364-337	2800
-345	3090
-351	3320
-359	3650
-365	3920
-371	4220
-377	4530
-381	4750
-387	5110
-391	5360
-395	5620
-397	5760
-401	6040
-405	6340
-409	6650
-411	6810
-415	7150
-419	7500
-421	7680
-425	8060

TABLE "B" SELECTION CHART- FOR R19	
PART NUMBER	VALUE
1006750-70	39K
-52	6.8K
-45	3.6K
-41	2.4K
-38	1.8K
-35	1.3K
-33	1.1K
-114	865
-113	785
-111	650
-110	590
-108	490
-107	450
-106	410

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			011				
					REF	1009529	SCHEMATIC DIAGRAM, ELECTRICAL
			1		46	1010829-3	DIODE
			1		45	SEE NOTE 19	RESISTOR
			1		44	1008540-7	GASKET, CONNECTOR-MINIATURE
			1		43	1008540-4	GASKET, CONNECTOR-MINIATURE
			2		42	1006750-17	RESISTOR, FIXED
			2		41	1000093-14	SCREW
			1		40	1010264-21	CAPACITOR, FIXED
			AR		39	SEE NOTE 22	INSULATION TAPE, ELECT
			AR		38	1006776-20	INSULATION, SLEEVING, ELECT
			AR		37	1006776-21	INSULATION, SLEEVING, ELECT
			AR		36	1006776-22	INSULATION, SLEEVING, ELECT
			AR		35	1006757-9	WIRE, ELEC
			AR		34	1006757-8	WIRE, ELEC
			AR		33	1006757-1	WIRE, ELEC
			1		32	1010337	TRANSFORMER
			1		31	1010324	TRANSFORMER
			1		30	1010269-2	TRANSISTOR
			1		29	1010345-2	TRANSISTOR
			1		28	1010431	TRANSISTOR
			1		27	1010278-80	RESISTOR
			1		26	1010278-8	
			1		25	1006750-73	
			1		24	1006750-49	
			2		23	1006750-12	
			2		22	1006750-26	
			2		21	1006750-1	
			2		20	1010364-385	
			1		19	1010364-335	
			1		18	1010364-381	
			1		17	1010364-251	
			1		16	SEE NOTE 16	RESISTOR
			~~1~~		15	~~1010265-3~~	~~SEMICONDUCTOR DEVICE, DIODE~~
			1		14	1010372-16	SEMICONDUCTOR DEVICE, DIODE
			2		13	1010264-29	CAPACITOR, FIXED
			2		12	1010410-9	CAPACITOR, FIXED
			2		11	1008025-2	INSULATOR, BUSHING
			2		10	1008021-1	BUSHING, INSULATOR
			2		9	1008071-4	WASHER, FLAT
			2		8	1008024-2	WASHER, INSULATOR
			2		7	1008024-1	WASHER, INSULATOR
			2		6	MS20341-10B	NUT
			10		5	1006775	INSULATOR
			10		4	1006782-5	CONTACT, WRAPOST-MALE
			1		3	1008302	INSULATOR
			1		2	1008301	INSULATOR
			1		1	1008300	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007511		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ANGLES
XXX ±.005 ±
XX ±.02
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

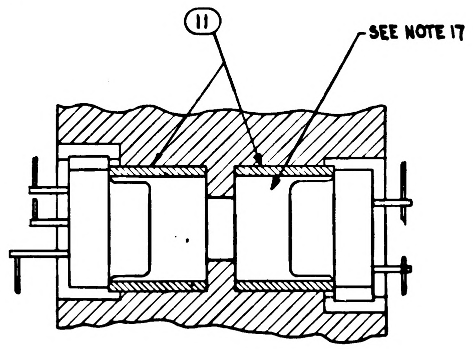
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN [illegible] DATE 14 AUG 64
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1% 3200 CPS
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007544
SCALE 2:1
SHEET 1 OF 2

SYM	ZONE	
A		REVISED PER
B		REVISED PER
C		REVISED PER T
D		REVISED PER T
E		REVISED PER T
F		REVISED PER T
G		REVISED PER T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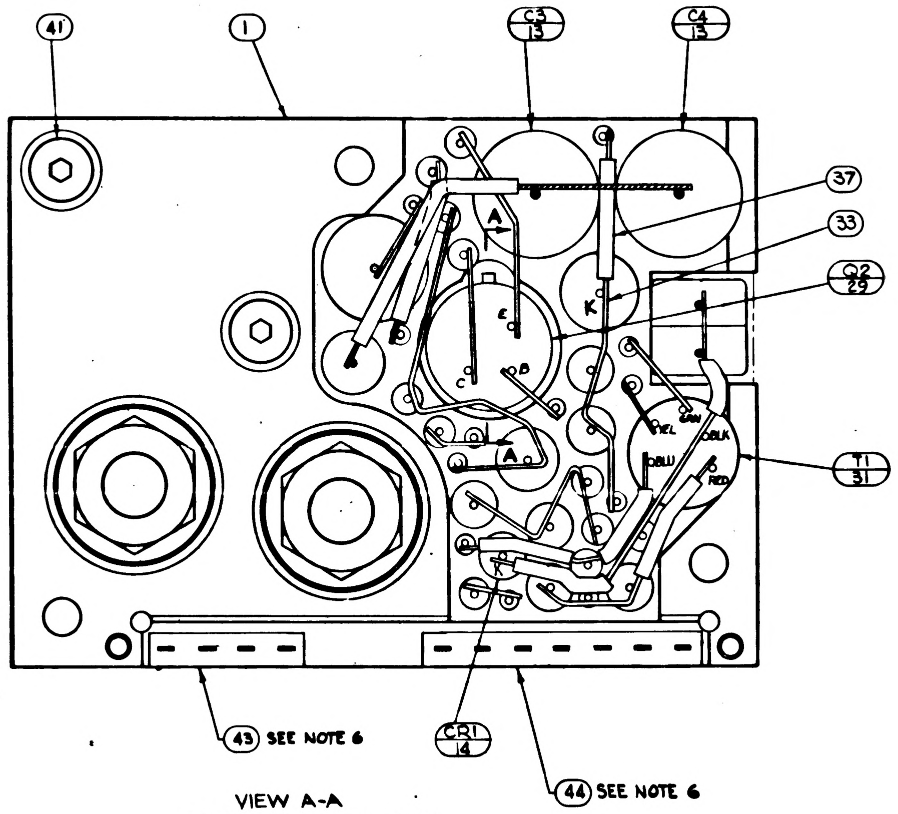
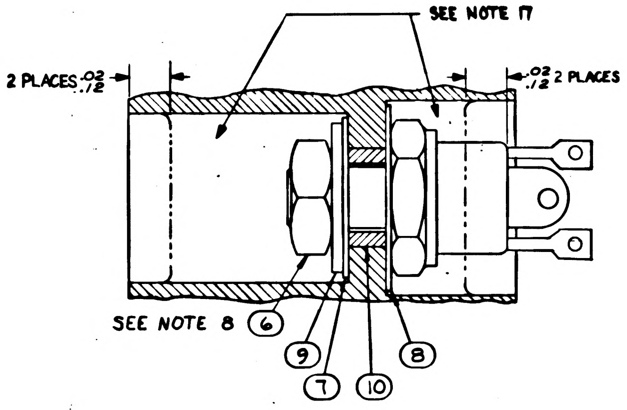
SEE NOTE 17

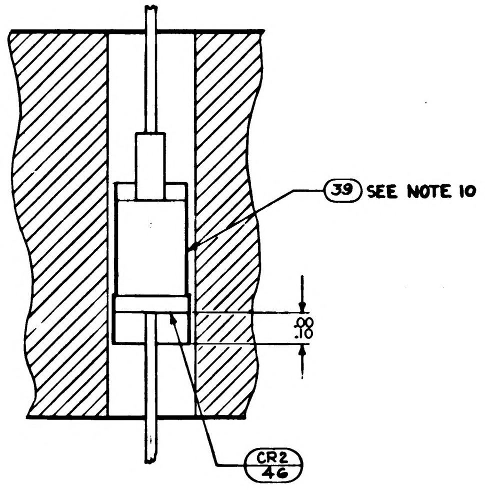
PARTIAL SECTION A-A


41
1
C3 13
C4 13
37
33
Q2 29
T1 31
43 SEE NOTE 6
CR1 14
44 SEE NOTE 6
A
K
E
B
C
YEL
GRN
BLK
BLU
RED

VIEW A-A
BEFORE ENCAPSULATION


SEE NOTE 17
2 PLACES .02 .12
.02 .12 2 PLACES
SEE NOTE 8
6
9
7
10
8

PARTIAL SECTION B-B
TYP 2 PLACES
SEE NOTE 8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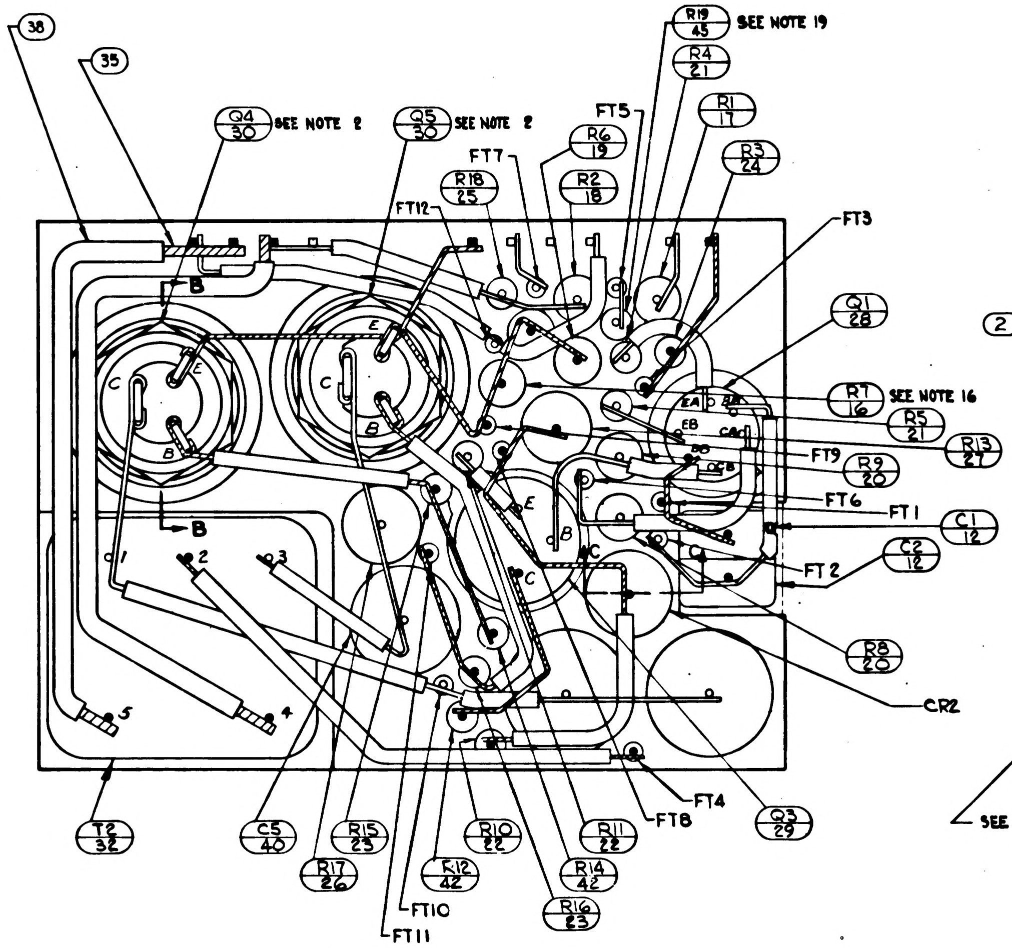
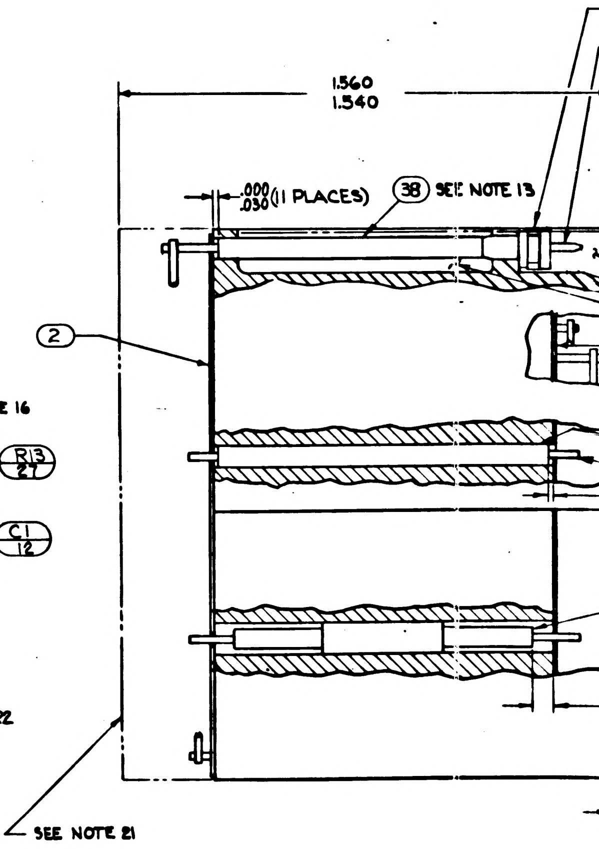
.00
.10
CR2 46

PARTIAL SECTION C-C


38
35
Q4 30 SEE NOTE 2
Q5 30 SEE NOTE 2
R19 45 SEE NOTE 19
R4 21
R1 17
R6 19
FT5
FT7
R18 25
R2 18
R3 24
FT12
FT3
Q1 28
R7 16 SEE NOTE 16
R5 21
R13 27
FT9
R9 20
FT6
FT1
C1 12
C2 12
FT2
R8 20
CR2
FT4
FT8
Q3 29
T2 32
C5 40
R15 23
R17 26
R12 42
R10 22
R11 22
R14 42
R16 23
FT10
FT11
B
1
2
3
4
5
C
E

VIEW B-B
BEFORE ENCAPSULATION


1.560
1.540
.000 .030 (I PLACES)
38 SEE NOTE 13
2
SEE NOTE 21

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN DATE 14 AUG 64
CHECKED 20 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

AMP

802

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER CONNECTIONS TO EMITTER (E), BASE(B) AND COLLECTOR(C) OF Q4 AND Q5 PER ND1002071.
3. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 *METHOD H & CENTRALIZE*
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. ~~BOND ITEM 43 AND ITEM 44 TO ITEM 5 PER ND1002237.~~
7. PROCURE PER PS 1007044.
8. MOUNTING TORQUE 12 INCH POUNDS ± 2 IN. LBS.
9. MARKING ON ITEMS 2 & 3 INDICATES THE FOLLOWING:
   BROKEN PATHS INDICATES INSULATION SLEEVING.

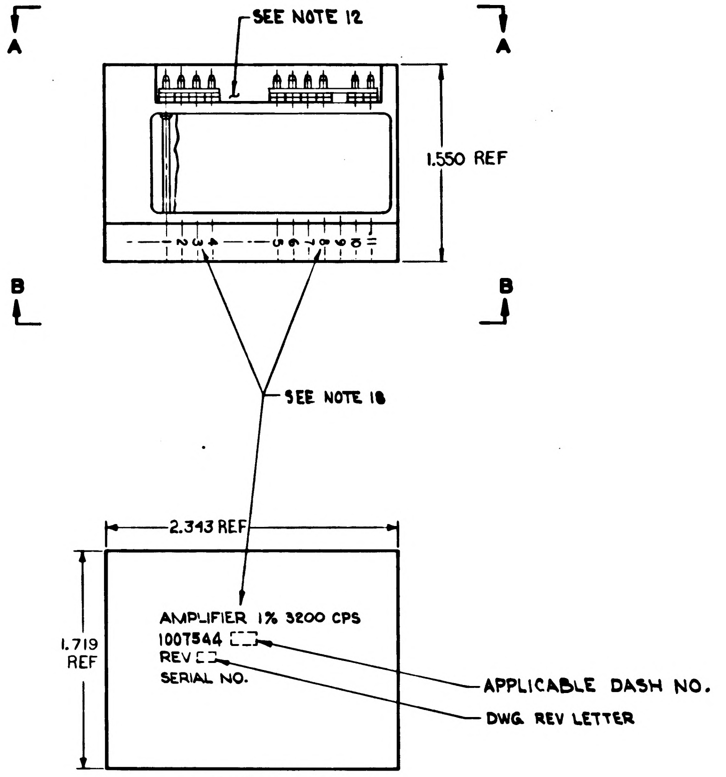
   K: CATHODE SIDE OF SEMICONDUCTOR DEVICE.
   FT( ): FEED THRU
   PLUS(+): POSITIVE SIDE OF CAPACITOR
   C: COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C( ): COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B( ): BASE
   E( ): EMITTER
10. BOND ITEM 39 TO ITEM 5. PER *MIL-I-15126, CONDITION C-2/23/50 BEFORE ASSEMBLY TO ITEM 1.*
11. UNLESS OTHERWISE SPECIFIED:
    A. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    B. WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
12. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
13. *AR DENOTES AS REQUIRED*
14. TYPICAL SLEEVING FOR: R3, R4, R5, R10, R11, R12, R14, R15, R16 & R18.
15. TYPICAL SLEEVING & WIRE FOR FT1 THRU FT12.
16. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "A", VALUE IS IN OHMS.
17. FILL PER ND1002117
18. MARK PIN NUMBERS .100 .060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140 .100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
19. *VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "B", VALUE IS IN OHMS*
20. *ASSEMBLE PER ND 1002136.*
21. *ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.*
22. *INSULATION TAPE PER MIL-I-15126 TYPE MFT-2.5, ½ WIDE*
23. ~~BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~

NOTES: (CONTINUED)

24. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I~~
25. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
26. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002112 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140° FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE.
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE.



MARKING VIEW

TABLE "A" SELECTION CHART FOR R7	
PART NUMBER	VALUE
1010364-337	2800
-345	3090
-351	3320
-359	3650
-365	3920
-371	4220
-377	4530
-381	4750
-387	5110
-391	5360
-395	5620
-397	5760
-401	6040
-405	6340
-409	6650
-411	6810
-415	7150
-419	7500
-421	7680
-425	8060

TABLE "B" SELECTION CHART FOR R19	
PART NUMBER	VALUE
1006750-70	39K
-52	6.8K
-45	3.6K
-41	2.4K
-38	1.8K
-35	1.3K
-33	1.1K
-114	865
-113	785
-111	650
-110	590
-108	490
-107	450
-106	410

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17302			
B		REVISED PER TDRR 17610			
C		REVISED PER TDRR 17962			JJJ
D		REVISED PER TDRR 18514			
E		REVISED PER TDRR 19387			WP
F		REVISED PER TDRR 19438			WP
G		*REVISED PER TDRR 19510*			
H		*REVISED PER TDRR 20143*			

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		REF	1009529	SCHEMATIC DIAGRAM, ELECTRICAL
1		46	1010829-3	DIODE
1		45	SEE NOTE 19	RESISTOR
1		44	1008540-7	GASKET, CONNECTOR-MINIATURE
1		43	1008540-4	GASKET, CONNECTOR-MINIATURE
2		42	1006750-17	RESISTOR, FIXED
2		41	1000093-14	SCREW
1		40	1010264-21	CAPACITOR, FIXED
AR		39	SEE NOTE 22	INSULATION TAPE, ELECT
AR		38	1006776-20	INSULATION, SLEEVING, ELECT
AR		37	1006776-21	INSULATION, SLEEVING, ELECT
AR		36	1006776-22	INSULATION, SLEEVING, ELECT
AR		35	1006757-9	WIRE, ELEC
AR		34	1006757-8	WIRE, ELEC
AR		33	1006757-1	WIRE, ELEC
1		32	1010337	TRANSFORMER
1		31	1010324	TRANSFORMER
1		30	1010269-2	TRANSISTOR
1		29	1010345-2	TRANSISTOR
1		28	1010431	TRANSISTOR
1		27	1010278-80	RESISTOR
1		26	1010278-8	
1		25	1006750-73	
1		24	1006750-49	
2		23	1006750-12	
2		22	1006750-26	
2		21	1006750-1	
2		20	1010364-385	
1		19	1010364-335	
1		18	1010364-381	
1		17	1010364-251	
1		16	SEE NOTE 16	RESISTOR
~~1~~		15	~~1010265-3~~	~~SEMICONDUCTOR DEVICE, DIODE~~
1		14	1010372-16	SEMICONDUCTOR DEVICE, DIODE
2		13	1010264-29	CAPACITOR, FIXED
2		12	1010410-9	CAPACITOR, FIXED
2		11	1008025-2	INSULATOR, BUSHING
2		10	1008021-1	BUSHING, INSULATOR
2		9	1008071-4	WASHER, FLAT
2		8	1008024-2	WASHER, INSULATOR
2		7	1008024-1	WASHER, INSULATOR
2		6	MS20341-10B	NUT
10		5	1006775	INSULATOR
10		4	1006782-5	CONTACT, WRAPOST-MALE
1		3	1008302	INSULATOR
1		2	1008301	INSULATOR
1		1	1008300	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	XXX ±.005	+ –
–	XX ±.02	– –

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT
DRAWN R J Wilson DATE 14 AUG 64
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

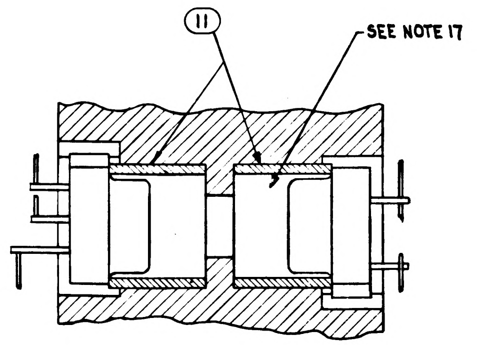
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1% 3200 CPS
MODULE ASSY

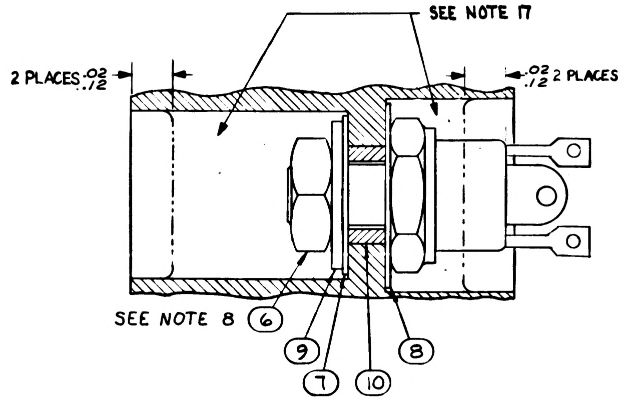
CODE IDENT NO. 80230
SIZE E
1007544
SCALE 2:1
SHEET 1 OF 2

REVISIONS

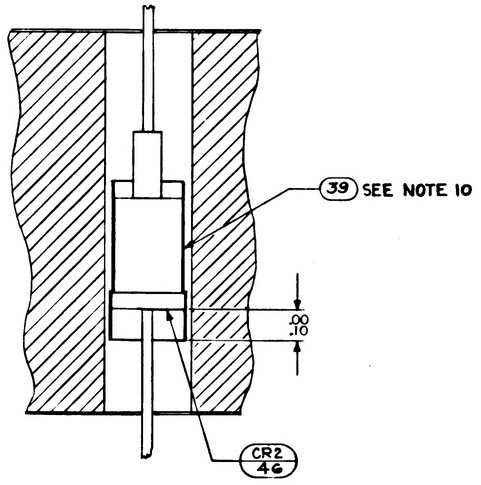
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17302		[illegible] 65	[illegible]
B		REVISED PER TDRR 17610		24 MAR 65	[illegible]
C		REVISED PER TDRR 17962		6 APR 65	[illegible]
D		REVISED PER TDRR 18514		27 APR 65	[illegible]
E		REVISED PER TDRR 19387		[illegible] 65	[illegible]
F		REVISED PER TDRR 19438		[illegible] JUL 65	[illegible]
G		REVISED PER TDRR 19510		[illegible] JUN 65	[illegible]
H		REVISED PER TDRR 20143		[illegible] 65	[illegible]


11
SEE NOTE 17

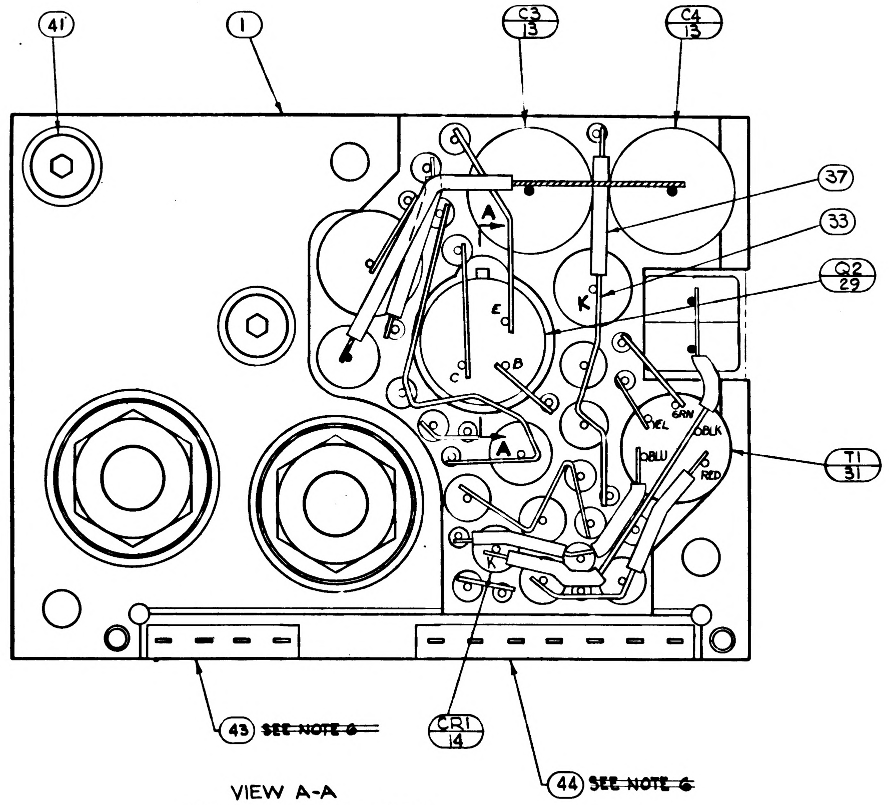
PARTIAL SECTION A-A


SEE NOTE 17
2 PLACES .02 .12
.02 .12 2 PLACES
SEE NOTE 8
6
9
7
10
8

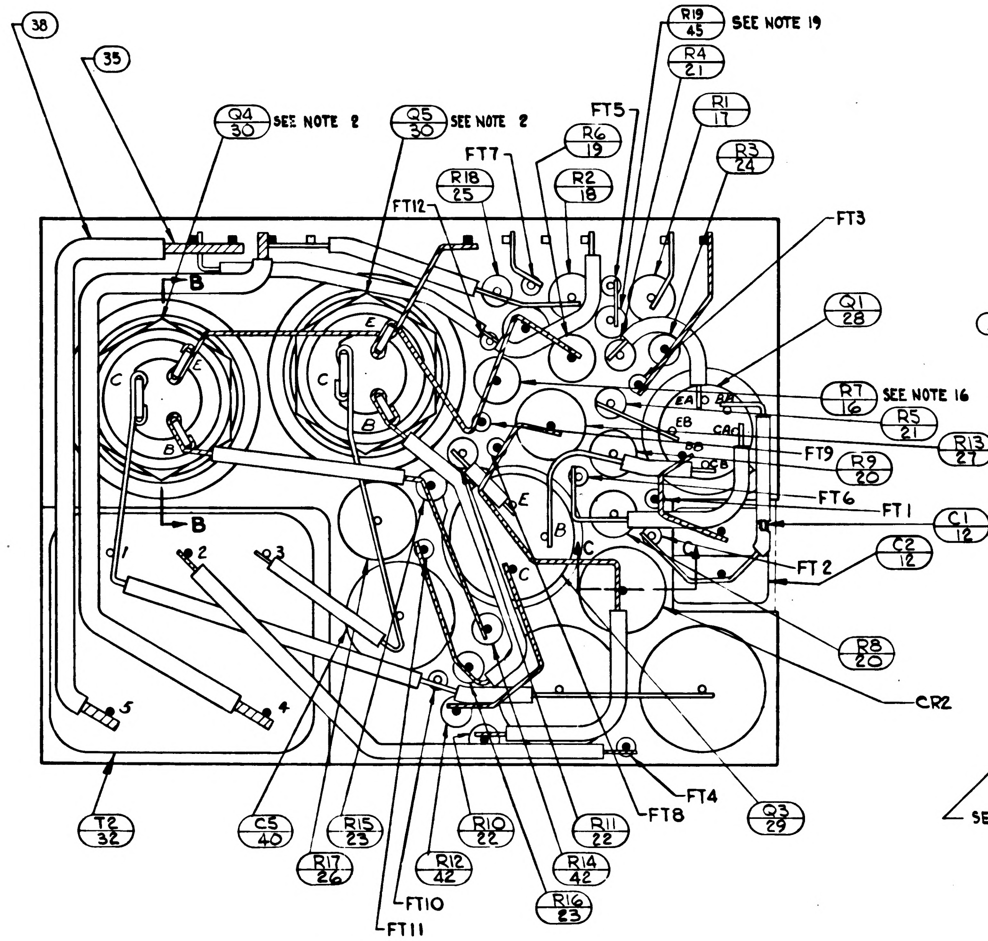
PARTIAL SECTION B-B
TYP 2 PLACES
SEE NOTE 8


39 SEE NOTE 10
.00 .10
CR2 46

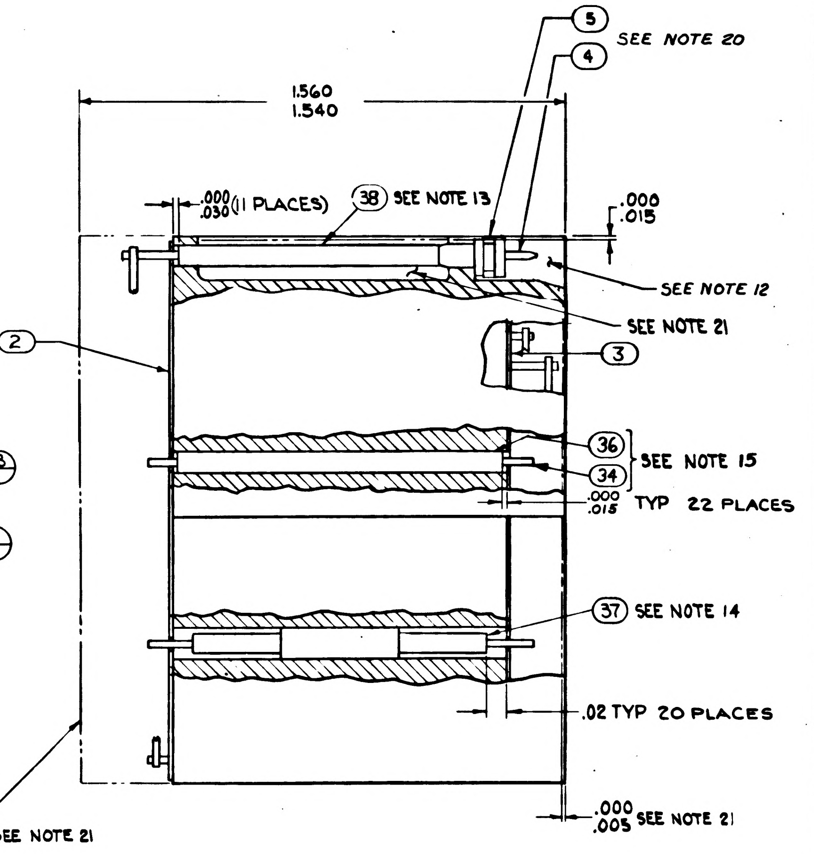
PARTIAL SECTION C-C


41
1
C3 13
C4 13
37
33
Q2 29
T1 31
A
K
E
B
C
YEL
GRN
BLK
BLU
RED
43 ~~SEE NOTE 6~~
CR1 14
44 ~~SEE NOTE 6~~

VIEW A-A
BEFORE ENCAPSULATION


38
35
Q4 30 SEE NOTE 2
Q5 30 SEE NOTE 2
R19 45 SEE NOTE 19
R4 21
FT5
R1 17
R6 19
FT7
R18 25
R2 18
R3 24
FT12
FT3
Q1 28
B
R7 16 SEE NOTE 16
R5 21
R13 27
FT9
R9 20
FT6
FT1
C1 12
C2 12
FT2
R8 20
CR2
E
C
B
1
2
3
4
5
T2 32
C5 40
R15 23
R17 26
R12 42
R10 22
R11 22
R14 42
R16 23
FT10
FT11
FT4
FT8
Q3 29

VIEW B-B
BEFORE ENCAPSULATION


5
4
SEE NOTE 20
1.560
1.540
.000 .030 (11 PLACES)
38 SEE NOTE 13
.000 .015
SEE NOTE 12
SEE NOTE 21
3
2
36
34
SEE NOTE 15
.000 .015 TYP 22 PLACES
37 SEE NOTE 14
.02 TYP 20 PLACES
.000 .005 SEE NOTE 21
SEE NOTE 21

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
FRACTIONS ± DECIMALS ± ANGLES ±	DRAWN [illegible] DATE 14 AUG 64 CHECKED [illegible] 20 AUG 64 APPROVAL [illegible] APPROVAL [illegible]	AMPLIFIER 1% 3200 CPS MODULE ASSY.
DO NOT SCALE THIS DRAWING		
MATERIAL	NASA APPROVAL [illegible]	CODE IDENT NO. 80230 · SIZE E · 1007544
CONTRACT NAS9-497	MIT APPROVAL [illegible] 4 Nov	SCALE 5:1 · SHEET 2 OF 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER CONNECTIONS TO EMITTER (E), BASE(B) AND COLLECTOR(C) OF Q4 AND Q5 PER ND1002071.
3. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD H & CENTRALIZE
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. ~~BOND ITEM 43 AND ITEM 44 TO ITEM 5 PER ND 1002237.~~
7. PROCURE PER PS 1007044.
8. MOUNTING TORQUE 12 INCH POUNDS ± 2 IN. LBS.
9. MARKING ON ITEMS 2 & 3 INDICATES THE FOLLOWING:
   BROKEN PATHS INDICATES INSULATION SLEEVING.

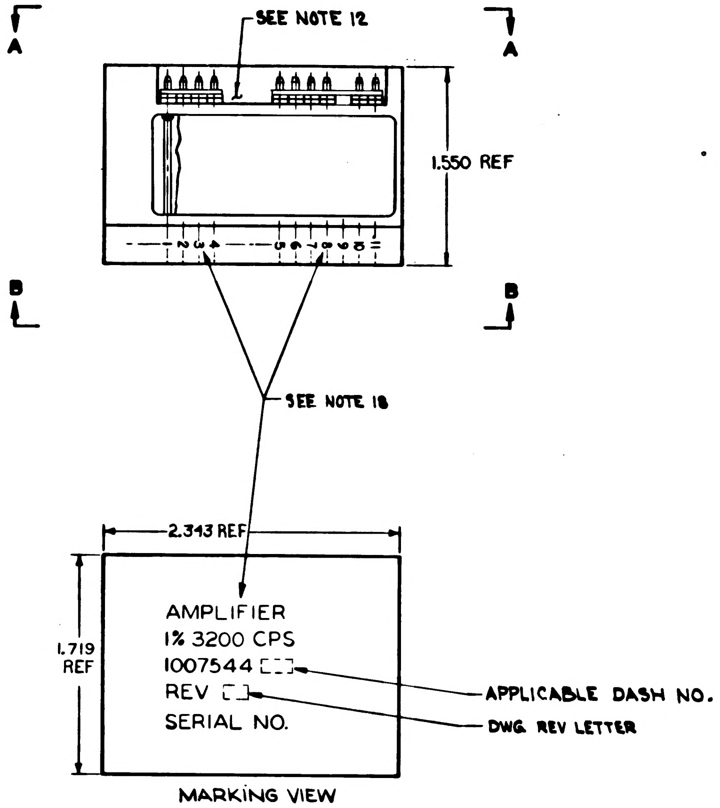
   K: CATHODE SIDE OF SEMICONDUCTOR DEVICE.
   FT( ): FEED THRU
   PLUS(+): POSITIVE SIDE OF CAPACITOR
   C: COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C( ): COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B( ): BASE
   E( ): EMITTER
10. BOND ITEM 39 TO ITEM 5. PER MIL-I-15126, CONDITION C-2/23/50 BEFORE ASSEMBLY TO ITEM 1.
11. UNLESS OTHERWISE SPECIFIED:
    A. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    B. WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
12. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR: R3, R4, R5, R10, R11, R12, R14, R15, R16 & R18.
15. TYPICAL SLEEVING & WIRE FOR FT1 THRU FT12.
16. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "A", VALUE IS IN OHMS.
17. FILL PER ND1002117
18. MARK PIN NUMBERS ~~.060~~ .100 HIGH (WHITE) AND ALL OTHER CHARACTERS ~~.100~~ .140 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
19. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "B", VALUE IS IN OHMS
20. ASSEMBLE PER ND1002136.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT-2.5, ½ WIDE
23. ~~BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~

NOTES: (CONTINUED)

24. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I~~
25. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
26. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002112 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140° FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE.
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE.



MARKING VIEW

TABLE "A" SELECTION CHART - FOR R7	
PART NUMBER	VALUE
1010364-337	2800
-345	3090
-351	3320
-359	3650
-365	3920
-371	4220
-377	4530
-381	4750
-387	5110
-391	5360
-395	5620
-397	5760
-401	6040
-405	6340
-409	6650
-411	6810
-415	7150
-419	7500
-421	7680
-425	8060

TABLE "B" SELECTION CHART - FOR R19	
PART NUMBER	VALUE
1006750-70	39K
-52	6.8K
-45	3.6K
-41	2.4K
-38	1.8K
-35	1.3K
-33	1.1K
-114	865
-113	785
-111	650
-110	590
-108	490
-107	450
-106	410

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17302		[illegible]	[illegible]
B		REVISED PER TDRR 17610		[illegible]	[illegible]
C		REVISED PER TDRR 17962		[illegible]	[illegible]
D		REVISED PER TDRR 18514		26 APR	[illegible]
E		REVISED PER TDRR 19387		[illegible]	[illegible]
F		REVISED PER TDRR 19438		[illegible]	[illegible]
G		REVISED PER TDRR 19510		[illegible]	[illegible]
H		REVISED PER TDRR 20143		[illegible]	[illegible]
J		REVISED PER TDRR 21114		[illegible]	[illegible]

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		REF	1009529	SCHEMATIC DIAGRAM, ELECTRICAL
1		46	1010829-3	DIODE
1		45	SEE NOTE 19	RESISTOR
1		44	1008540-7	GASKET, CONNECTOR-MINIATURE
1		43	1008540-4	GASKET, CONNECTOR-MINIATURE
2		42	1006750-17	RESISTOR, FIXED
2		41	1000093-14	SCREW
1		40	1010264-21	CAPACITOR, FIXED
AR		39	SEE NOTE 22	INSULATION TAPE, ELECT
AR		38	1006776-20	INSULATION, SLEEVING, ELECT
AR		37	1006776-21	INSULATION, SLEEVING, ELECT
AR		36	1006776-22	INSULATION, SLEEVING, ELECT
AR		35	1006757-9	WIRE, ELEC
AR		34	1006757-8	WIRE, ELEC
AR		33	1006757-1	WIRE, ELEC
1		32	1010337	TRANSFORMER
1		31	1010324	TRANSFORMER
1		30	1010269-2	TRANSISTOR
1		29	1010345-2	TRANSISTOR
1		28	1010431	TRANSISTOR
1		27	1010278-80	RESISTOR
1		26	1010278-8	
1		25	1006750-73	
1		24	1006750-49	
2		23	1006750-12	
2		22	1006750-26	
2		21	1006750-1	
2		20	1010364-385	
1		19	1010364-335	
1		18	1010364-381	
1		17	1010364-251	
1		16	SEE NOTE 16	RESISTOR
~~1~~		15	~~1010265-3~~	~~SEMICONDUCTOR DEVICE, DIODE~~
1		14	1010372-16	SEMICONDUCTOR DEVICE, DIODE
2		13	1010264-29	CAPACITOR, FIXED
2		12	1010410-9	CAPACITOR, FIXED
2		11	1008025-2	INSULATOR, BUSHING
2		10	1008021-1	BUSHING, INSULATOR
2		9	1008071-4	WASHER, FLAT
2		8	1008024-2	WASHER, INSULATOR
2		7	1008024-1	WASHER, INSULATOR
2		6	MS20341-10B	NUT
10		5	1006775	INSULATOR
10		4	1006782-5	CONTACT, WRAPOST-MALE
1		3	1008302	INSULATOR
1		2	1008301	INSULATOR
1		1	1008300	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO
1007511		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + - DECIMALS XXX ±.005 XX ±.02 ANGLES + - - -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
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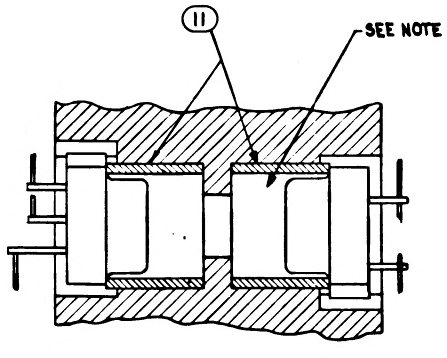
HOUSTON, TEXAS

AMPLIFIER 1% 3200 CPS
MODULE ASSY

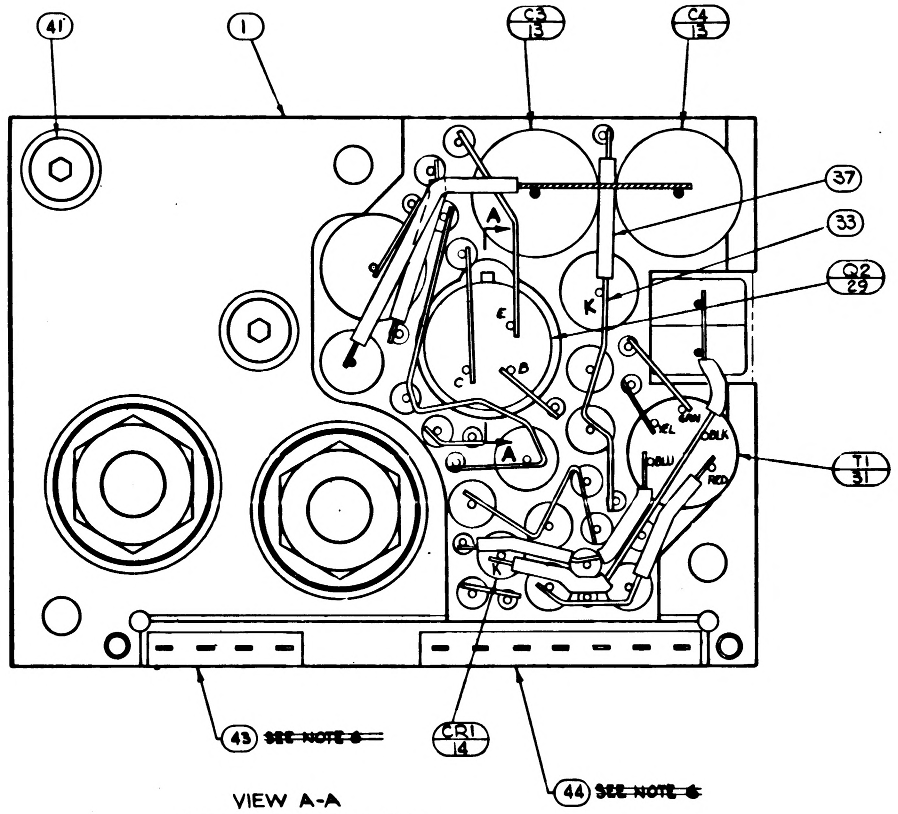
CODE IDENT NO. 80230
SIZE E
1007544
SCALE 2:1
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17802		12 MAR 65	EM
B		REVISED PER TDRR 17610		24 MAR 65	MTO
C		REVISED PER TDRR 17962		6 APR 65	JJJ
D		REVISED PER TDRR 18514		27 APR 65	R.r.
E		REVISED PER TDRR 19387		11 JUN 65	[illegible]
F		REVISED PER TDRR 19438		11 JUN 65	[illegible]
G		REVISED PER TDRR 19510		[illegible] 65	[illegible]
H		REVISED PER TDRR 20143		[illegible] 65	[illegible]
J		REVISION STATUS CHANGED		2 JUL 65	RWH



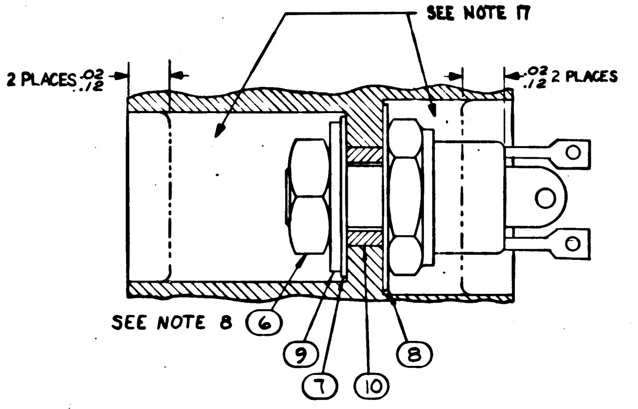
11
SEE NOTE 17

PARTIAL SECTION A-A



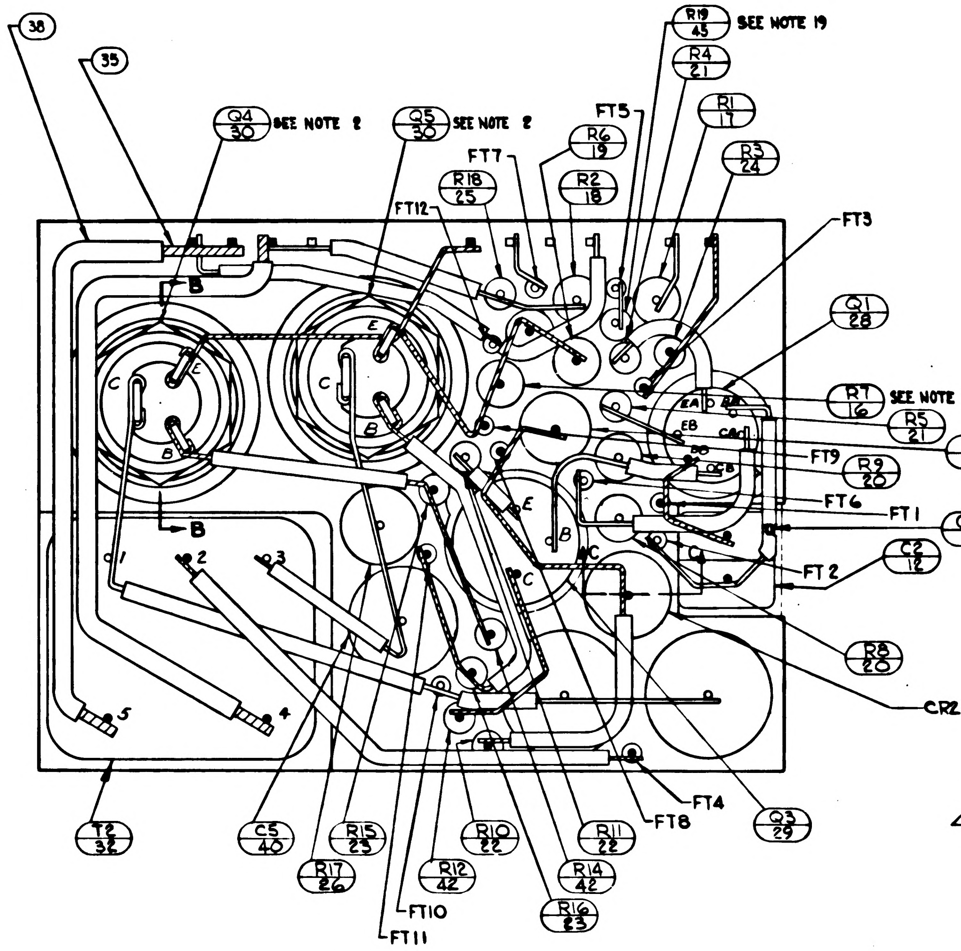
41
1
C3 13
C4 13
37
33
Q2 29
A
K
E
C
B
A
T1 31
YEL
GRN
BLK
BLU
RED
K
43 ~~SEE NOTE 6~~
CR1 14
44 ~~SEE NOTE 6~~

VIEW A-A
BEFORE ENCAPSULATION



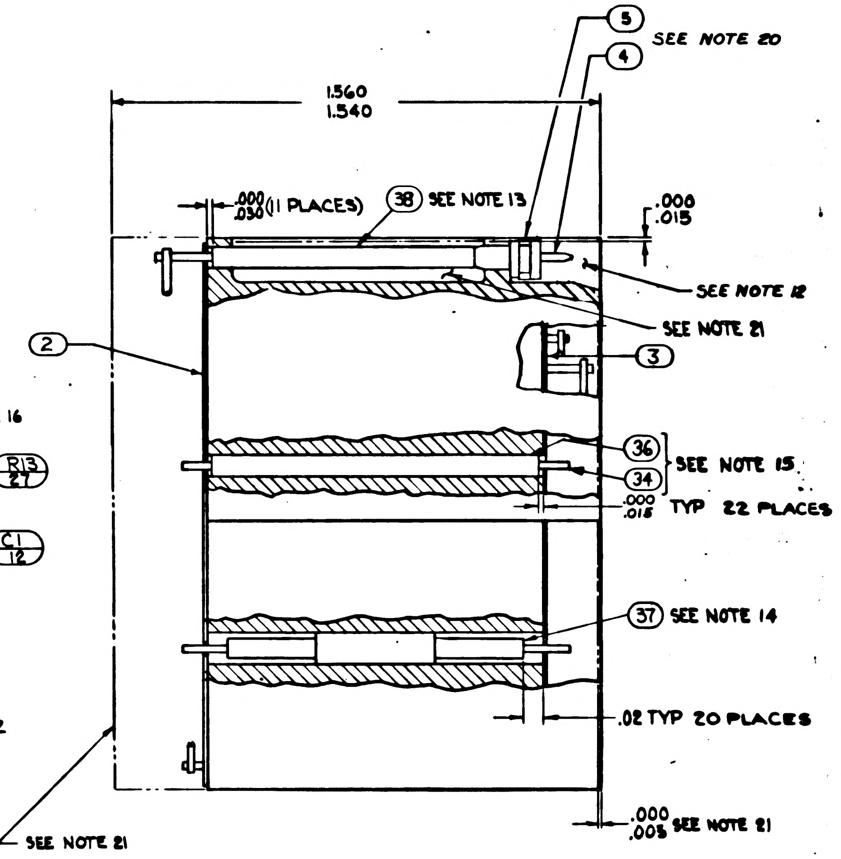
SEE NOTE 17
2 PLACES .02 .12
.02 .12 2 PLACES
SEE NOTE 8
6
9
7
10
8

PARTIAL SECTION B-B
TYP 2 PLACES
SEE NOTE 8

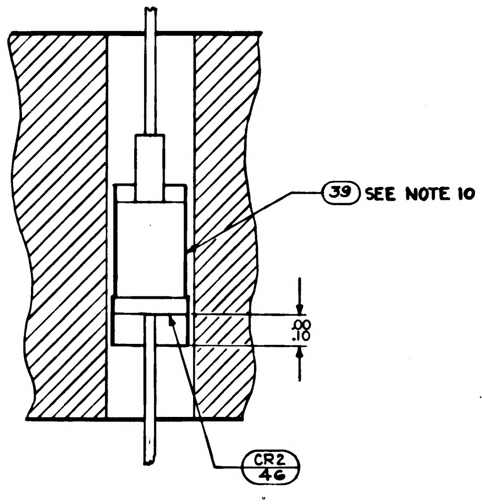


38
35
Q4 30 SEE NOTE 2
Q5 30 SEE NOTE 2
R19 45 SEE NOTE 19
R4 21
FT5
R1 17
R6 19
FT7
R3 24
R18 25
R2 18
FT12
FT3
Q1 28
R7 16 SEE NOTE 16
R5 21
R13 27
FT9
R9 20
FT6
FT1
C1 12
C2 12
FT 2
R8 20
CR2
B
B
C
E
B
C
E
B
EA
BA
EB
CA
BB
CB
E
B
C
C
1
2
3
4
5
T2 32
C5 40
R15 23
R17 26
R12 42
R10 22
R11 22
R14 42
R16 23
FT10
FT11
FT4
FT8
Q3 29

VIEW B-B
BEFORE ENCAPSULATION



5
4
SEE NOTE 20
1.560
1.540
.000 .030 (11 PLACES)
38 SEE NOTE 13
.000 .015
SEE NOTE 12
SEE NOTE 21
2
3
36
34
SEE NOTE 15
.000 .015 TYP 22 PLACES
37 SEE NOTE 14
.02 TYP 20 PLACES
SEE NOTE 21
.000 .005 SEE NOTE 21



39 SEE NOTE 10
.00 .10
CR2 46

PARTIAL SECTION C-C

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ \+ \+
- \- \-
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

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APPROVAL 4-2-64
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MODULE ASSY.

CODE IDENT NO. 80230
SIZE E
1007544
SCALE 5:1
SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17302		[illegible]	[illegible]
B		REVISED PER TDRR 17610		[illegible]	[illegible]
C		REVISED PER TDRR 17962		[illegible]	[illegible]
D		REVISED PER TDRR 18514		[illegible]	[illegible]
E		REVISED PER TDRR 19387		[illegible]	[illegible]
F		REVISED PER TDRR 19438		[illegible]	[illegible]
G		REVISED PER TDRR 19510		[illegible]	[illegible]
H		REVISED PER TDRR 20143		[illegible]	[illegible]
J		REVISED PER TDRR 21114		[illegible]	[illegible]
K		REVISED PER TDRR 2298.		[illegible]	[illegible]

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER CONNECTIONS TO EMITTER (E), BASE(B) AND COLLECTOR(C) OF Q4 AND Q5 PER ND1002071.
3. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009, METHOD J & CENTRALIZE
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. ~~BOND ITEM 43 AND ITEM 44 TO ITEM 5 PER ND1002237.~~
7. PROCURE PER PS 1007044.
8. MOUNTING TORQUE 12 INCH POUNDS ± 2 IN. LBS.
9. MARKING ON ITEMS 2 & 3 INDICATES THE FOLLOWING: BROKEN PATHS INDICATES INSULATION SLEEVING.

K: CATHODE SIDE OF SEMICONDUCTOR DEVICE.
FT( ): FEED THRU
PLUS(+): POSITIVE SIDE OF CAPACITOR
C: COLLECTOR LEAD OF TRANSISTOR
B: BASE
E: EMITTER
C( ): COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
B( ): BASE
E( ): EMITTER

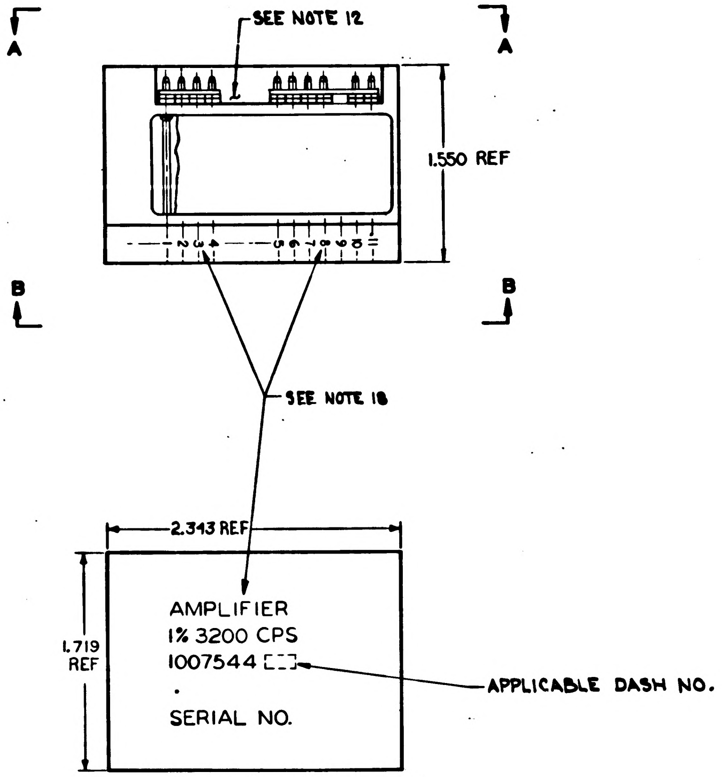
10. BOND ITEM 39 TO ITEM 15. PER MIL-I-15126, CONDITION C-2/23/50 BEFORE ASSEMBLY TO ITEM 1.
11. UNLESS OTHERWISE SPECIFIED:
    - A. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    - B. WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
12. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR: R3, R4, R5, R10, R11, R12, R14, R15, R16 & R18.
15. TYPICAL SLEEVING & WIRE FOR FT1 THRU FT12.
16. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "A", VALUE IS IN OHMS.
17. FILL PER ND1002117
18. MARK PIN NUMBERS $\overset{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\overset{.140}{.100}$ HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
19. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "B", VALUE IS IN OHMS
20. ASSEMBLE PER ND1002136.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT-2.5, ½ WIDE
23. ~~BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~

NOTES: (CONTINUED)

24. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I~~
25. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
26. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE.
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03±.03 OF EXTERNAL EDGE.



MARKING VIEW

TABLE "A" SELECTION CHART FOR R7	
PART NUMBER	VALUE
1010364-337	2800
-345	3090
-351	3320
-359	3650
-365	3920
-371	4220
-377	4530
-381	4750
-387	5110
-391	5360
-395	5620
-397	5760
-401	6040
-405	6340
-409	6650
-411	6810
-415	7150
-419	7500
-421	7680
-425	8060

TABLE "B" SELECTION CHART- FOR R19	
PART NUMBER	VALUE
1006750-70	39K
-52	6.8K
-45	3.6K
-41	2.4K
-38	1.8K
-35	1.3K
-33	1.1K
-114	865
-113	785
-111	650
-110	590
-108	490
-107	450
-106	410

					REF	1009529	SCHEMATIC DIAGRAM, ELECTRICAL
			1		46	1010829-3	DIODE
			1		45	SEE NOTE 19	RESISTOR
			1		44	1008540-7	GASKET, CONNECTOR-MINIATURE
			1		43	1008540-4	GASKET, CONNECTOR-MINIATURE
			2		42	1006750-17	RESISTOR, FIXED
			2		41	1000093-14	SCREW
			1		40	1010264-21	CAPACITOR, FIXED
			AR		39	SEE NOTE 22	INSULATION TAPE, ELECT
			AR		38	1006776-20	INSULATION, SLEEVING, ELECT
			AR		37	1006776-21	INSULATION, SLEEVING, ELECT
			AR		36	1006776-22	INSULATION, SLEEVING, ELECT
			AR		35	1006757-9	WIRE, ELEC
			AR		34	1006757-8	WIRE, ELEC
			AR		33	1006757-1	WIRE, ELEC
			1		32	1010337	TRANSFORMER
			1		31	1010324	TRANSFORMER
			1		30	1010269-2	TRANSISTOR
			1		29	1010345-2	TRANSISTOR
			1		28	1010431	TRANSISTOR
			1		27	1010278-80	RESISTOR
			1		26	1010278-8	
			1		25	1006750-73	
			1		24	1006750-49	
			2		23	1006750-12	
			2		22	1006750-26	
			2		21	1006750-1	
			2		20	1010364-385	
			1		19	1010364-335	
			1		18	1010364-381	
			1		17	1010364-251	
			1		16	SEE NOTE 16	RESISTOR
			~~1~~		15	~~1010265-3~~	~~SEMICONDUCTOR DEVICE, DIODE~~
			1		14	1010372-16	SEMICONDUCTOR DEVICE, DIODE
			2		13	1010264-29	CAPACITOR, FIXED
			2		12	1010410-9	CAPACITOR, FIXED
			2		11	1008025-2	INSULATOR, BUSHING
			2		10	1008021-1	BUSHING, INSULATOR
			2		9	1008071-4	WASHER, FLAT
			2		8	1008024-2	WASHER, INSULATOR
			2		7	1008024-1	WASHER, INSULATOR
			2		6	MS20341-10B	NUT
			10		5	1006775	INSULATOR
			10		4	1006782-5	CONTACT, WRAPOST-MALE
			1		3	1008302	INSULATOR
			1		2	1008301	INSULATOR
			1		1	1008300	HEATSINK
			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	XXX ±.005	+ −
−	XX ±.02	− −

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

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CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

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1007544
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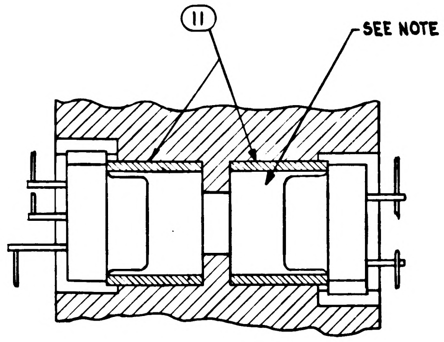
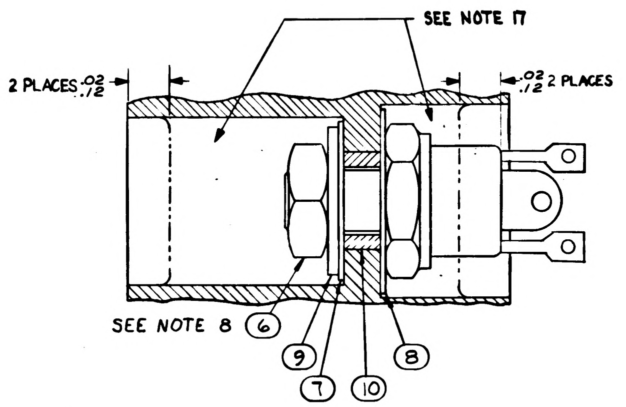
SHEET 1 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17302		12 MAR 65	
B		REVISED PER TDRR 17610		24 MAR 65	
C		REVISED PER TDRR 17962		6 APR 65	
D		REVISED PER TDRR 18514		27 APR 65	
E		REVISED PER TDRR 19387		[illegible] 65	
F		REVISED PER TDRR 19438		11 JUN 65	
G		REVISED PER TDRR 19510		[illegible] 65	
H		REVISED PER TDRR 20143		[illegible] 65	
J		REVISION STATUS CHANGED		[illegible] JUL 65	
K		REVISED PER TDRR 22981		[illegible] OCT 65	



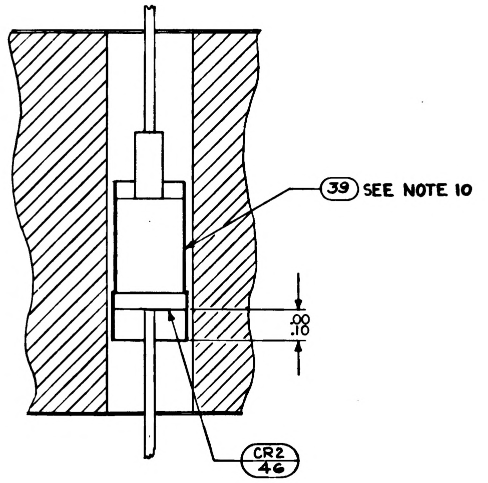
11
SEE NOTE 17

PARTIAL SECTION A-A



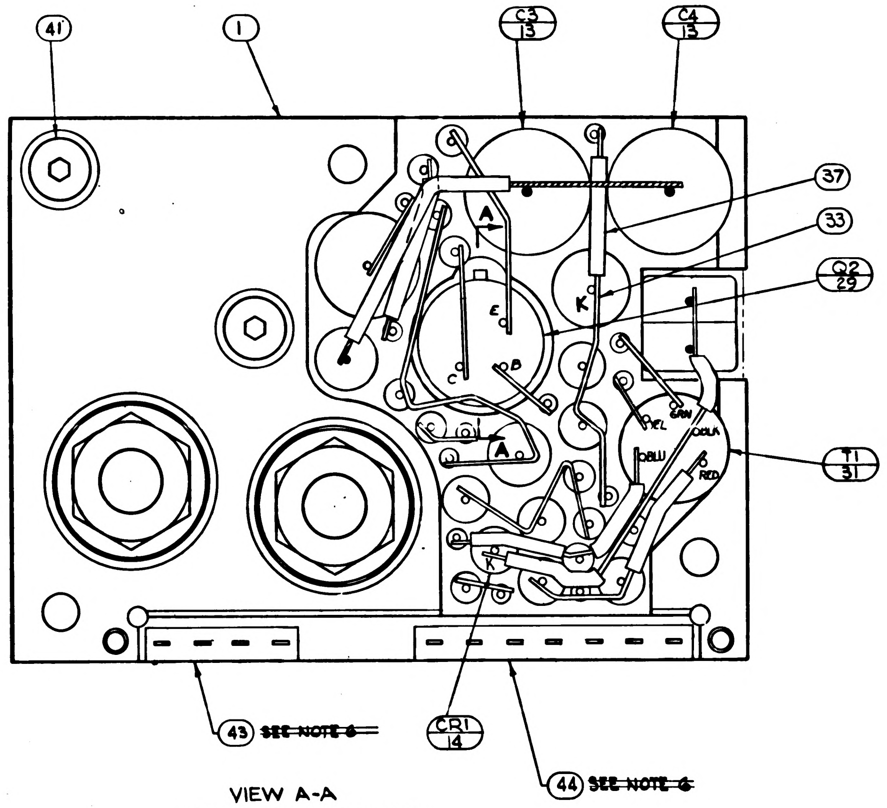
SEE NOTE 17
2 PLACES .02 .12
.02 .12 2 PLACES
SEE NOTE 8
6
9
7
10
8

PARTIAL SECTION B-B
TYP 2 PLACES
SEE NOTE 8



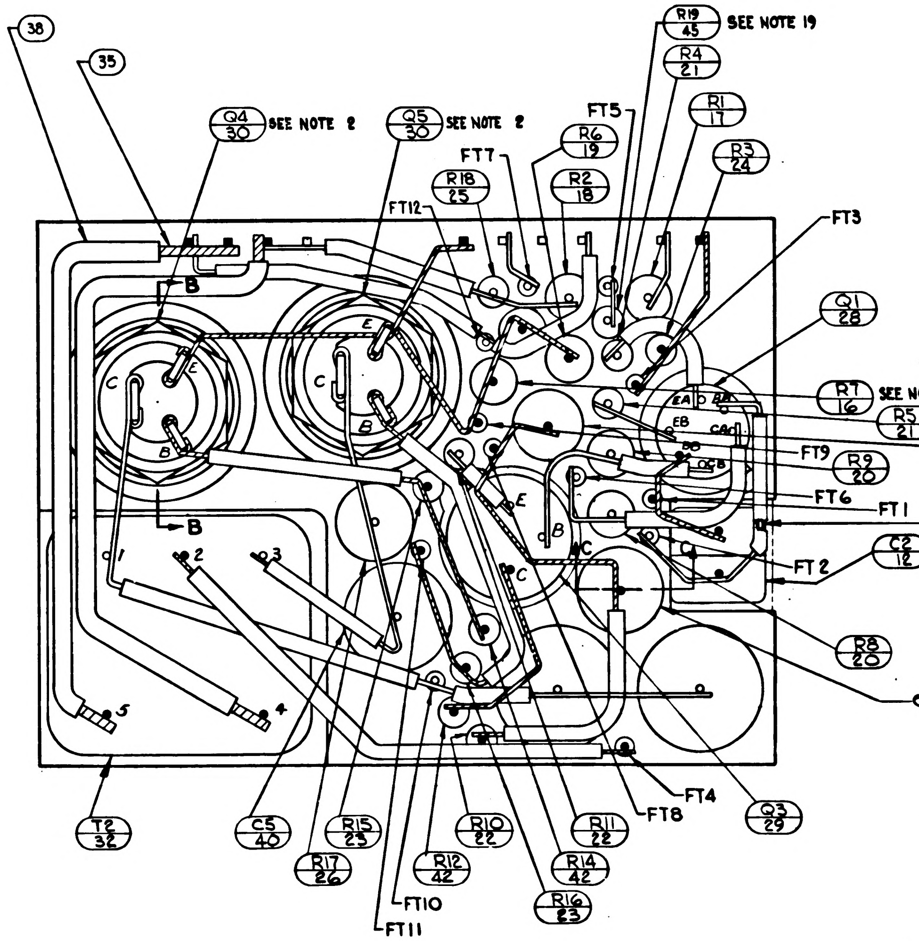
39 SEE NOTE 10
.00 .10
CR2 46

PARTIAL SECTION C-C



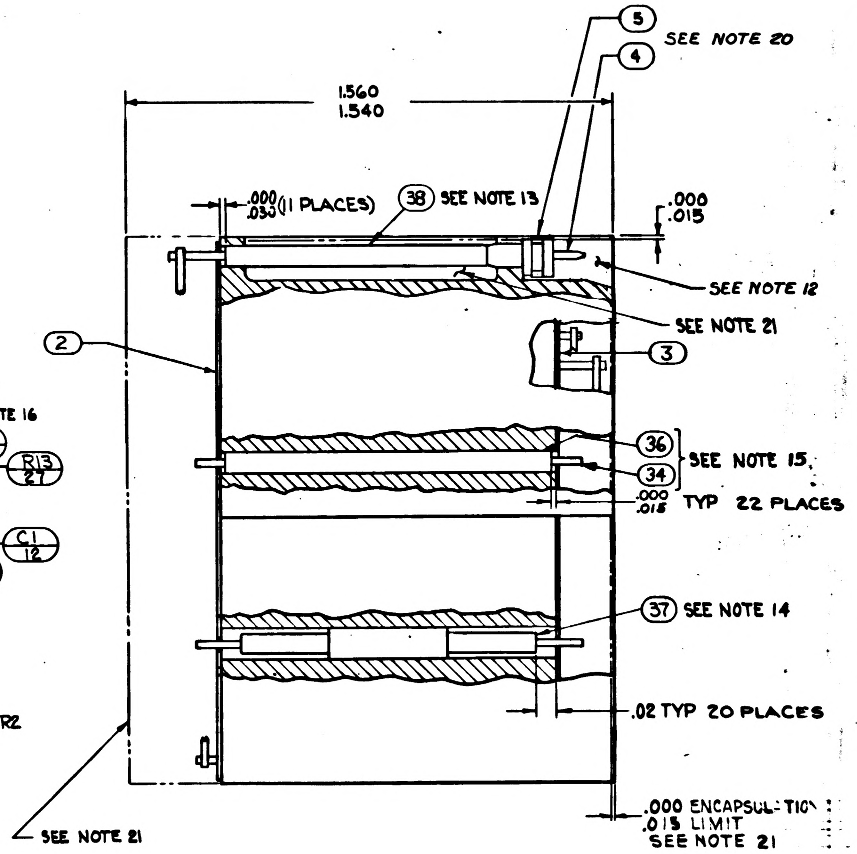
41
1
C3 13
C4 13
37
33
Q2 29
T1 31
A
K
E
B
C
YEL
GRN
ORN
BLU
RED
43 ~~SEE NOTE 6~~
CR1 14
44 ~~SEE NOTE 6~~

VIEW A-A
BEFORE ENCAPSULATION



38
35
Q4 30 SEE NOTE 2
Q5 30 SEE NOTE 2
R19 45 SEE NOTE 19
R4 21
R1 17
R3 24
R6 19
R2 18
R18 25
FT5
FT7
FT12
FT3
Q1 28
R7 16 SEE NOTE 16
R5 21
R13 27
R9 20
FT19
FT6
FT1
C1 12
C2 12
FT 2
R8 20
CR2
FT4
FT8
Q3 29
B
E
C
1
2
3
4
5
T2 32
C5 40
R15 23
R17 26
R12 42
R10 22
R11 22
R14 42
R16 23
FT10
FT11

VIEW B-B
BEFORE ENCAPSULATION.



5
4
SEE NOTE 20
1.560 1.540
.000 .035 (11 PLACES)
38 SEE NOTE 13
.000 .015
SEE NOTE 12
SEE NOTE 21
2
3
36
34
SEE NOTE 15
.000 .015 TYP 22 PLACES
37 SEE NOTE 14
.02 TYP 20 PLACES
.000 ENCAPSULATION
.015 LIMIT
SEE NOTE 21
SEE NOTE 21

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
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C		REVISED PER TDRR 17962		6 APR 65	JJ
D		REVISED PER TDRR 18514		28 APR 65	[illegible]
E		REVISED PER TDRR 19387		[illegible] JUN 65	[illegible]
F		REVISED PER TDRR 19438		[illegible] JUN 65	[illegible]
G		REVISED PER TDRR 19510		[illegible] JUN 65	[illegible]
H		REVISED PER TDRR 20143		9 JUN 65	[illegible]
J		REVISED PER TDRR 21114		2 JUL 65	[illegible]
K		REVISED PER TDRR 22981		[illegible]	[illegible]
L		REVISED PER TDRR 23588		[illegible]	[illegible]

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER CONNECTIONS TO EMITTER (E), BASE(B) AND COLLECTOR(C) OF Q4 AND Q5 PER ND1002071.
3. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009, METHOD J & CENTRALIZE
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. ~~BOND ITEM 43 AND ITEM 44 TO ITEM 5 PER ND1002237.~~
7. PROCURE PER PS 1007044.
8. MOUNTING TORQUE 12 INCH POUNDS ± 2 IN. LBS.
9. MARKING ON ITEMS 2 & 3 INDICATES THE FOLLOWING:
   BROKEN PATHS INDICATES INSULATION SLEEVING.

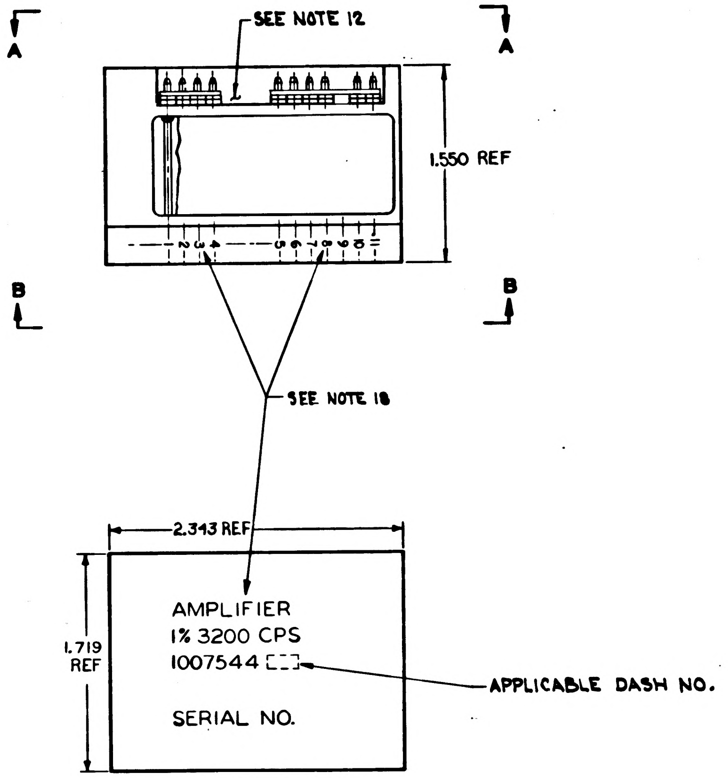
   K: CATHODE SIDE OF SEMICONDUCTOR DEVICE.
   FT( ): FEED THRU
   PLUS(+): POSITIVE SIDE OF CAPACITOR
   C: COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C(): COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B(): BASE
   E(): EMITTER
10. BOND ITEM 39 TO ITEM 15. PER MIL-I-15126, CONDITION C-2/23/50 BEFORE ASSEMBLY TO ITEM 1.
11. UNLESS OTHERWISE SPECIFIED:
    A. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    B. WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
12. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR: R3, R4, R5, R10, R11, R12, R14, R15, R16 & R18.
15. TYPICAL ~~SLEEVING &~~ WIRE FOR FT1 THRU FT12.
16. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "A", VALUE IS IN OHMS.
17. FILL PER ND1002117
18. MARK PIN NUMBERS ~~.060~~ .100 HIGH (WHITE) AND ALL OTHER CHARACTERS ~~.100~~ .140 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
19. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "B", VALUE IS IN OHMS
20. ASSEMBLE PER ND1002136.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT-2.5, ½ WIDE
23. ~~BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~

NOTES: (CONTINUED)

24. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I~~
25. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
26. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE.
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03±.03 OF EXTERNAL EDGE.



MARKING VIEW

TABLE "A" SELECTION CHART - FOR R7	
PART NUMBER	VALUE
1010364-337	2800
-345	3090
-351	3320
-359	3650
-365	3920
-371	4220
-377	4530
-381	4750
-387	5110
-391	5360
-395	5620
-397	5760
-401	6040
-405	6340
-409	6650
-411	6810
-415	7150
-419	7500
-421	7680
-425	8060

TABLE "B" SELECTION CHART- FOR R19	
PART NUMBER	VALUE
1006750-70	39K
-52	6.8K
-45	3.6K
-41	2.4K
-38	1.8K
-35	1.3K
-33	1.1K
-114	865
-113	785
-111	650
-110	590
-108	490
-107	450
-106	410

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		REF	1009529	SCHEMATIC DIAGRAM, ELECTRICAL
AR		47	1010848-2	WIRE, ELECTRICAL-NICKEL
1		46	1010829-3	DIODE
1		45	SEE NOTE 19	RESISTOR
1		44	1008540-7	GASKET, CONNECTOR-MINIATURE
1		43	1008540-4	GASKET, CONNECTOR-MINIATURE
2		42	1006750-17	RESISTOR, FIXED
2		41	1000093-14	SCREW
1		40	1010264-21	CAPACITOR, FIXED
AR		39	SEE NOTE 22	INSULATION TAPE, ELECT
AR		38	1006776-20	INSULATION, SLEEVING, ELECT
AR		37	1006776-21	INSULATION, SLEEVING, ELECT
~~AR~~		~~36~~	~~1006776-22~~	~~INSULATION, SLEEVING, ELECT~~
AR		35	1006757-9	WIRE, ELEC
~~AR~~		~~34~~	~~1006757-8~~	~~WIRE, ELEC~~
AR		33	1006757-1	WIRE, ELEC
1		32	1010337	TRANSFORMER
1		31	1010324	TRANSFORMER
1		30	1010269-2	TRANSISTOR
1		29	1010345-2	TRANSISTOR
1		28	1010431	TRANSISTOR
1		27	1010278-80	RESISTOR
1		26	1010278-8	
1		25	1006750-73	
1		24	1006750-49	
2		23	1006750-12	
2		22	1006750-26	
2		21	1006750-1	
2		20	1010364-385	
1		19	1010364-335	
1		18	1010364-381	
1		17	1010364-251	
1		16	SEE NOTE 16	RESISTOR
~~1~~		~~15~~	~~1010265-3~~	~~SEMICONDUCTOR DEVICE, DIODE~~
1		14	1010372-16	SEMICONDUCTOR DEVICE, DIODE
2		13	1010264-29	CAPACITOR, FIXED
2		12	1010410-9	CAPACITOR, FIXED
2		11	1008025-2	INSULATOR, BUSHING
2		10	1008021-1	BUSHING, INSULATOR
2		9	1008071-4	WASHER, FLAT
2		8	1008024-2	WASHER, INSULATOR
2		7	1008024-1	WASHER, INSULATOR
2		6	MS20341-10B	NUT
10		5	1006775	INSULATOR
10		4	1006782-5	CONTACT, WRAPOST-MALE
1		3	1008302	INSULATOR
1		2	1008301	INSULATOR
1		1	1008300	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007511		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + - DECIMALS XXX ±.005 XX ±.02 ANGLES + - - -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

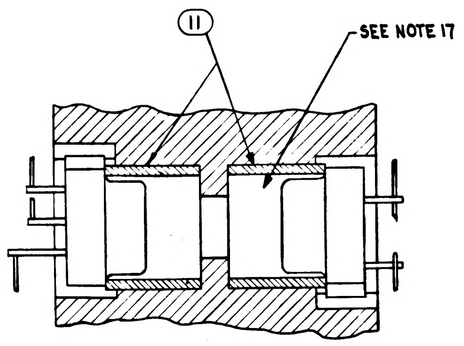
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN R.Allen DATE 14 AUG 64
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1% 3200 CPS
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007544
SCALE 2:1
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17802		[illegible]	
B		REVISED PER TDRR 17610		3 MAR 65	
C		REVISED PER TDRR 17962		6 APR 65	
D		REVISED PER TDRR 18514		27 APR 65	
E		REVISED PER TDRR 19387		JUL 65	
F		REVISED PER TDRR 19438		11 JUL 65	
G		REVISED PER TDRR 19510		JUN 65	
H		REVISED PER TDRR 20143		19 JUL 65	
J		REVISION STATUS CHANGED		27 JUL 65	
K		REVISED PER TDRR 2298		[illegible]	
L		REVISED PER TDRR 23865		[illegible] 65	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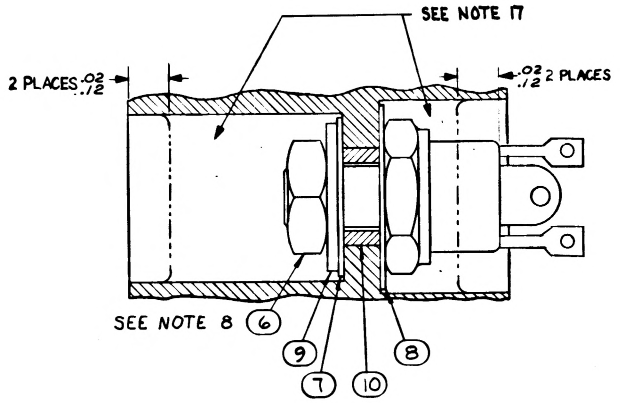
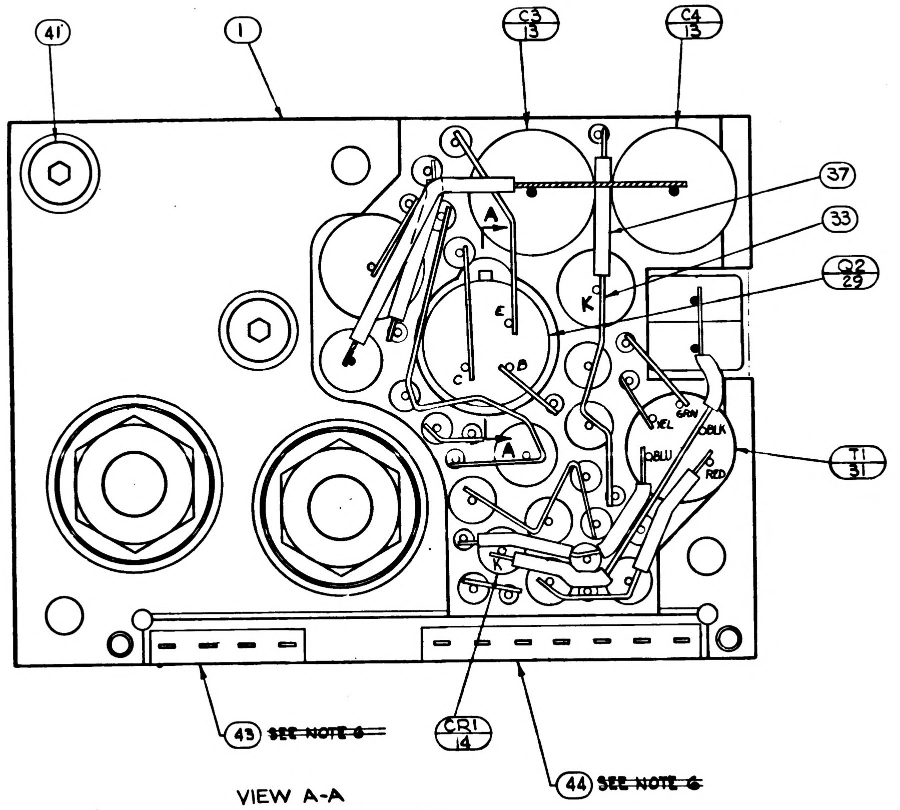
SEE NOTE 17

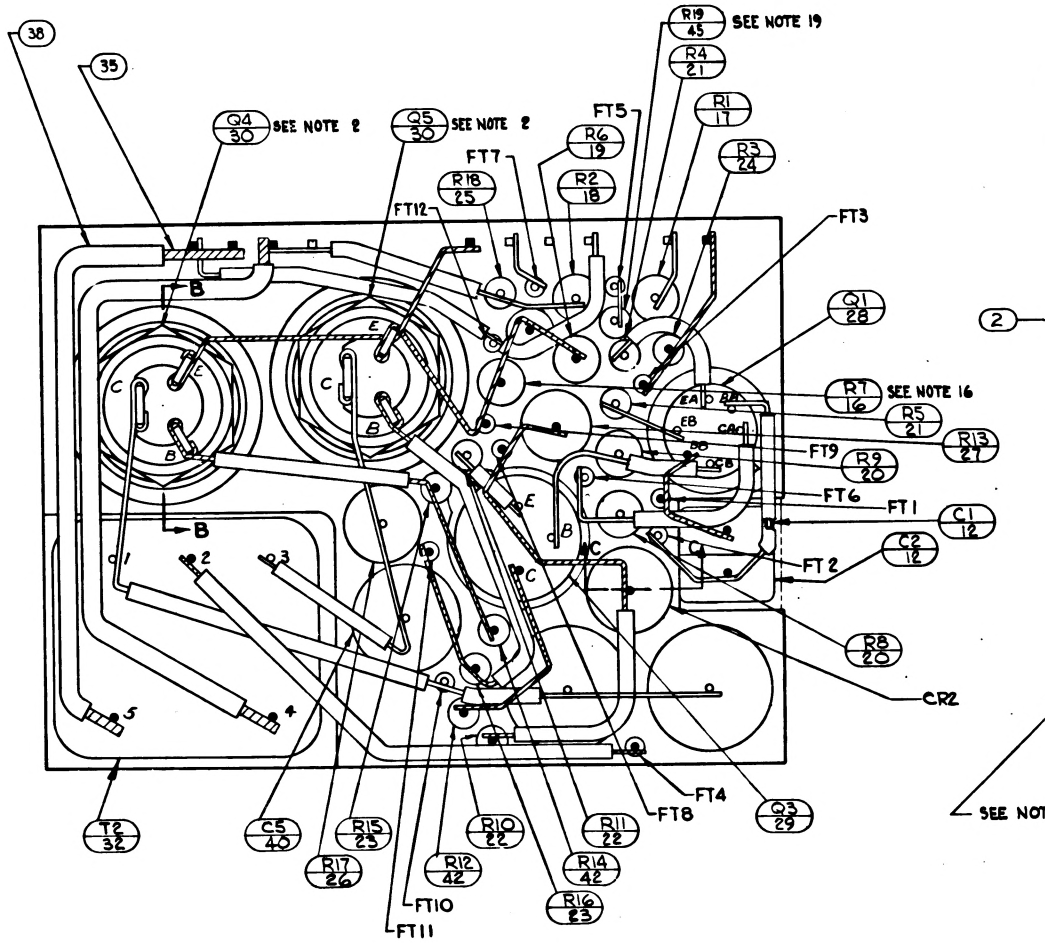
PARTIAL SECTION A-A


SEE NOTE 17
2 PLACES .02/.12
.02/.12 2 PLACES
SEE NOTE 8
6
9
7
10
8

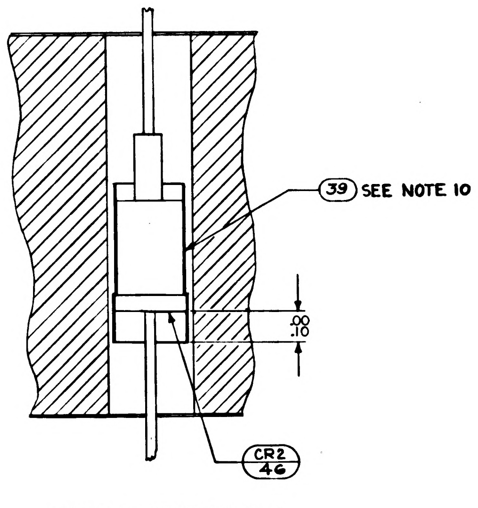
PARTIAL SECTION B-B
TYP 2 PLACES
SEE NOTE 8


41
1
C3 13
C4 13
37
33
Q2 29
T1 31
A
K
E
C
B
YEL
GRN
BLK
BLU
RED
43 ~~SEE NOTE 6~~
CR1 14
44 ~~SEE NOTE 6~~

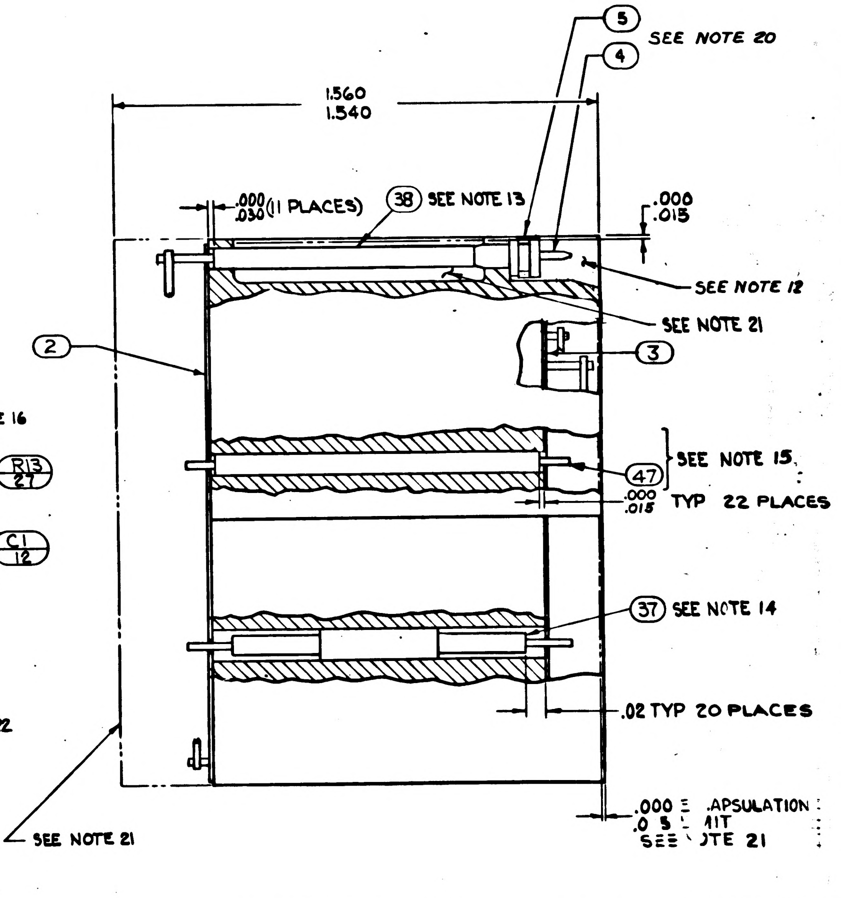
VIEW A-A
BEFORE ENCAPSULATION


38
35
Q4 30 SEE NOTE 2
Q5 30 SEE NOTE 2
R19 45 SEE NOTE 19
R4 21
FT5
R1 17
R6 19
FT7
R3 24
R18 25
R2 18
FT12
FT3
Q1 28
R7 16 SEE NOTE 16
R5 21
R13 27
R9 20
FT9
FT6
FT1
C1 12
C2 12
FT2
R8 20
CR2
FT4
FT8
Q3 29
R11 22
R14 42
R16 23
R10 22
R12 42
FT10
FT11
R15 23
R17 26
C5 40
T2 32
B
E
C
1
2
3
4
5

VIEW B-B
BEFORE ENCAPSULATION.


39 SEE NOTE 10
.00
.10
CR2 46

PARTIAL SECTION C-C


5 SEE NOTE 20
4
1.560
1.540
.000/.030 (11 PLACES)
38 SEE NOTE 13
.000/.015
SEE NOTE 12
SEE NOTE 21
2
3
47 SEE NOTE 15.
.000/.015 TYP 22 PLACES
37 SEE NOTE 14
.02 TYP 20 PLACES
.000 E .APSULATION
.0 5 L 1IT
SEE \ )TE 21
SEE NOTE 21

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DO NOT SCALE THIS DRAWING	DRAWN [illegible] DATE 14 AUG 64 CHECKED [illegible] 20 AUG 64 APPROVAL [illegible] APPROVAL [illegible] 11-2-64	AMPLIFIER 1% 3200 CPS MODULE ASSY	
MATERIAL	NASA APPROVAL W J R[illegible]	CODE IDENT NO. 80230	SIZE E 1007544
CONTRACT NAS9-497	MIT APPROVAL W[illegible] 4 Nov 64	SCALE 5:1	SHEET 2 OF 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER CONNECTIONS TO EMITTER (E), BASE(B) AND COLLECTOR(C) OF Q4 AND Q5 PER ND1002071.
3. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009, METHOD J & CENTRALIZE
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. ~~BOND ITEM 43 AND ITEM 44 TO ITEM 5 PER ND1002237.~~
7. PROCURE PER PS 1007044.
8. MOUNTING TORQUE 12 INCH POUNDS ± 2 IN. LBS.
9. MARKING ON ITEMS 2 & 3 INDICATES THE FOLLOWING:
   BROKEN PATHS INDICATES INSULATION SLEEVING.

   K: CATHODE SIDE OF SEMICONDUCTOR DEVICE.
   FT( ): FEED THRU
   PLUS(+): POSITIVE SIDE OF CAPACITOR
   C: COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C( ): COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B( ): BASE
   E( ): EMITTER
10. BOND ITEM 39 TO ITEM 15. PER MIL-I-15126, CONDITION C-2/23/50 BEFORE ASSEMBLY TO ITEM 1.
11. UNLESS OTHERWISE SPECIFIED:
    A. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    B. WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
12. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR: R3, R4, R5, R10, R11, R12, R14, R15, R16 & R18.
15. TYPICAL ~~SLEEVING &~~ WIRE FOR FT1 THRU FT12.
16. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "A", VALUE IS IN OHMS.
17. FILL PER ND1002117
18. MARK PIN NUMBERS $\frac{.100}{.060}$ HIGH (WHITE) AND ALL OTHER CHARACTERS $\frac{.140}{.100}$ HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
19. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "B", VALUE IS IN OHMS
20. ASSEMBLE PER ND1002136.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT-2.5, ½ WIDE
23. ~~BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
24. MOISTUREPROOF PER ND1002292 AS REQUIRED BY ITEM NO. (48) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.

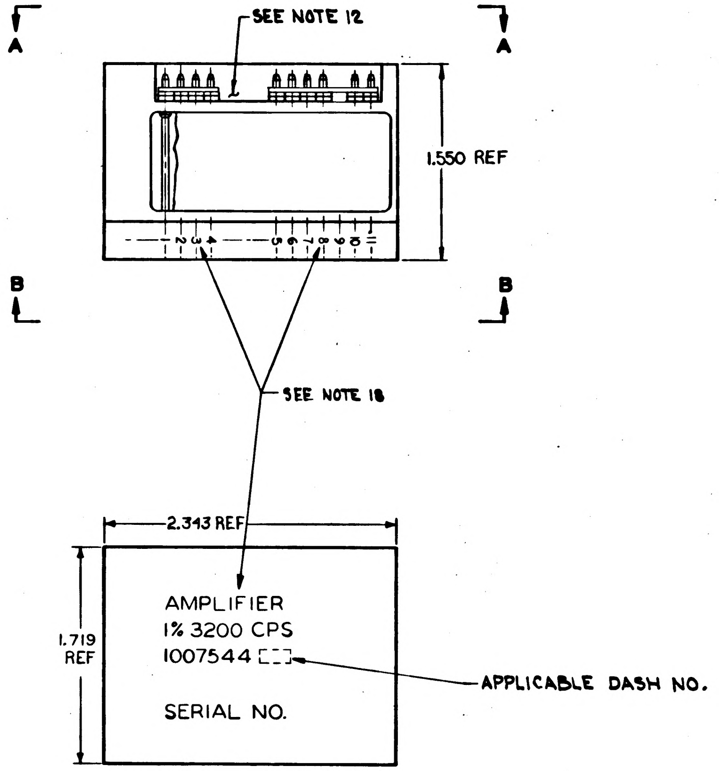
NOTES: (CONTINUED)

~~24. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I~~

25. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
26. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE.
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE.



MARKING VIEW

TABLE "A" SELECTION CHART - FOR R7	
PART NUMBER	VALUE
1010364-337	2800
-345	3090
-351	3320
-359	3650
-365	3920
-371	4220
-377	4530
-381	4750
-387	5110
-391	5360
-395	5620
-397	5760
-401	6040
-405	6340
-409	6650
-411	6810
-415	7150
-419	7500
-421	7680
-425	8060

TABLE "B" SELECTION CHART - FOR R19	
PART NUMBER	VALUE
1006750-70	39K
-52	6.8K
-45	3.6K
-41	2.4K
-38	1.8K
-35	1.3K
-33	1.1K
-114	865
-113	785
-111	650
-110	590
-108	490
-107	450
-106	410

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17302		12 MAR 65	[illegible]
B		REVISED PER TDRR 17610		24 MAR 65	[illegible]
C		REVISED PER TDRR 17962		6 APR 65	JJ
D		REVISED PER TDRR 18514		26 APR 65	R.A.
E		REVISED PER TDRR 19387		[illegible] JUN 65	[illegible]
F		REVISED PER TDRR 19438		11 JUN 65	JWF
G		REVISED PER TDRR 19510		[illegible] JUN 65	[illegible]
H		REVISED PER TDRR 20143		[illegible] JUNE 65	JK.
J		REVISED PER TDRR 21114		[illegible] JUL 65	LK
K		REVISED PER TDRR 22981		[illegible] 65	JW.
L		REVISED PER TDRR 23888		[illegible]	JW
M		REVISED PER TDRR 26397		24 FEB 66	RP

		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		☒	☒		REF	1009529	SCHEMATIC DIAGRAM, ELECTRICAL
		AR	—		48	SEE NOTE 24	MOISTUREPROOFING
		AR	AR		47	1010848-2	WIRE, ELECTRICAL-NICKEL
		1	1		46	1010829-3	DIODE
		1	1		45	SEE NOTE 19	RESISTOR
		1	1		44	1008540-7	GASKET, CONNECTOR-MINIATURE
		1	1		43	1008540-4	GASKET, CONNECTOR-MINIATURE
		2	2		42	1006750-17	RESISTOR, FIXED
		2	2		41	1000093-14	SCREW
		1	1		40	1010264-21	CAPACITOR, FIXED
		AR	AR		39	SEE NOTE 22	INSULATION TAPE, ELECT
		AR	AR		38	1006776-20	INSULATION, SLEEVING, ELECT
		AR	AR		37	1006776-21	INSULATION, SLEEVING, ELECT
			~~AR~~		~~36~~	~~1006776-22~~	~~INSULATION, SLEEVING, ELECT~~
		AR	AR		35	1006757-9	WIRE, ELEC
			~~AR~~		~~34~~	~~1006757-8~~	~~WIRE, ELEC~~
		AR	AR		33	1006757-1	WIRE, ELEC
		1	1		32	1010337	TRANSFORMER
		1	1		31	1010324	TRANSFORMER
		1	1		30	1010269-2	TRANSISTOR
		1	1		29	1010345-2	TRANSISTOR
		1	1		28	1010431	TRANSISTOR
		1	1		27	1010278-80	RESISTOR
		1	1		26	1010278-8	
		1	1		25	1006750-73	
		1	1		24	1006750-49	
		2	2		23	1006750-12	
		2	2		22	1006750-26	
		2	2		21	1006750-1	
		2	2		20	1010364-385	
		1	1		19	1010364-335	
		1	1		18	1010364-381	
		1	1		17	1010364-251	
		1	1		16	SEE NOTE 16	RESISTOR
			~~1~~		15	~~1010265-3~~	~~SEMICONDUCTOR DEVICE, DIODE~~
		1	1		14	1010372-16	SEMICONDUCTOR DEVICE, DIODE
		2	2		13	1010264-29	CAPACITOR, FIXED
		2	2		12	1010410-9	CAPACITOR, FIXED
		2	2		11	1008025-2	INSULATOR, BUSHING
		2	2		10	1008021-1	BUSHING, INSULATOR
		2	2		9	1008071-4	WASHER, FLAT
		2	2		8	1008024-2	WASHER, INSULATOR
		2	2		7	1008024-1	WASHER, INSULATOR
		2	2		6	MS20341-10B	NUT
		10	10		5	1006775	INSULATOR
		10	10		4	1006782-5	CONTACT, WRAPOST-MALE
		1	1		3	1008302	INSULATOR
		1	1		2	1008301	INSULATOR
		1	1		1	1008300	HEATSINK

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ XXX ±.005 + -
- XX ±.02 - -
DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

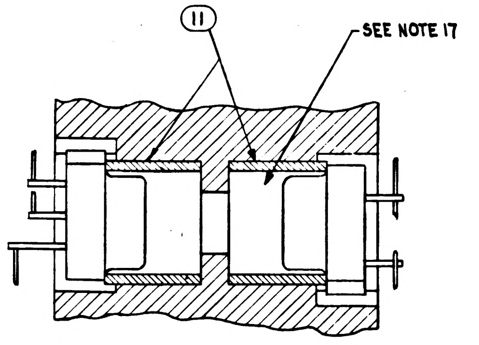
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN R.J. Olson DATE 18 AUG 64
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1% 3200 CPS
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007544
SCALE 2:1
SHEET 1 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17302		[illegible] 65	[illegible]
B		REVISED PER TDRR 17610		24 MAR 65	[illegible]
C		REVISED PER TDRR 17962		6 APR 65	[illegible]
D		REVISED PER TDRR 18514		27 APR 65	[illegible]
E		REVISED PER TDRR 19387		11 JUL 65	[illegible]
F		REVISED PER TDRR 19438		11 JUN 65	[illegible]
G		REVISED PER TDRR 19510		[illegible] JUNE 65	[illegible]
H		REVISED PER TDRR 20143		19 [illegible] 65	[illegible]
J		REVISION STATUS CHANGED		27 JUL 65	R.JH
K		REVISED PER TDRR 22981		20 [illegible] 65	[illegible]
L		REVISED PER TDRR 23888		[illegible] 65	[illegible]
M		REVISION STATUS CHANGED		24 FEB 66	[illegible]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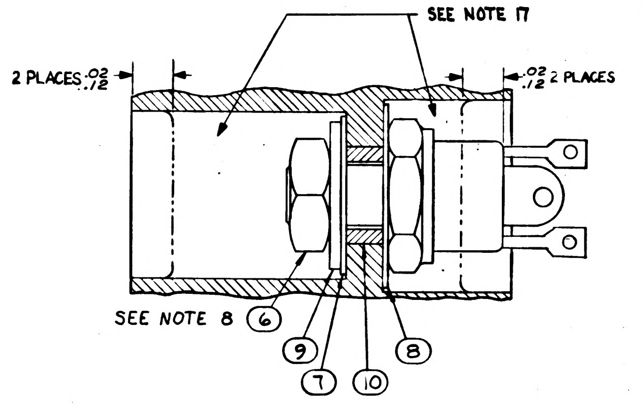
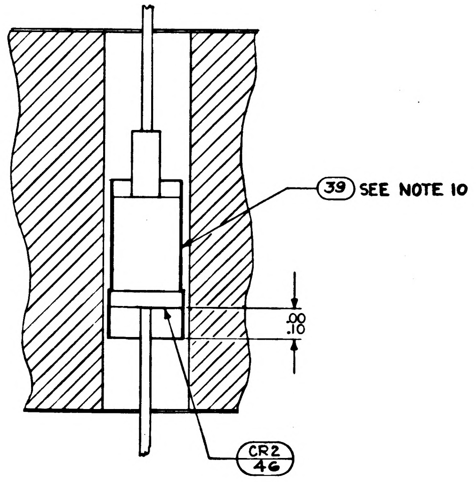
SEE NOTE 17

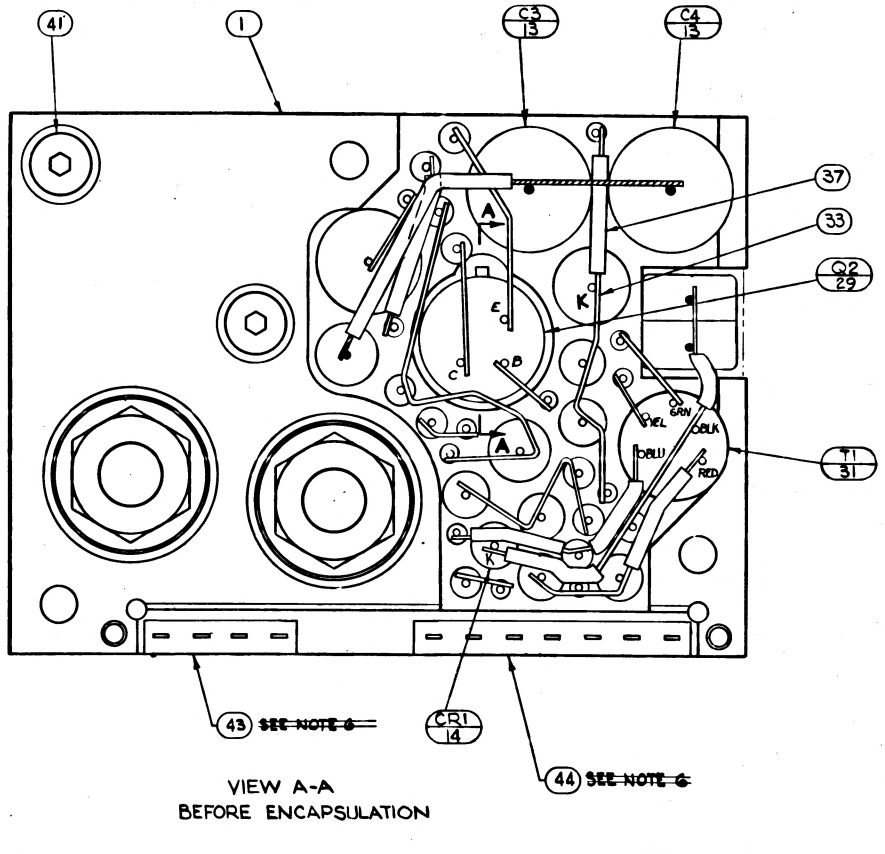
PARTIAL SECTION A-A


SEE NOTE 17
2 PLACES .02 .12
.02 .12 2 PLACES
SEE NOTE 8
6
9
7
10
8

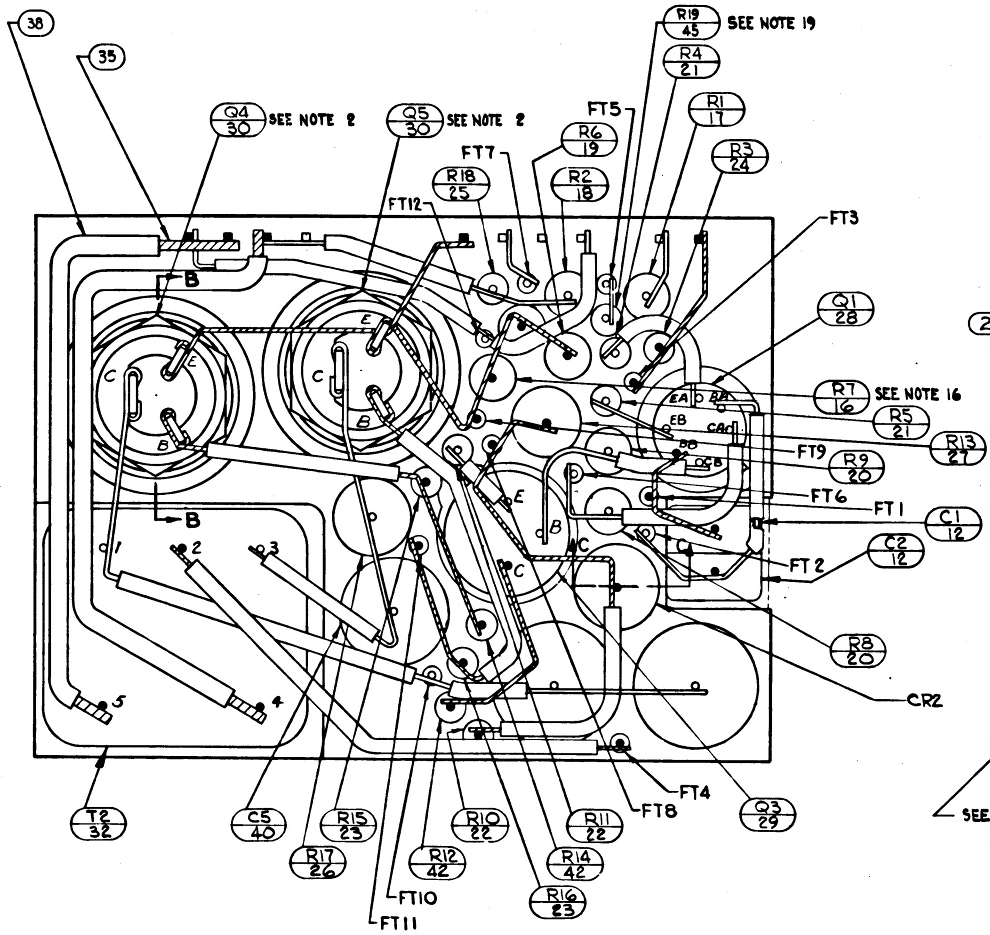
PARTIAL SECTION B-B
TYP 2 PLACES
SEE NOTE 8


39 SEE NOTE 10
.00
.10
CR2 46

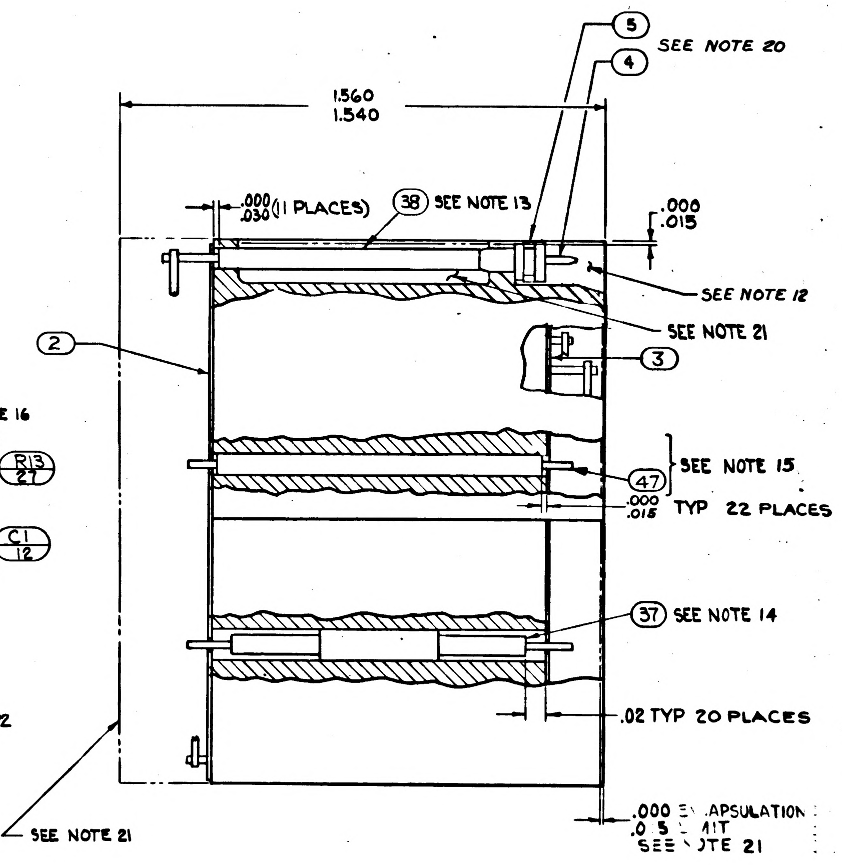
PARTIAL SECTION C-C


41
1
C3 13
C4 13
37
33
Q2 29
T1 31
A
K
E
B
C
YEL
GRN
BLK
BLU
RED
43 ~~SEE NOTE 6~~
CR1 14
44 ~~SEE NOTE 6~~

VIEW A-A
BEFORE ENCAPSULATION


38
35
Q4 30 SEE NOTE 2
Q5 30 SEE NOTE 2
R19 45 SEE NOTE 19
R4 21
FT5
R1 17
FT7
R6 19
R3 24
R18 25
R2 18
FT12
FT3
Q1 28
R7 16 SEE NOTE 16
R5 21
R13 27
FT9
R9 20
FT1
FT6
C1 12
C2 12
FT2
R8 20
CR2
Q3 29
FT4
FT8
B
E
C
1
2
3
4
5
T2 32
C5 40
R15 23
R17 26
R12 42
R10 22
R11 22
R14 42
R16 23
FT10
FT11

VIEW B-B
BEFORE ENCAPSULATION


5
4
SEE NOTE 20
1.560
1.540
.000 .030 (11 PLACES)
38 SEE NOTE 13
.000 .015
SEE NOTE 12
SEE NOTE 21
3
2
SEE NOTE 15
47
.000 .015 TYP 22 PLACES
37 SEE NOTE 14
.02 TYP 20 PLACES
SEE NOTE 21
.000 E[illegible]APSULATION
.0[illegible]5 [illegible]MIT
SEE [illegible]OTE 21

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN [illegible] DATE 14 AUG 64 CHECKED [illegible] 20 AUG 64 APPROVAL [illegible] APPROVAL [illegible]	AMPLIFIER 1% 3200 CPS MODULE ASSY
MATERIAL	NASA APPROVAL [illegible]	CODE IDENT NO. 80230 · SIZE E · 1007544
CONTRACT NAS9-497	MIT APPROVAL [illegible] 4 Nov	SCALE 5:1 · SHEET 2 OF 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER CONNECTIONS TO EMITTER (E), BASE (B) AND COLLECTOR (C) OF Q4 AND Q5 PER ND1002071.
3. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009, METHOD J & CENTRALIZE
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. ~~BOND ITEM 43 AND ITEM 44 TO ITEM 5 PER ND 1002237.~~
7. PROCURE PER PS 1007044.
8. MOUNTING TORQUE 12 INCH POUNDS ± 2 IN. LBS.
9. MARKING ON ITEMS 2 & 3 INDICATES THE FOLLOWING:
   BROKEN PATHS INDICATES INSULATION SLEEVING.

   K: CATHODE SIDE OF SEMICONDUCTOR DEVICE.
   FT( ): FEED THRU
   PLUS(+): POSITIVE SIDE OF CAPACITOR
   C: COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C( ): COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B( ): BASE
   E( ): EMITTER
10. BOND ITEM 39 TO ITEM 46. PER MIL-I-15126, CONDITION C-2/23/50 BEFORE ASSEMBLY TO ITEM 1.
11. UNLESS OTHERWISE SPECIFIED:
    A. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    B. WIRING SHALL MEET THE REQUIREMENTS OF ND 1008069.
12. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR: R3, R4, R5, R10, R11, R12, R14, R15, R16 & R18.
15. TYPICAL ~~SLEEVING &~~ WIRE FOR FT1 THRU FT12.
16. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "A", VALUE IS IN OHMS.
17. FILL PER ND1002117
18. MARK PIN NUMBERS ~~.060~~ .100 HIGH (WHITE) AND ALL OTHER CHARACTERS ~~.100~~ .148 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
19. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "B", VALUE IS IN OHMS
20. ASSEMBLE PER ND1002136.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT-2.5, ½ WIDE
23. ~~BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
24. MOISTUREPROOF PER ND1002292 AS REQUIRED BY ITEM NO. (48) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.

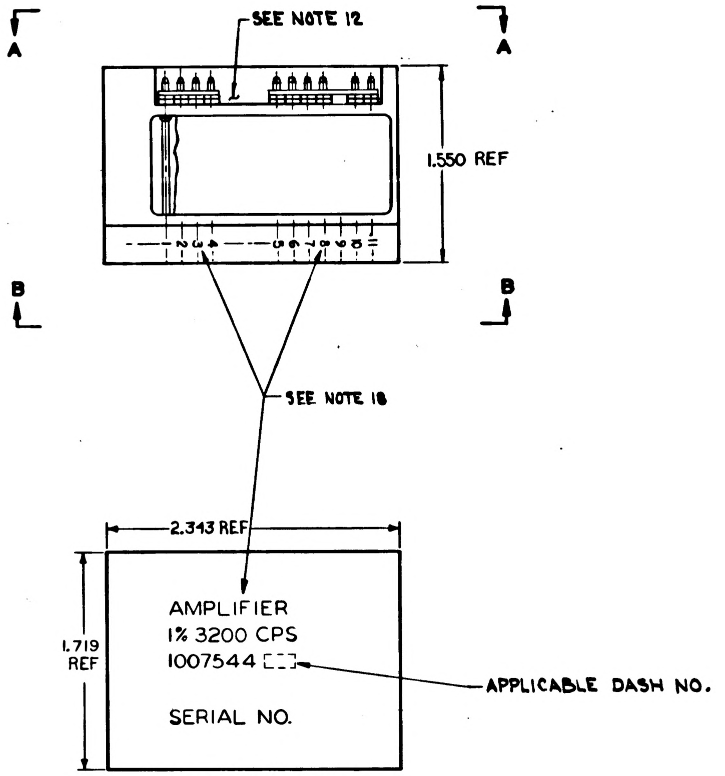
NOTES: (CONTINUED)

~~24. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I~~

25. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
26. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

~~TABLE I~~

~~CONFIGURATION~~	~~BOND BETWEEN WAFER AND HEATSINK~~	~~TOP OF WAFER~~	~~HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE.~~
~~WAFER AND FLAT HEATSINK~~	~~100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~WAFER AND ADJACENT VERTICAL HEATSINK SURFACE~~	~~CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE.~~	~~100% OF AREA .25 FROM EXTERNAL MODULE SURFACE~~	~~N/A~~
~~HEATSINK FOAM CONTACT SURFACE PERIMETER~~	~~N/A~~	~~N/A~~	~~.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03±.03 OF EXTERNAL EDGE.~~



MARKING VIEW

TABLE "A" SELECTION CHART FOR R7	
PART NUMBER	VALUE
1010364-337	2800
-345	3090
-351	3320
-359	3650
-365	3920
-371	4220
-377	4530
-381	4750
-387	5110
-391	5360
-395	5620
-397	5760
-401	6040
-405	6340
-409	6650
-411	6810
-415	7150
-419	7500
-421	7680
-425	8060

TABLE "B" SELECTION CHART-FOR R19	
PART NUMBER	VALUE
1006750-70	39K
-52	6.8K
-45	3.6K
-41	2.4K
-38	1.8K
-35	1.3K
-33	1.1K
-114	865
-113	785
-111	650
-110	590
-108	490
-107	450
-106	410

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17302		[illegible] 65	[illegible]
B		REVISED PER TDRR 17610		[illegible]	[illegible]
C		REVISED PER TDRR 17962		[illegible]	[illegible]
D		REVISED PER TDRR 18514		23 APR [illegible]	[illegible]
E		REVISED PER TDRR 19387		[illegible]	[illegible]
F		REVISED PER TDRR 19438		[illegible]	[illegible]
G		REVISED PER TDRR 19510		[illegible]	[illegible]
H		REVISED PER TDRR 20143		[illegible]	[illegible]
J		REVISED PER TDRR 21114		[illegible]	[illegible]
K		REVISED PER TDRR 22981		[illegible]	[illegible]
L		REVISED PER TDRR 23588		[illegible]	[illegible]
M		REVISED PER TDRR 26397		24 FEB 66	[illegible]
N		REVISED PER TDRR 29589		[illegible]	[illegible]

021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			REF	1009529	SCHEMATIC DIAGRAM, ELECTRICAL
AR	—		48	SEE NOTE 24	MOISTUREPROOFING
AR	AR		47	1010848-2	WIRE, ELECTRICAL-NICKEL
1	1		46	1010829-3	DIODE
1	1		45	SEE NOTE 19	RESISTOR
1	1		44	1008540-7	GASKET, CONNECTOR-MINIATURE
1	1		43	1008540-4	GASKET, CONNECTOR-MINIATURE
2	2		42	1006750-17	RESISTOR, FIXED
2	2		41	1000093-14	SCREW
1	1		40	1010264-21	CAPACITOR, FIXED
AR	AR		39	SEE NOTE 22	INSULATION TAPE, ELECT
AR	AR		38	1006776-20	INSULATION, SLEEVING, ELECT
AR	AR		37	1006776-21	INSULATION, SLEEVING, ELECT
	~~AR~~		~~36~~	~~1006776-22~~	~~INSULATION, SLEEVING, ELECT~~
AR	AR		35	1006757-9	WIRE, ELEC
	~~AR~~		~~34~~	~~1006757-8~~	~~WIRE, ELEC~~
AR	AR		33	1006757-1	WIRE, ELEC
1	1		32	1010337	TRANSFORMER
1	1		31	1010324	TRANSFORMER
1	1		30	1010269-2	TRANSISTOR
1	1		29	1010345-2	TRANSISTOR
1	1		28	1010431	TRANSISTOR
1	1		27	1010278-80	RESISTOR
1	1		26	1010278-8	
1	1		25	1006750-73	
1	1		24	1006750-49	
2	2		23	1006750-12	
2	2		22	1006750-26	
2	2		21	1006750-1	
2	2		20	1010364-385	
1	1		19	1010364-335	
1	1		18	1010364-381	
1	1		17	1010364-251	
1	1		16	SEE NOTE 16	RESISTOR
	~~1~~		15	~~1010265-3~~	~~SEMICONDUCTOR DEVICE, DIODE~~
1	1		14	1010372-16	SEMICONDUCTOR DEVICE, DIODE
2	2		13	1010264-29	CAPACITOR, FIXED
2	2		12	1010410-9	CAPACITOR, FIXED
2	2		11	1008025-2	INSULATOR, BUSHING
2	2		10	1008021-1	BUSHING, INSULATOR
2	2		9	1008071-4	WASHER, FLAT
2	2		8	1008024-2	WASHER, INSULATOR
2	2		7	1008024-1	WASHER, INSULATOR
2	2		6	MS20341-10B	NUT
10	10		5	1006775	INSULATOR
10	10		4	1006782-5	CONTACT, WRAPOST-MALE
1	1		3	1008302	INSULATOR
1	1		2	1008301	INSULATOR
1	1		1	1008300	HEATSINK

QUANTITY REQUIRED
LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ XXX ±.005 + -
- XX ±.02 - -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

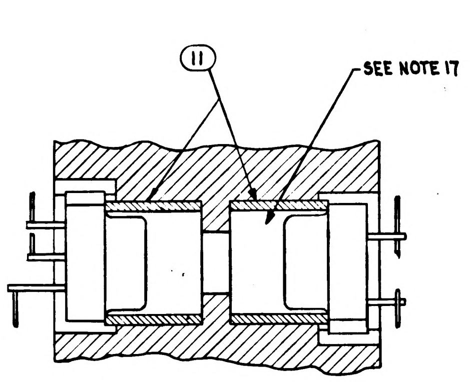
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN [illegible] DATE 14 AUG 64
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

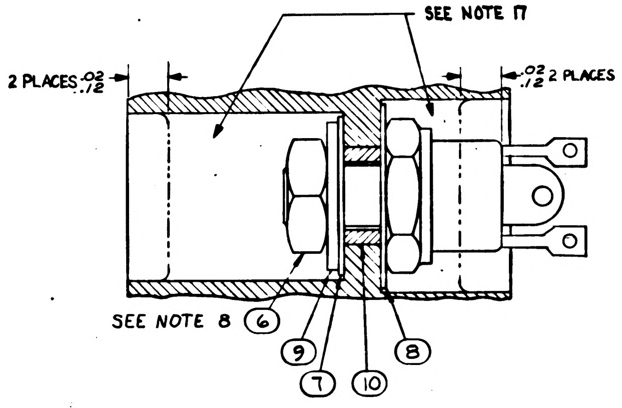
AMPLIFIER 1% 3200 CPS
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007544
SCALE 2:1
SHEET 1 OF 2

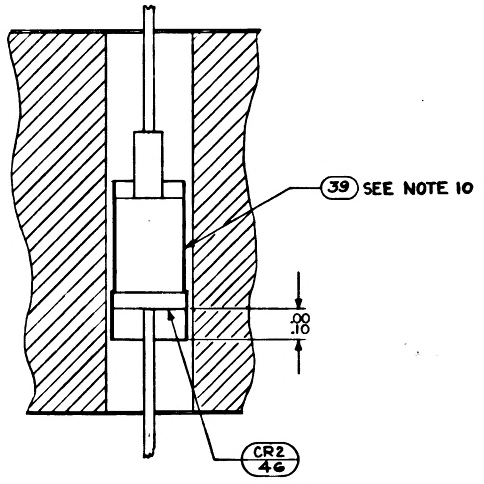
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 1780[illegible]		65	
B		REVISED PER TDRR 17610		24 MAR 65	
C		REVISED PER TDRR 17962		6 APR 65	
D		REVISED PER TDRR 18514		27 APR 65	
E		REVISED PER TDRR 19387		JUL 65	
F		REVISED PER TDRR 19438		1 JUL 65	
G		REVISED PER TDRR 19510		JUN 65	
H		REVISED PER TDRR 20143		17 NOV 65	
J		REVISION STATUS CHANGED		2 JUL 65	R.JH
K		REVISED PER TDRR 22981		[illegible]	
L		REVISED PER TDRR 23888		[illegible] 65	
M		REVISION STATUS CHANGED		24 FEB 66	
N		REVISION STATUS CHANGED		66	


11
SEE NOTE 17

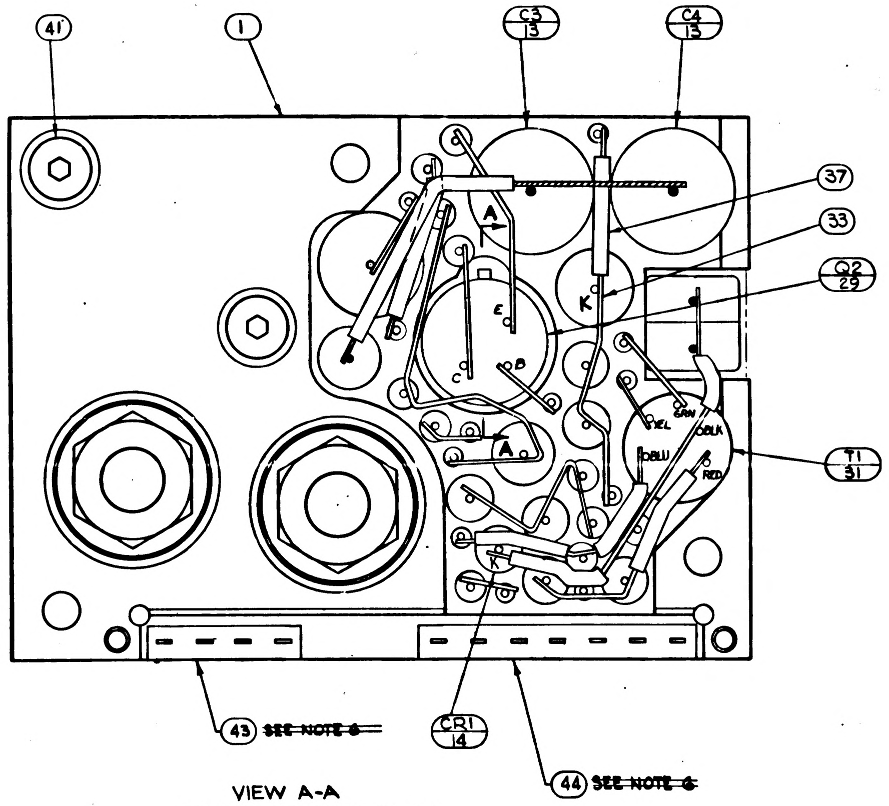
PARTIAL SECTION A-A


SEE NOTE 17
2 PLACES .02 .12
.02 .12 2 PLACES
SEE NOTE 8
6
9
7
10
8

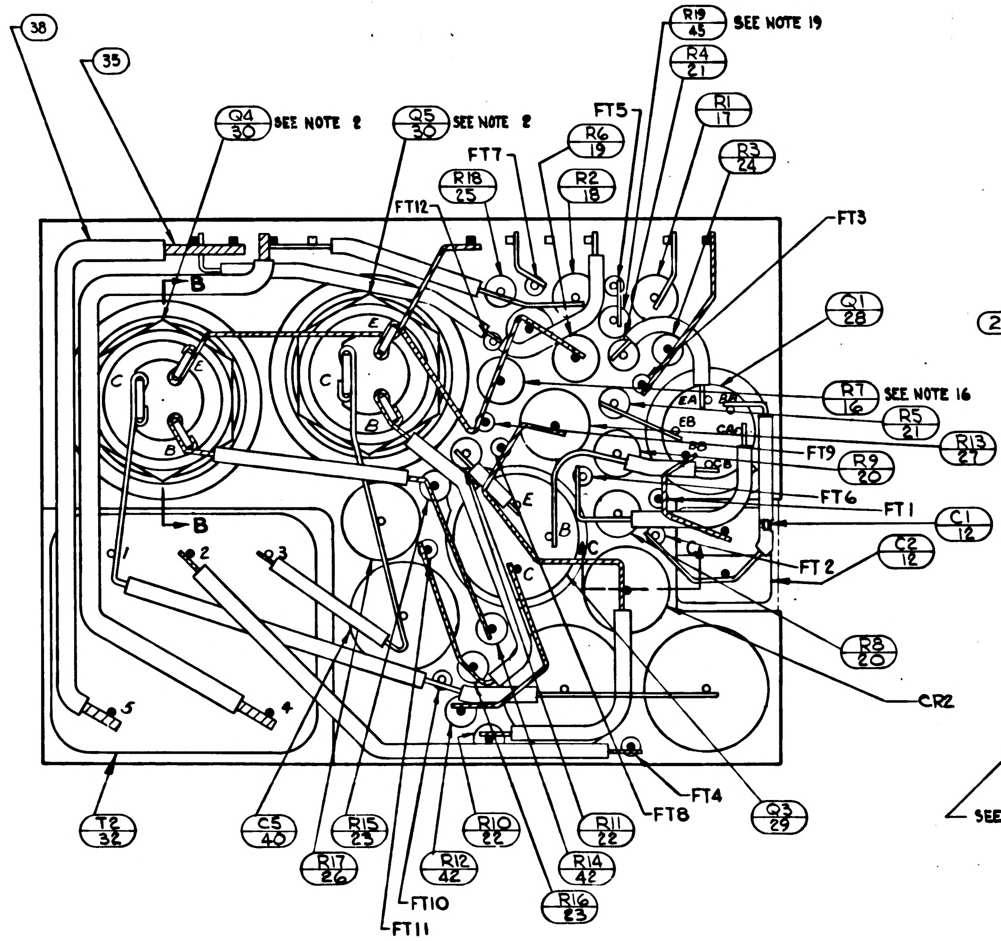
PARTIAL SECTION B-B
TYP 2 PLACES
SEE NOTE 8


39 SEE NOTE 10
.00 .10
CR2 46

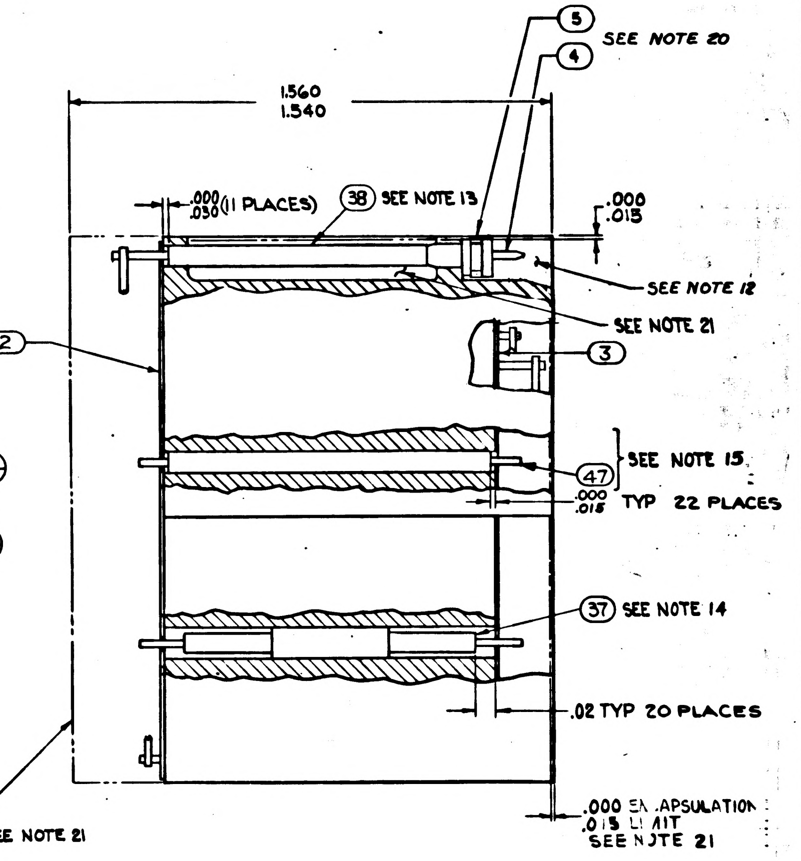
PARTIAL SECTION C-C


41
1
C3 13
C4 13
37
33
Q2 29
T1 31
A
K
E
B
C
A
YEL
GRN
BLK
BLU
RED
43 ~~SEE NOTE 6~~
CR1 14
44 ~~SEE NOTE 6~~

VIEW A-A
BEFORE ENCAPSULATION


38
35
Q4 30 SEE NOTE 2
Q5 30 SEE NOTE 2
R19 45 SEE NOTE 19
R4 21
FT5
R1 17
R6 19
FT7
R3 24
R18 25
R2 18
FT12
FT3
Q1 28
R7 16 SEE NOTE 16
R5 21
R13 27
FT9
R9 20
FT6
FT1
C1 12
C2 12
FT2
R8 20
CR2
B
B
C
E
B
C
E
B
EA
EB
CA
CB
1
2
3
4
5
T2 32
C5 40
R15 23
R17 26
R12 42
R10 22
FT10
FT11
R14 42
R16 23
R11 22
FT8
FT4
Q3 29

VIEW B-B
BEFORE ENCAPSULATION.


5
4
SEE NOTE 20
1.560
1.540
.000 .030 (11 PLACES)
38 SEE NOTE 13
.000 .015
SEE NOTE 12
SEE NOTE 21
2
3
SEE NOTE 15
47
.000 .015 TYP 22 PLACES
37 SEE NOTE 14
.02 TYP 20 PLACES
SEE NOTE 21
.000 ENCAPSULATION
.015 LIMIT
SEE NOTE 21

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + − DECIMALS + − ANGLES + −	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN 14 AUG 64 CHECKED 20 AUG 64 APPROVAL APPROVAL 11-2-64	AMPLIFIER 1% 3200 CPS MODULE ASSY.
MATERIAL	NASA APPROVAL	CODE IDENT NO. 80230 SIZE E 1007544
CONTRACT NAS9-497	MIT APPROVAL 4 Nov 64	SCALE 5:1 SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17302		[illegible]	
B		REVISED PER TDRR 17610		[illegible] MAR	
C		REVISED PER TDRR 17962		6 APR	
D		REVISED PER TDRR 18514		25 APR 65	
E		REVISED PER TDRR 1938[illegible]		[illegible]	
F		REVISED PER TDRR 19438		[illegible]	
G		REVISED PER TDRR 19510		[illegible]	
H		REVISED PER TDRR 20143		[illegible]	
J		REVISED PER TDRR 21114		[illegible]	
K		REVISED PER TDRR 22[illegible]		[illegible]	
L		REVISED PER TDRR 239[illegible]		[illegible]	
M		REVISED PER TDRR 26397		24 FEB 66	
N		REVISED PER TDRR 29[illegible]		[illegible]	
P		REVISED PER TDRR 29[illegible]		[illegible]	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER CONNECTIONS TO EMITTER (E), BASE (B) AND COLLECTOR (C) OF Q4 AND Q5 PER ND1002071.
3. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009, METHOD J & CENTRALIZE
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. ~~BOND ITEM 43 AND ITEM 44 TO ITEM 5 PER ND 1002237.~~
7. PROCURE PER PS 1007044.
8. MOUNTING TORQUE 12 INCH POUNDS ± 2 IN. LBS.
9. MARKING ON ITEMS 2 & 3 INDICATES THE FOLLOWING:
   BROKEN PATHS INDICATES INSULATION SLEEVING.

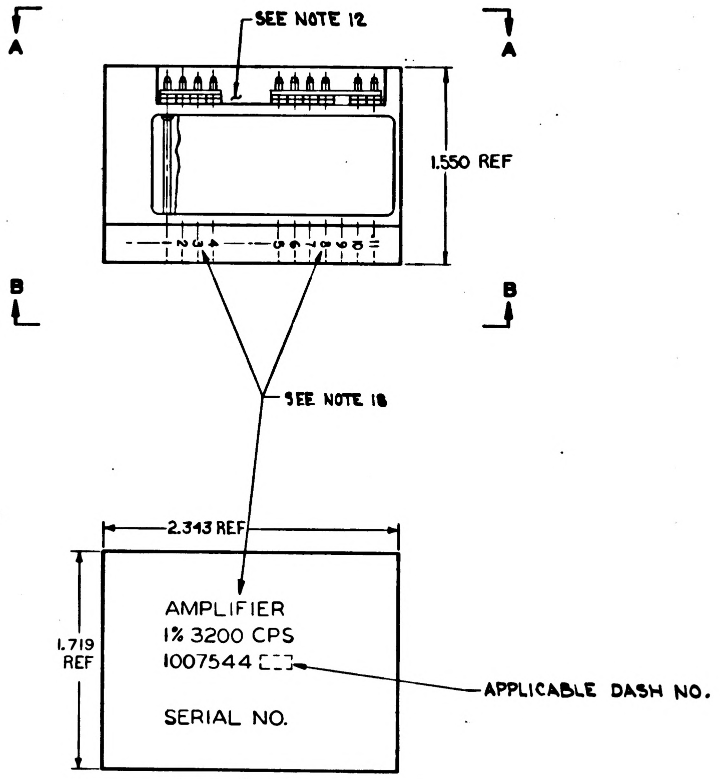
   K: CATHODE SIDE OF SEMICONDUCTOR DEVICE.
   FT( ): FEED THRU
   PLUS(+): POSITIVE SIDE OF CAPACITOR
   C: COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C( ): COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B( ): BASE
   E( ): EMITTER
10. BOND ITEM 39 TO ITEM 46. PER MIL-I-15126, CONDITION C-2/23/50 BEFORE ASSEMBLY TO ITEM 1.
11. UNLESS OTHERWISE SPECIFIED:
    A. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    B. WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
12. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
13. AR DENOTES AS REQUIRED
14. TYPICAL SLEEVING FOR: R3, R4, R5, R10, R11, R12, R14, R15, R16 & R18.
15. TYPICAL ~~SLEEVING &~~ WIRE FOR FT1 THRU FT12.
16. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "A", VALUE IS IN OHMS.
17. FILL PER ND1002117
18. MARK PIN NUMBERS ~~.060~~ .100 HIGH (WHITE) AND ALL OTHER CHARACTERS ~~.100~~ .148 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
19. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007044 PART TO BE SELECTED FROM TABLE "B", VALUE IS IN OHMS
20. ASSEMBLE PER ND 1002136.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT-2.5, ½ WIDE
23. ~~BOND A .25 MINIMUM WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MINIMUM WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
24. MOISTUREPROOF PER ND1002292 AS REQUIRED BY ITEM NO. (48) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.

NOTES: (CONTINUED)

24. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I~~
25. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
26. EXCEPT FOR THE MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE.
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE.



MARKING VIEW

TABLE "A" SELECTION CHART FOR R7	
PART NUMBER	VALUE
1010364-337	2800
-345	3090
-351	3320
-359	3650
-365	3920
-371	4220
-377	4530
-381	4750
-387	5110
-391	5360
-395	5620
-397	5760
-401	6040
-405	6340
-409	6650
-411	6810
-415	7150
-419	7500
-421	7680
-425	8060

TABLE "B" SELECTION CHART FOR R19	
PART NUMBER	VALUE
1006750-70	39K
-52	6.8K
-45	3.6K
-41	2.4K
-38	1.8K
-35	1.3K
-33	1.1K
-114	865
-113	785
-111	650
-110	590
-108	490
-107	450
-106	410

QUANTITY REQUIRED							
		⊠	⊠		REF	1009529	SCHEMATIC DIAGRAM, ELECTRICAL
		AR	—		48	SEE NOTE 24	MOISTUREPROOFING
		AR	AR		47	1010848-2	WIRE, ELECTRICAL-NICKEL
		1	1		46	1010829-3	DIODE
		1	1		45	SEE NOTE 19	RESISTOR
		1	1		44	1008540-7	GASKET, CONNECTOR-MINIATURE
		1	1		43	1008540-4	GASKET, CONNECTOR-MINIATURE
		2	2		42	1006750-17	RESISTOR, FIXED
		2	2		41	1000093-14	SCREW
		1	1		40	1010264-21	CAPACITOR, FIXED
		AR	AR		39	SEE NOTE 22	INSULATION TAPE, ELECT
		AR	AR		38	1006776-20	INSULATION, SLEEVING, ELECT
		AR	AR		37	1006776-21	INSULATION, SLEEVING, ELECT
			~~AR~~		~~36~~	~~1006776-22~~	~~INSULATION, SLEEVING, ELECT~~
		AR	AR		35	1006757-9	WIRE, ELEC
			~~AR~~		~~34~~	~~1006757-8~~	~~WIRE, ELEC~~
		AR	AR		33	1006757-1	WIRE, ELEC
		1	1		32	1010337	TRANSFORMER
		1	1		31	1010324	TRANSFORMER
		1	1		30	1010269-2	TRANSISTOR
		1	1		29	1008813-3	TRANSISTOR
		1	1		28	1010431	TRANSISTOR
		1	1		27	1010278-80	RESISTOR
		1	1		26	1010278-8	
		1	1		25	1006750-73	
		1	1		24	1006750-49	
		2	2		23	1006750-12	
		2	2		22	1006750-26	
		2	2		21	1006750-1	
		2	2		20	1010364-385	
		1	1		19	1010364-335	
		1	1		18	1010364-381	
		1	1		17	1010364-251	
		1	1		16	SEE NOTE 16	RESISTOR
			~~1~~		15	~~1010265-3~~	~~SEMICONDUCTOR DEVICE, DIODE~~
		1	1		14	1010372-16	SEMICONDUCTOR DEVICE, DIODE
		2	2		13	1010264-29	CAPACITOR, FIXED
		2	2		12	1010410-9	CAPACITOR, FIXED
		2	2		11	1008025-2	INSULATOR, BUSHING
		2	2		10	1008021-1	BUSHING, INSULATOR
		2	2		9	1008071-4	WASHER, FLAT
		2	2		8	1008024-2	WASHER, INSULATOR
		2	2		7	1008024-1	WASHER, INSULATOR
		2	2		6	MS20341-10B	NUT
		10	10		5	1006775	INSULATOR
		10	10		4	1006782-5	CONTACT, WRAPOST-MALE
		1	1		3	1008302	INSULATOR
		1	1		2	1008301	INSULATOR
		1	1		1	1008300	HEATSINK
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	XXX ±.005	+ -
-	XX ±.02	- -

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

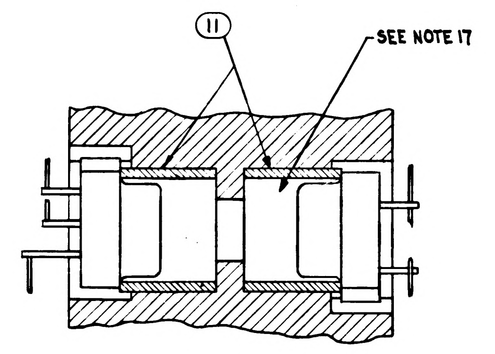
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG. NO.
CONTRACT
DRAWN Olson DATE 14 AUG 64
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

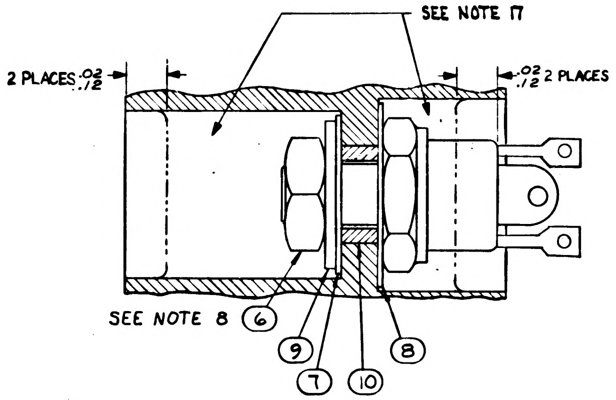
AMPLIFIER 1% 3200 CPS MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007544
SCALE 2:1
SHEET 1 OF 2

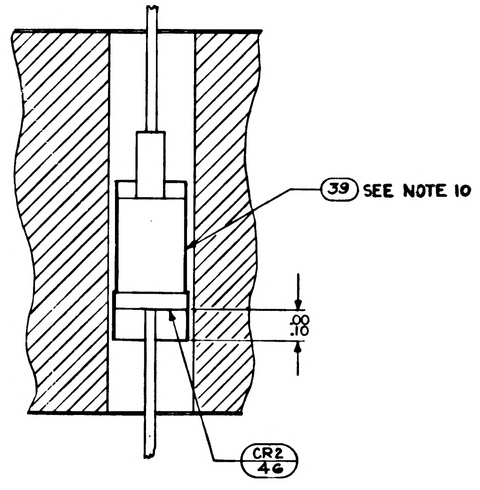
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17302			[illegible]
B		REVISED PER TDRR 17610		24 MAR 65	[illegible]
C		REVISED PER TDRR 17962		6 APR 65	[illegible]
D		REVISED PER TDRR 18514		65	[illegible]
E		REVISED PER TDRR 19387		11 JUL 65	[illegible]
F		REVISED PER TDRR 19438		11 JUN 65	[illegible]
G		REVISED PER TDRR 19510		JUNE 65	[illegible]
H		REVISED PER TDRR 20143		13 MAY 65	[illegible]
J		REVISION STATUS CHANGED		27 JUL 65	[illegible]
K		REVISED PER TDRR 22981		OCT 65	[illegible]
L		REVISED PER TDRR 23888		[illegible]	[illegible]
M		REVISION STATUS CHANGED		24 FEB 66	[illegible]
N		REVISION STATUS CHANGED			[illegible]
P		REVISION STATUS CHANGED			[illegible]


11
SEE NOTE 17

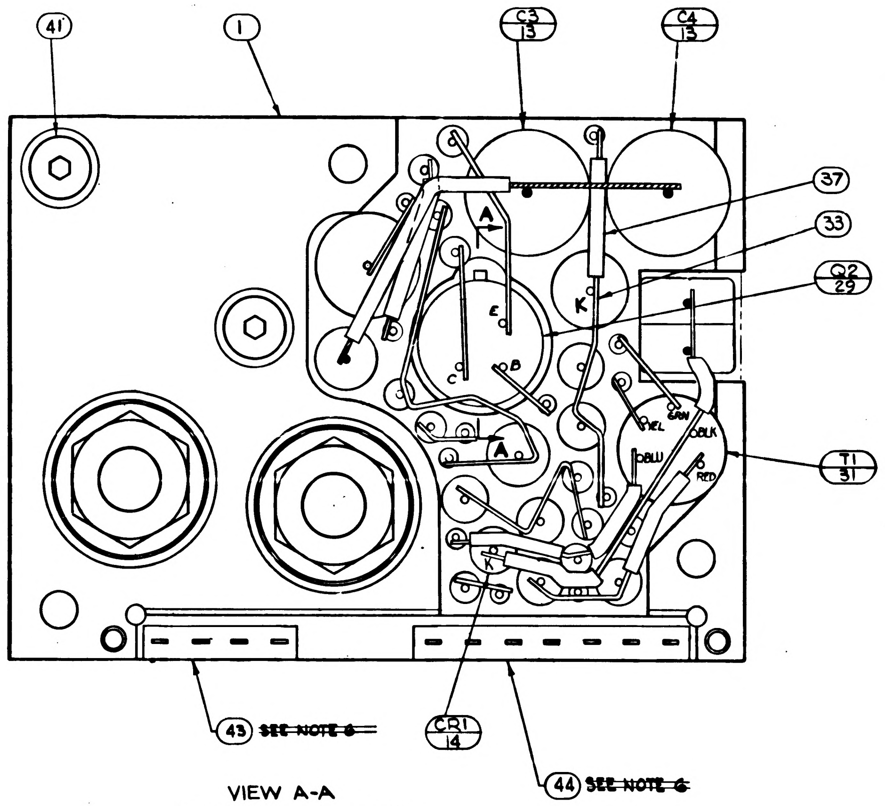
PARTIAL SECTION A-A


SEE NOTE 17
2 PLACES .02 .12
.02 .12 2 PLACES
SEE NOTE 8
6
9
7
10
8

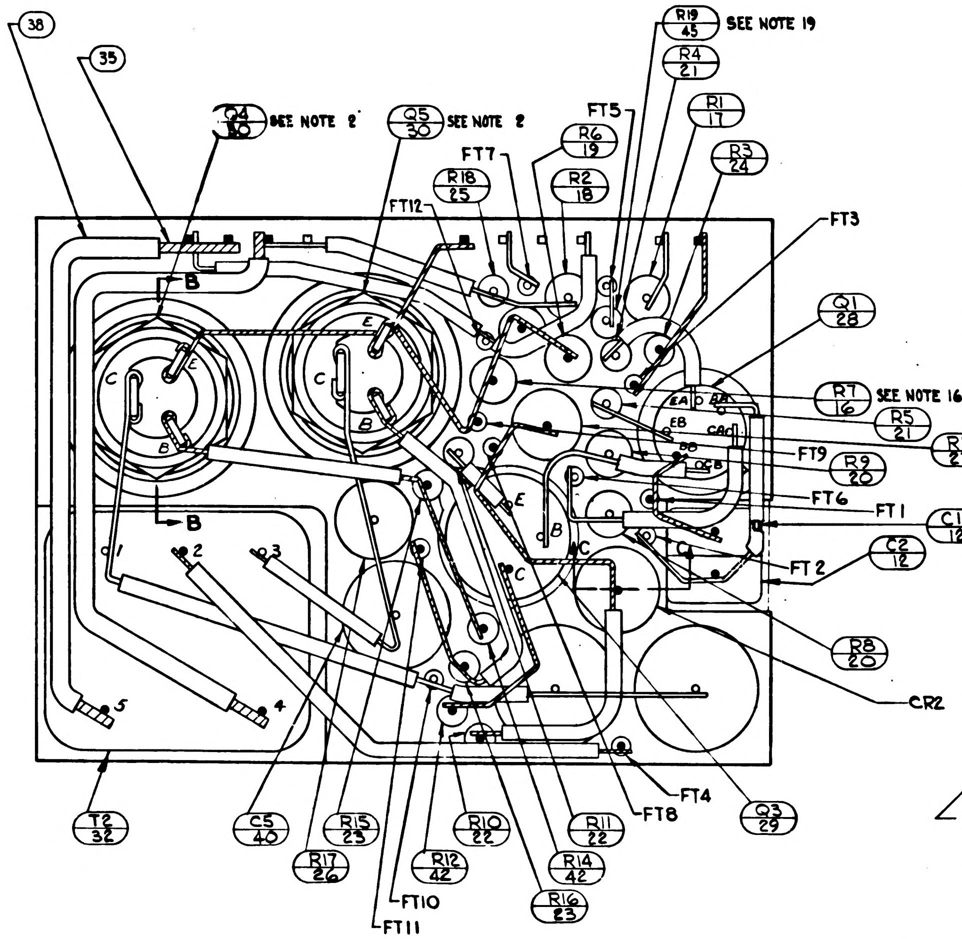
PARTIAL SECTION B-B
TYP 2 PLACES
SEE NOTE 8


39 SEE NOTE 10
.00 .10
CR2 46

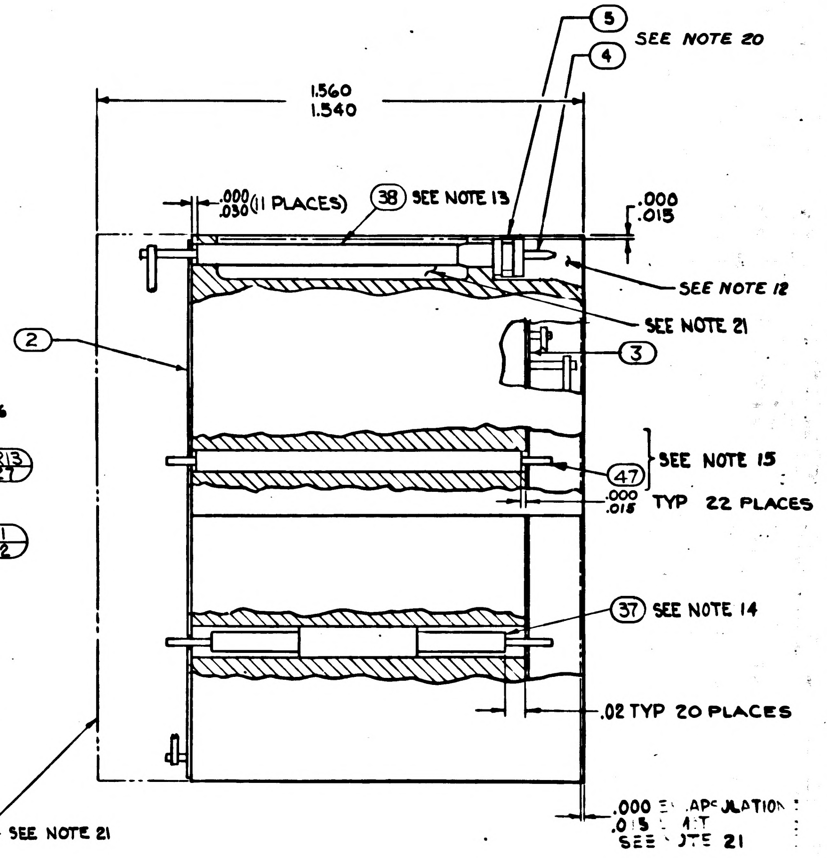
PARTIAL SECTION C-C


41
1
C3 13
C4 13
37
33
Q2 29
A
K
E
B
C
YEL
GRN
BLK
BLU
RED
T1 31
43 ~~SEE NOTE 6~~
CR1 14
44 ~~SEE NOTE 6~~

VIEW A-A
BEFORE ENCAPSULATION


38
35
Q4 30 SEE NOTE 2
Q5 30 SEE NOTE 2
R19 45 SEE NOTE 19
R4 21
FT5
R1 17
R6 19
FT7
R3 24
R18 25
R2 18
FT12
FT3
Q1 28
R7 16 SEE NOTE 16
R5 21
R13 27
FT9
R9 20
FT6
FT1
C1 12
C2 12
FT 2
R8 20
CR2
Q3 29
FT4
FT8
B
C
E
1
2
3
4
5
T2 32
C5 40
R15 25
R17 26
R10 22
R12 42
R14 42
R11 22
R16 23
FT10
FT11

VIEW B-B
BEFORE ENCAPSULATION


5 SEE NOTE 20
4
1.560
1.540
.000 .030 (11 PLACES)
38 SEE NOTE 13
.000 .015
SEE NOTE 12
SEE NOTE 21
2
3
47 SEE NOTE 15
.000 .015 TYP 22 PLACES
37 SEE NOTE 14
.02 TYP 20 PLACES
SEE NOTE 21
.000 ENCAPSULATION
.015 LIMIT
SEE NOTE 21

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN [illegible] DATE 14 AUG 64
CHECKED [illegible] 20 AUG 64
APPROVAL [illegible]
APPROVAL [illegible] 11-2-64
NASA APPROVAL [illegible]
MIT APPROVAL [illegible] 4 Nov 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1% 3200 CPS
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007544
SCALE 5:1
SHEET 2 OF 2

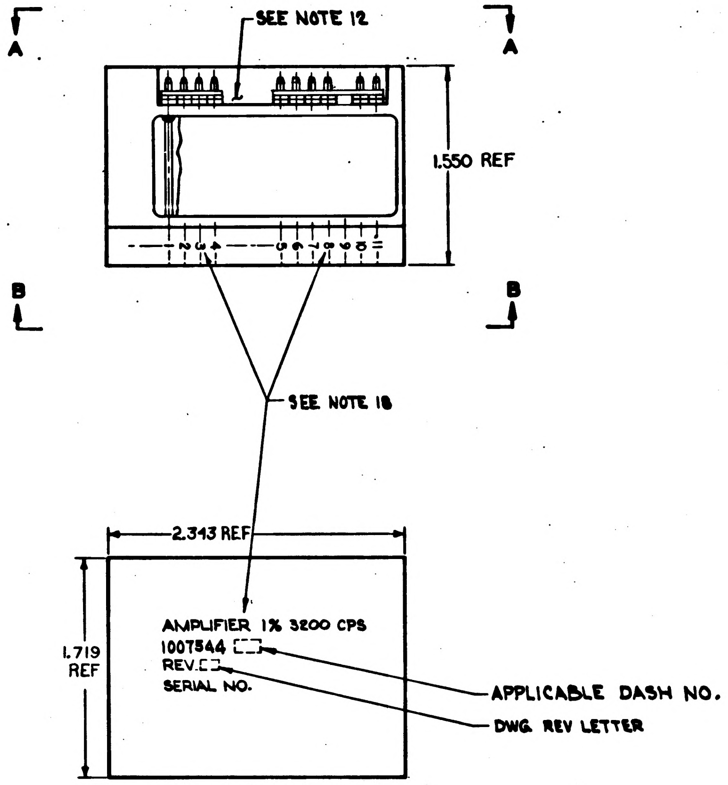
REVISIONS 13913				
SYM	ZONE	DESCRIPTION	DATE	APPD.
		CHG NO.		

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER CONNECTIONS TO EMITTER (E), BASE(B) AND COLLECTOR(C) OF Q4 AND Q5 PER ND1002071.
3. COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009 *METHOD C & CENTRALIZE*
4. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
5. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
6. BOND ITEM 43 AND ITEM 44 TO ITEM 5 PER ND 1002237.
7. PROCURE PER PS 1007044.
8. MOUNTING TORQUE 12 INCH POUNDS ± 2 IN. LBS.
9. MARKING ON ITEMS 2 & 3 INDICATES THE FOLLOWING: BROKEN PATHS INDICATES INSULATION SLEEVING.

   K: CATHODE SIDE OF SEMICONDUCTOR DEVICE.
   FT( ): FEED THRU
   PLUS(+): POSITIVE SIDE OF CAPACITOR
   C: COLLECTOR LEAD OF TRANSISTOR
   B: BASE
   E: EMITTER
   C( ): COLLECTOR LEAD OF MULTISTAGE TRANSISTOR
   B( ): BASE
   E( ): EMITTER

10. BOND ITEM 39 TO ITEM 15. PER MIL-*I-15126, CONDITION C-2/23/50 BEFORE ASSEMBLY TO ITEM 1.*
11. UNLESS OTHERWISE SPECIFIED:
    A. ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
    B. WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
12. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
13. *AR DENOTES AS REQUIRED*
14. TYPICAL SLEEVING FOR: R3, R4, R5, R10, R11, R12, R14, R15, R16 & R18.
15. TYPICAL SLEEVING & WIRE FOR FT1 THRU FT12.
16. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007544 PART TO BE SELECTED FROM TABLE "A", VALUE IS IN OHMS.
17. FILL PER ND1002117
18. MARK PIN NUMBERS .100 .060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140 .100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
19. *VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007544 PART TO BE SELECTED FROM TABLE "B", VALUE IS IN OHMS*
20. *ASSEMBLE PER ND 1002136.*
21. *ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.*
22. *INSULATION TAPE PER MIL-I-15126 TYPE MFT-2.5, ½ WIDE*



MARKING VIEW

TABLE "A" SELECTION CHART - FOR R7	
PART NUMBER	VALUE
1010364-337	2800
-345	3090
-351	3320
-359	3650
-365	3920
-371	4220
-377	4530
-381	4750
-387	5110
-391	5360
-395	5620
-397	5760
-401	6040
-405	6340
-409	6650
-411	6810
-415	7150
-419	7500
-421	7680
-425	8060

TABLE "B" SELECTION CHART- FOR R19	
PART NUMBER	VALUE
1006750-70	39K
-52	6.8K
-45	3.6K
-41	2.4K
-38	1.8K
-35	1.3K
-33	1.1K
-114	865
-113	785
-111	650
-110	590
-108	490
-107	450
-106	410

MASTER

QUANTITY REQUIRED					EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
				011				
						REF	1009529	SCHEMATIC DIAGRAM, ELECTRICAL
			1			45	SEE NOTE 19	RESISTOR
			1			44	1008540-7	GASKET, CONNECTOR-MINIATURE
			1			43	1008540-6	GASKET, CONNECTOR-MINIATURE
			2			42	1006750-17	RESISTOR, FIXED
			2			41	1000093-14	SCREW
			1			40	1010264-21	CAPACITOR, FIXED
			AR			39	SEE NOTE 22	INSULATION TAPE, ELECT
			AR			38	1006776-20	INSULATION, SLEEVING ELECT
			AR			37	1006776-21	INSULATION, SLEEVING, ELECT
			AR			36	1006776-22	INSULATION, SLEEVING ELECT
			AR			35	1006757-9	WIRE, ELEC
			AR			34	1006757-8	WIRE, ELEC
			AR			33	1006757-1	WIRE, ELEC
			1			32	1010337	TRANSFORMER
			1			31	10103-4	TRANSFORMER
			1			30	1010269-2	TRANSISTOR
			1			29	1010345-2	TRANSISTOR
			1			28	1010431	TRANSISTOR
			1			27	1010278-80	RESISTOR
			1			26	1010278-8	
			1			25	1006750-73	
			1			24	1006750-49	
			2			23	1006750-12	
			2			22	1006750-26	
			2			21	1006750-1	
			2			20	1010364-385	
			1			19	1010364-335	
			1			18	1010364-381	
			1			17	1010364-251	
			1			16	SEE NOTE 16	RESISTOR
			1			15	1010265-3	SEMICONDUCTOR DEVICE, DIODE
			1			14	1010372-16	SEMICONDUCTOR DEVICE, DIODE
			2			13	1010264-29	CAPACITOR, FIXED
			2			12	1010410-9	CAPACITOR, FIXED
			2			11	1008025-2	INSULATOR, BUSHING
			2			10	1008021-1	BUSHING, INSULATOR
			2			9	1008071-4	WASHER, FLAT
			2			8	1008024-2	WASHER, INSULATOR
			2			7	1008024-1	WASHER, INSULATOR
			2			6	MS20341-10B	NUT
			10			5	1006775	INSULATOR
			10			4	1006782-5	CONTACT, WRAPOST-MALE
			1			3	1015722	INSULATOR
			1			2	1015721	INSULATOR
			1			1	1015720	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007511		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ XXX ±.005 +-
- XX ±.02 --
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

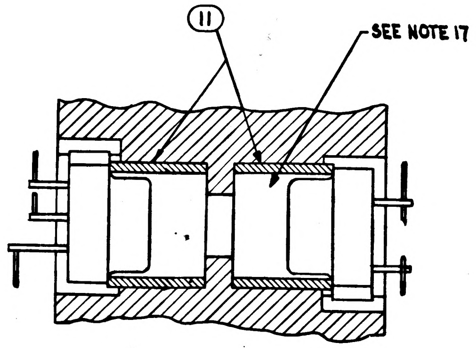
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
Contract NAS 9-497
DRAWN DATE 11 AUG 64
CHECKED
APPROVAL
APPROVAL 11-4-64
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1% 3200 CPS
MODULE ASSY

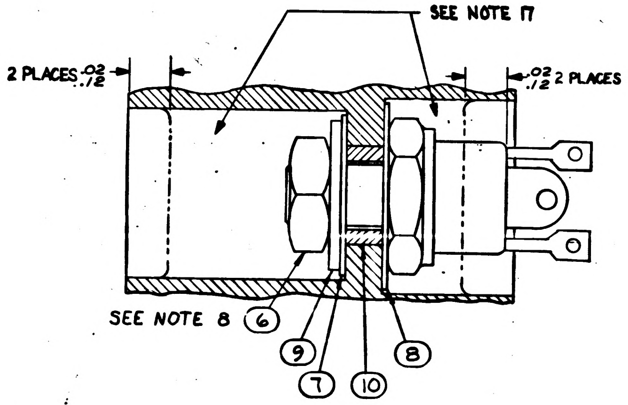
CODE IDENT NO.
SIZE E
1007544
SCALE 2:1
SHEET 1 OF 2

REVISIONS 13973				
SYM	ZONE	DESCRIPTION	DATE	APPD.
		CHG NO.		



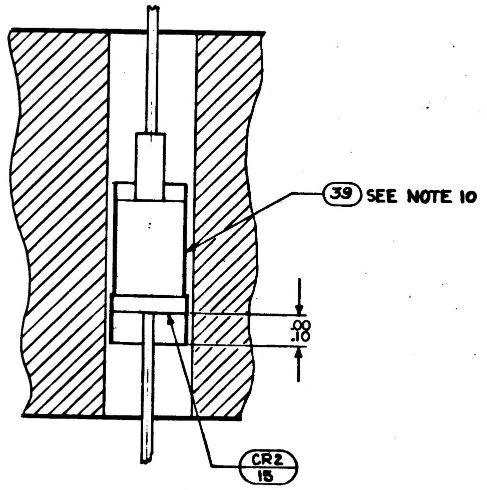
11
SEE NOTE 17

PARTIAL SECTION A-A



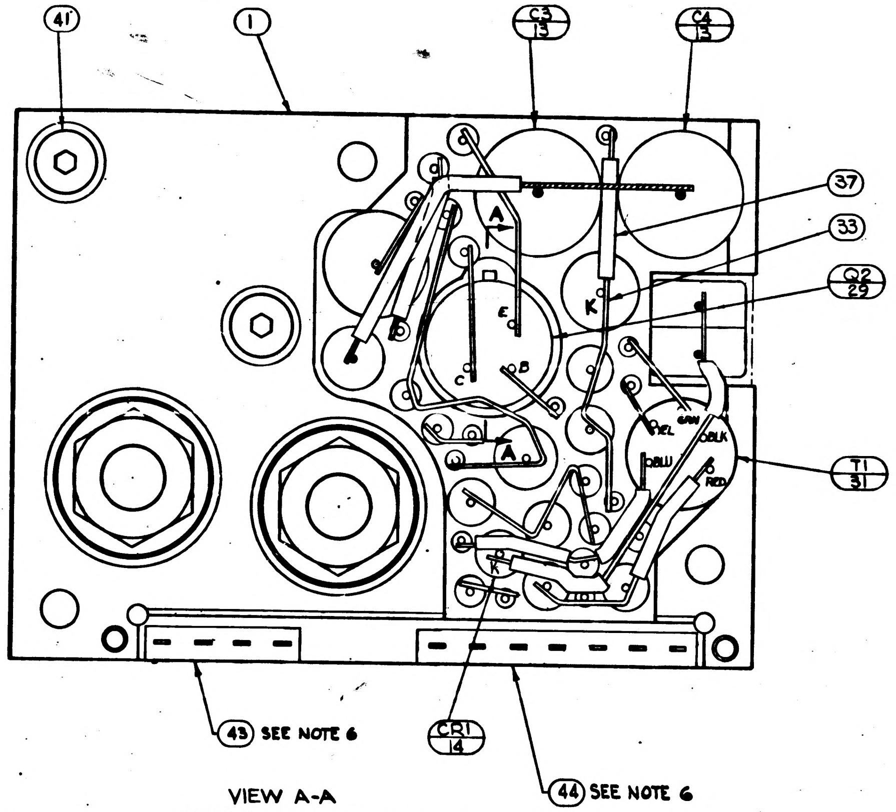
SEE NOTE 17
2 PLACES .02/.12
.02/.12 2 PLACES
SEE NOTE 8
6
9
7
10
8

PARTIAL SECTION B-B
TYP 2 PLACES
SEE NOTE 8



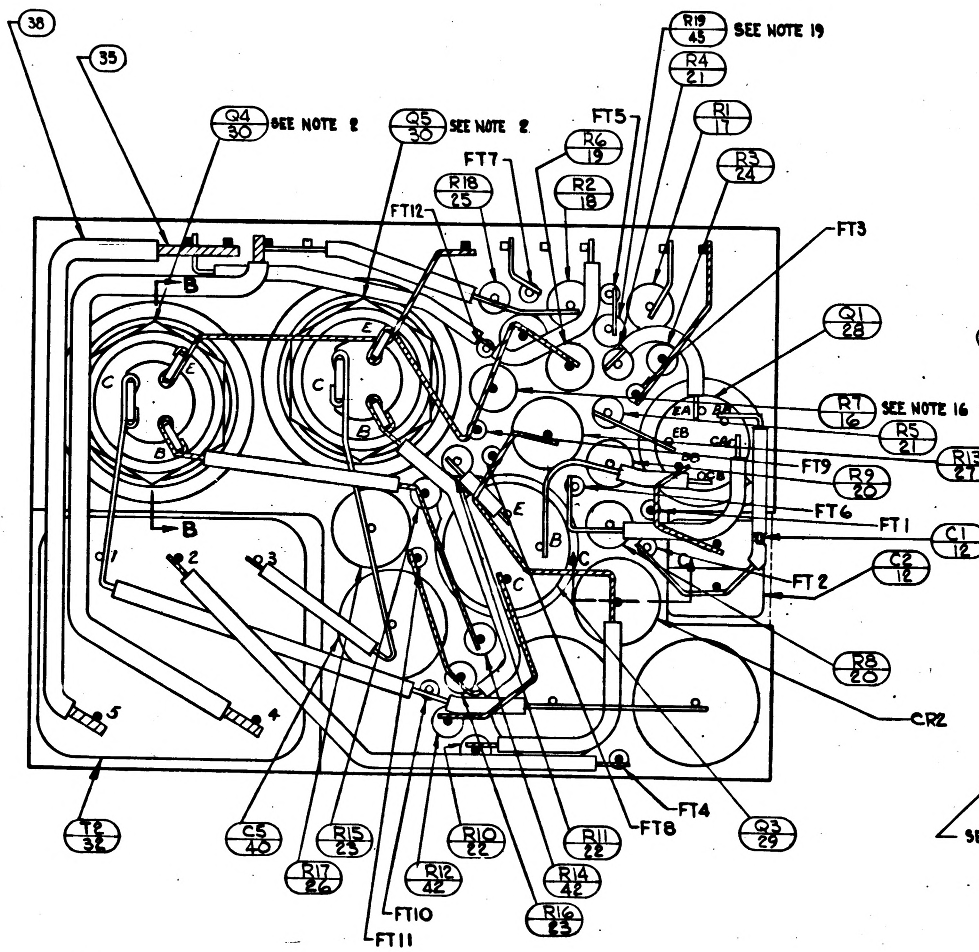
39 SEE NOTE 10
.00/.10
CR2/15

PARTIAL SECTION C-C



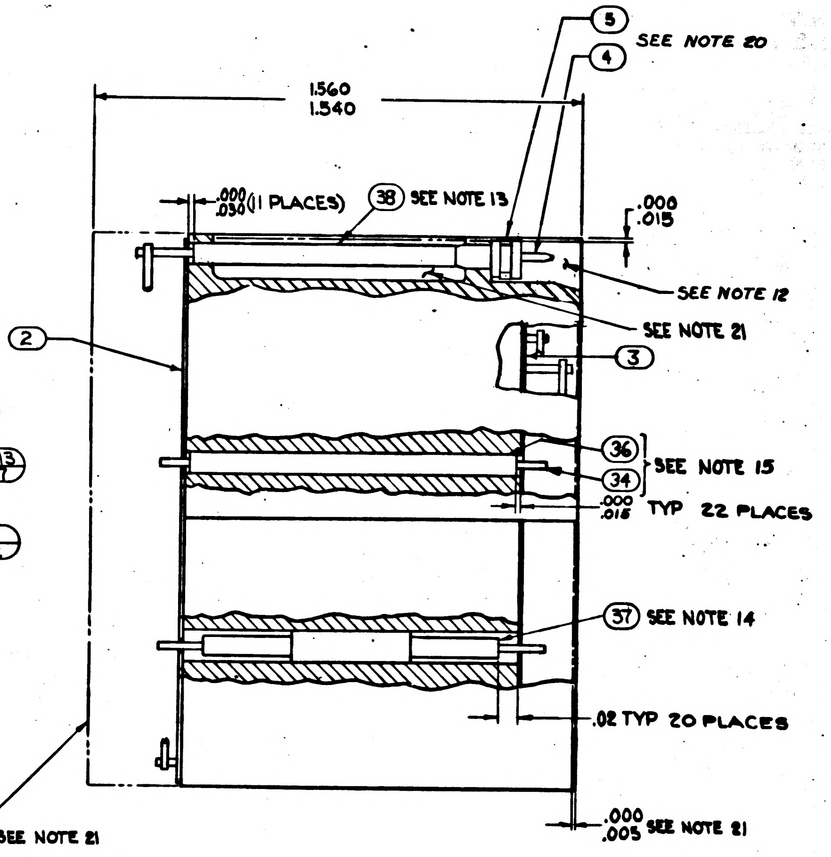
41
1
C3/13
C4/13
37
33
Q2/29
T1/31
A
K
E
C
B
YEL
GRN
BLK
BLU
RED
43 SEE NOTE 6
CR1/14
44 SEE NOTE 6

VIEW A-A
BEFORE ENCAPSULATION



38
35
Q4/30 SEE NOTE 2
Q5/30 SEE NOTE 2
R19/45 SEE NOTE 19
R4/21
FT5
R1/17
R6/19
R3/24
FT7
R2/18
R18/25
FT12
FT3
Q1/28
R7/16 SEE NOTE 16
R5/21
R13/27
FT9
R9/20
FT6
FT1
C1/12
C2/12
FT2
R8/20
CR2
B
C
E
EA
EB
CA
CB
1
2
3
4
5
T2/32
C5/40
R17/26
R15/23
FT10
FT11
R12/42
R10/22
R16/23
R14/42
R11/22
FT8
FT4
Q3/29

VIEW B-B
BEFORE ENCAPSULATION.



5
4
SEE NOTE 20
1.560/1.540
.000/.030 (11 PLACES)
38 SEE NOTE 13
.000/.015
SEE NOTE 12
SEE NOTE 21
2
3
36
34
SEE NOTE 15
.000/.015 TYP 22 PLACES
37 SEE NOTE 14
.02 TYP 20 PLACES
.000/.005 SEE NOTE 21
SEE NOTE 21

MASTER

1007544

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

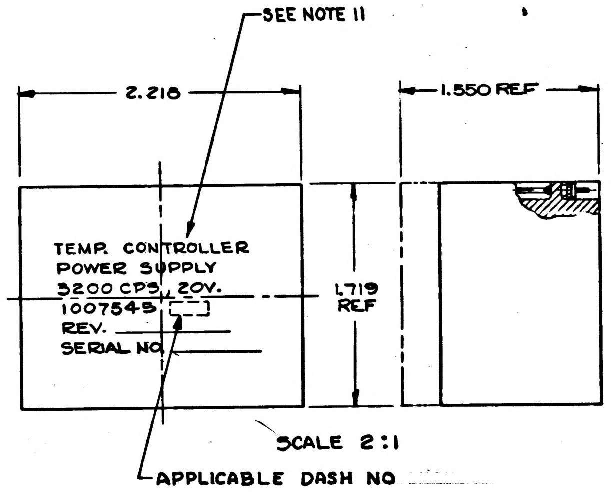
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 14 AUG 64 DATE
CHECK 20 AUG 64
APPROVAL
APPROVAL 11-2-64
NASA APPROVAL 11-4-64
MIT APPROVAL 4 Nov 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

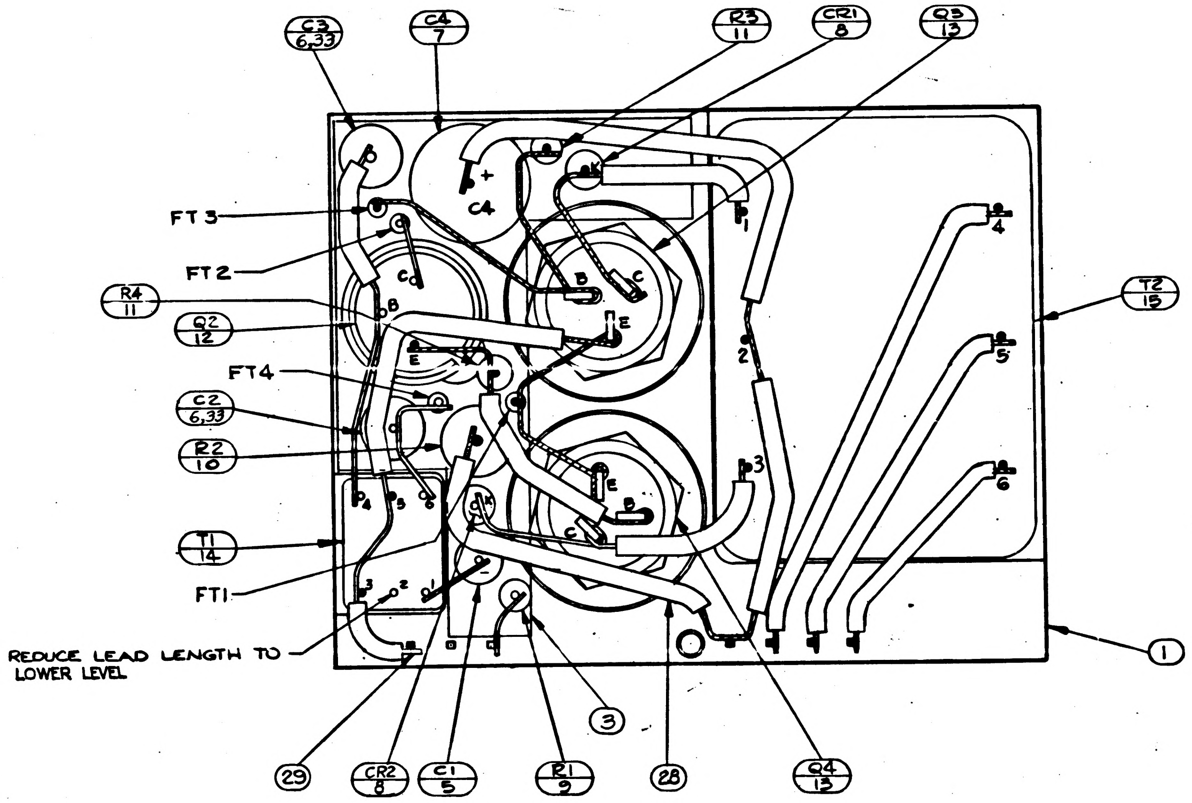
AMPLIFIER 1% 3200 CPS
MODULE ASSY.

CODE IDENT NO.
SIZE E
1007544
SCALE 5:1
SHEET 2 OF 2

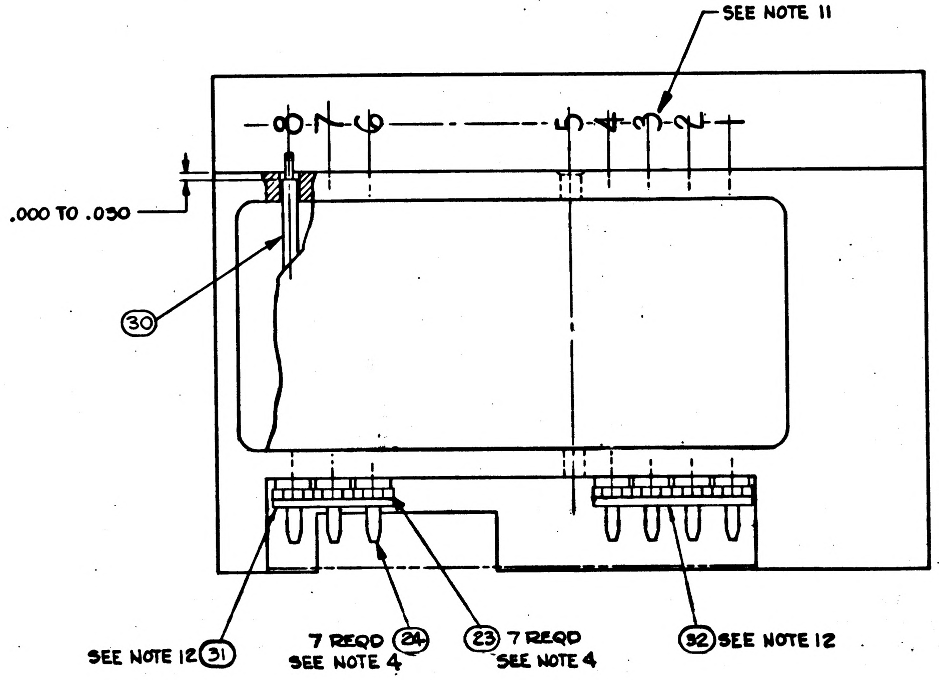
SYM	ZONE	REVISIONS , 33 3 3 DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 14334			



SCALE 2:1



NOTES:
1. INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CEMENTED IN PLACE PER ND1002005 METHOD 'C' & CENTRALIZED
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. MUST MEET REQUIREMENTS OF ND 1002136.
5. SOLDER PER ND 1002071
6. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
7. MOUNTING TORQUE FOR ITEM 20, 12^{+2}_{-2} INCH POUNDS.
8. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
9. FILL PER ND1002117
10. BLACK DOT & CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT & CLEAR WIRING INDICATES LOWER LEVEL WIRING.
11. MARK PIN NUMBERS .08 HIGH (WHITE) & ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 & SERIALIZE PER ND 1002023, CENTRALIZE AS SHOWN.
12. BOND FIND NO. 31 & 32 TO FIND NO. 23 PER ND 1002237
13. PROCURE PER PS 1007045.
14. ON ITEMS 3 AND 4
    BROKEN PATHS INDICATE SLEEVING
    'K' INDICATES CATHODE SIDE OF DIODE.
    FT( ) INDICATES FEED THRU.
    MINUS (-) INDICATES NEGATIVE END OF CAPACITOR
    PLUS (+) " POSITIVE " " "
    C INDICATES COLLECTOR LEAD OF TRANSISTOR
    B " BASE " " "
    E " EMITTER " " "
15. TYPICAL SLEEVING FOR CR1, CR2, R1, R3 & R4
16. TYPICAL SLEEVING FOR FT1 THRU FT4
17. AR DENOTES AS REQUIRED.
18. COAT THREADS AND ITEM 15 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
19. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING



QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		021	011				
		-	X		REF.	1010049	SCHEMATIC
		X	-		REF.	1009544	SCHEMATIC
		2	-		33	1010264-8	CAPACITOR, FIXED
		1	1		32	1008540-4	GASKET, CONNECTOR-MINIATURE
		1	1		31	1008540-3	GASKET, CONNECTOR-MINIATURE
		AR	AR		30	1006776-20	INSULATION SLEEVING
		AR	AR		29	1006757-1	WIRE ELEC. - .010 x .020
		AR	AR		28	1006776-21	INSULATION SLEEVING
		AR	AR		27	1006757-8	WIRE, ELEC. -.020 DIA.
		AR	AR		26	1006776-22	INSULATION SLEEVING
		2	2		25	1008070-75	WASHER, FLAT
		7	7		24	1006782-5	CONTACT, WRAPOST MALE MIN.
		7	7		23	1006775	INSULATOR, WRAPOST MALE MIN.
		2	2		22	1000093-13	SCREW, BUTTON HEAD
		2	2		21	1008025-2	INSULATOR, BUSHING
		2	2		20	MS20341-10B	HEX. NUT
		2	2		19	1008071-4	WASHER, FLAT
		2	2		18	1008024-1	WASHER, INSULATOR
		2	2		17	1008024-2	WASHER, INSULATOR
		2	2		16	1008021-1	BUSHING, INSULATOR
		1	1		15	1010338	TRANSFORMER
		1	1		14	1010329-1	TRANSFORMER, AUDIO
		1	1		13	1010269-2	TRANSISTOR (MATCHED PAIR)
		1	1		12	1010398-4	TRANSISTOR (MATCHED PAIR)
		2	2		11	1006750-1	RESISTOR, FIXED
		1	1		10	1010312-029	RESISTOR, FIXED
		1	1		9	1006750-51	RESISTOR, FIXED
		2	2		8	1010385	DIODE, SEMI-CONDUCTOR DEVICE
		1	1		7	1006789-002	CAPACITOR
		-	2		6	1010264-1	CAPACITOR, FIXED
		1	1		5	1006755-65	CAPACITOR, FIXED
		1	1		4	1015707	INSULATOR
		1	1		3	1015706	INSULATOR
					2		
		1	1		1	1015708	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - XXX ± .005 +
- . XX ± .02 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

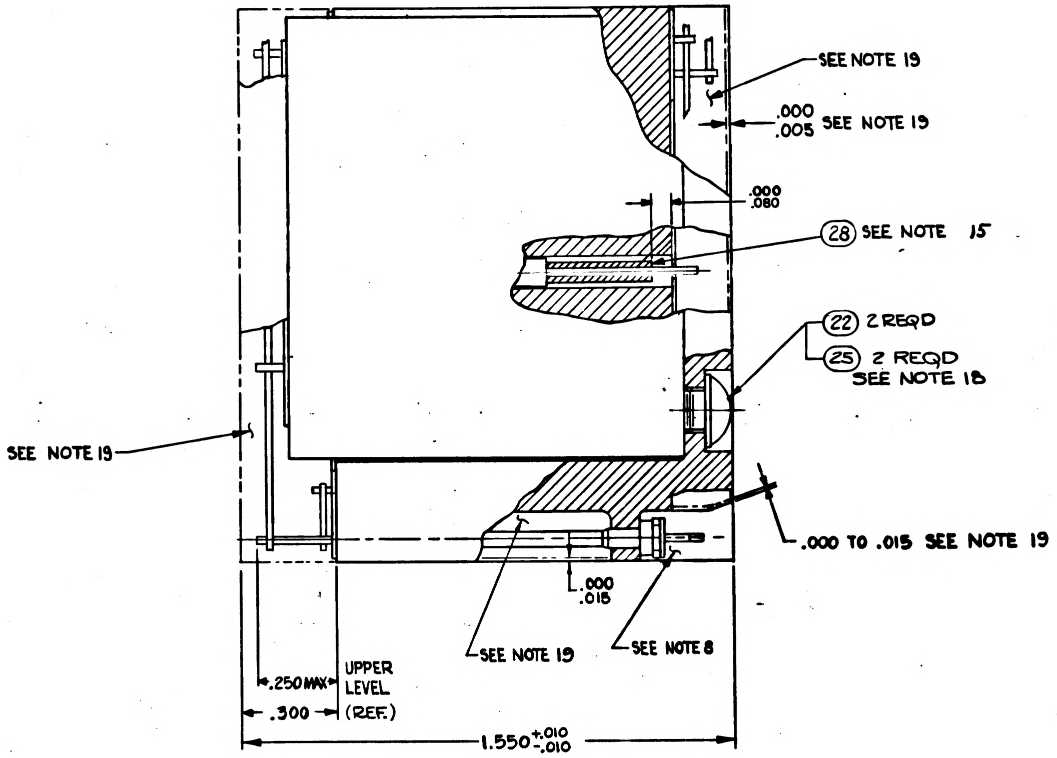
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Cheryl DATE 13 AUG 64
CHECKED A. Ferencik 27 AUG 64
APPROVAL Edwards 3 SEP 64
APPROVAL A. R. Tait 10-5-64
NASA APPROVAL W. Gibson 10-6-64
MIT APPROVAL W Cuffe Lane

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

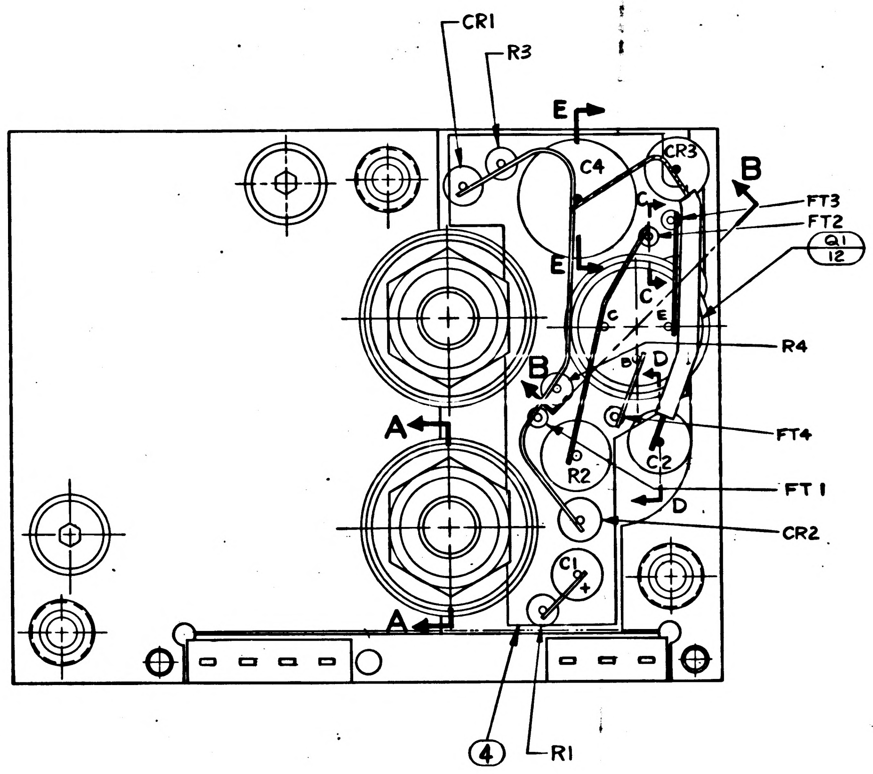
TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V
MODULE ASSY

CODE IDENT NO.
SIZE E
1007545
SCALE 5:1
SHEET OF 2

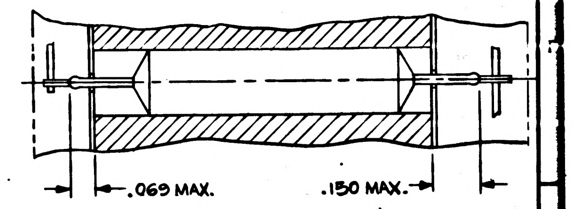
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
-					
A		REVISED PER TDRR 14334			



SEE NOTE 19
.000
.005 SEE NOTE 19
.000
.080
(28) SEE NOTE 15
(22) 2 REQD
(25) 2 REQD
SEE NOTE 18
SEE NOTE 19
.000 TO .015 SEE NOTE 19
.000
.015
SEE NOTE 19
SEE NOTE 8
.250 MAX
UPPER LEVEL (REF.)
.300
1.550 +.010 -.010

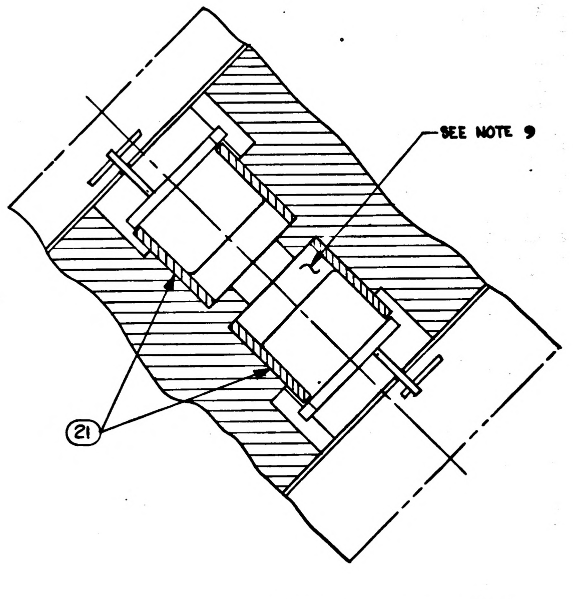


CR1
R3
E
C4
CR3
B
FT3
FT2
Q1
12
E
C
B
E
R4
B
FT4
A
R2
C2
D
FT1
D
CR2
C1
A
4
R1



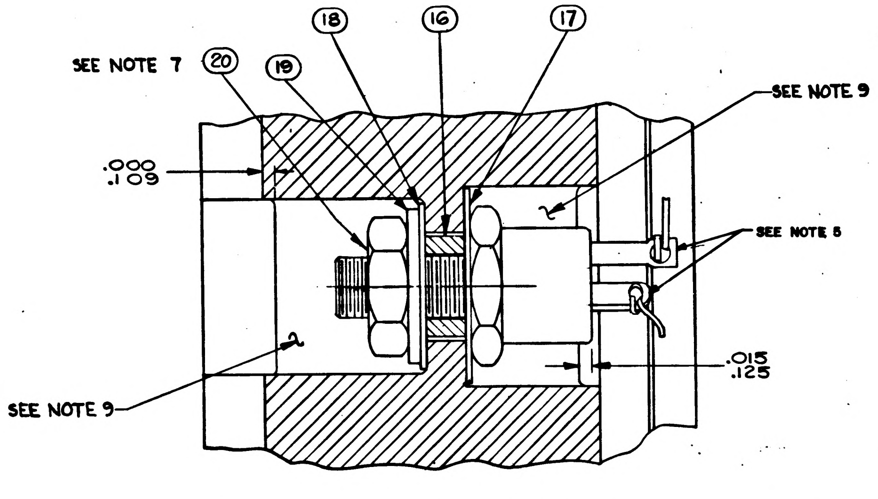
.069 MAX.
.150 MAX.

PARTIAL SECTION D-D
C2 & C3 ORIENTATION



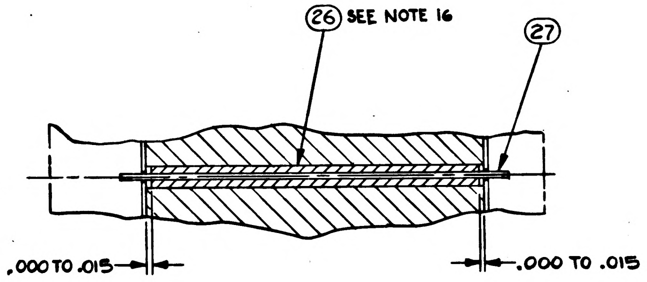
SEE NOTE 9
21

PARTIAL SECTION B-B



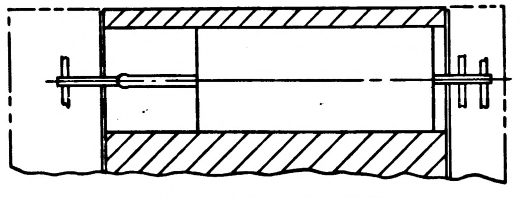
SEE NOTE 7
20
19
18
16
17
SEE NOTE 9
.000
.109
SEE NOTE 8
SEE NOTE 9
.015
.125

PARTIAL SECTION A-A (TYPICAL)
2 PLACES



26 SEE NOTE 16
27
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C
(TYPICAL)



PARTIAL SECTION E-E
C4 ORIENTATION

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

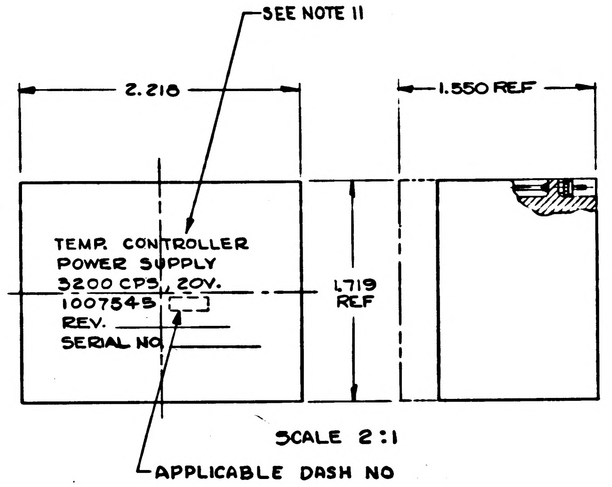
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Cagel 12 AUG 64
CHECKED R. Udovich 27 AUG 64
APPROVAL E.J.L.
APPROVAL 10-5-64
NASA APPROVAL W. J. Rhine 10-6-64
MIT APPROVAL 6 Oct 64

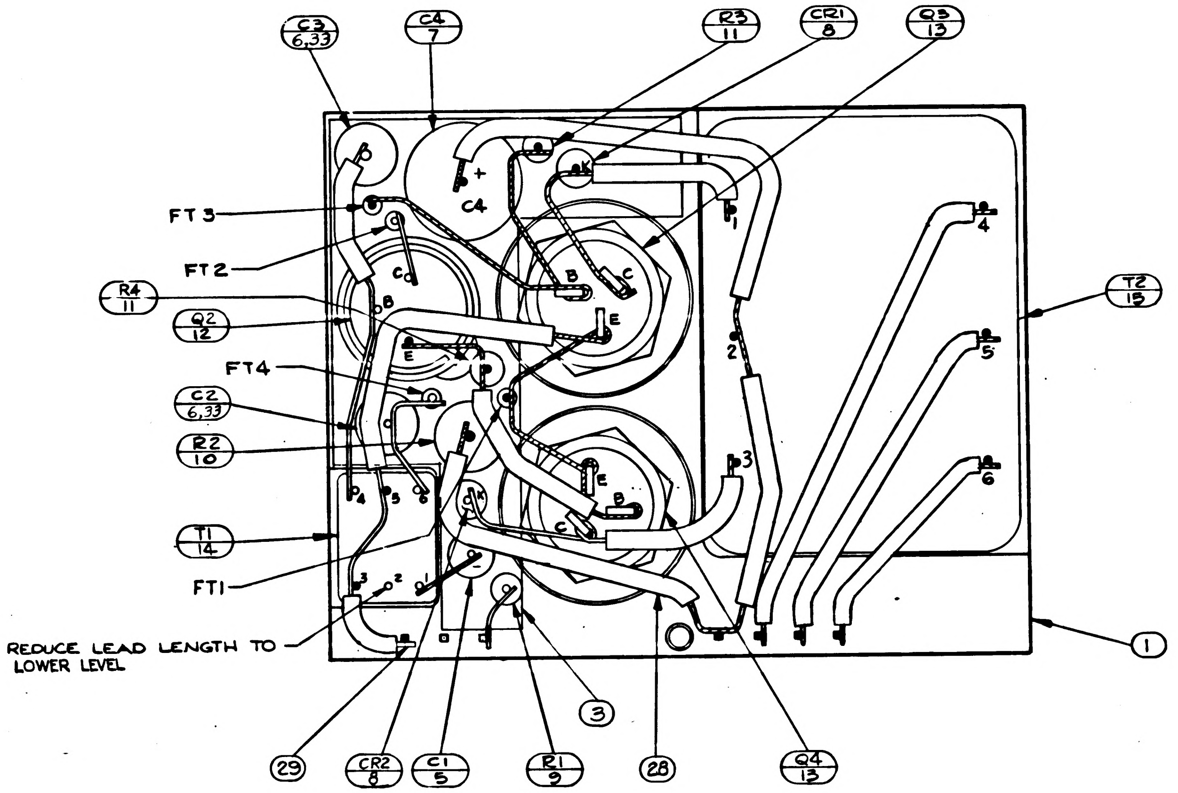
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

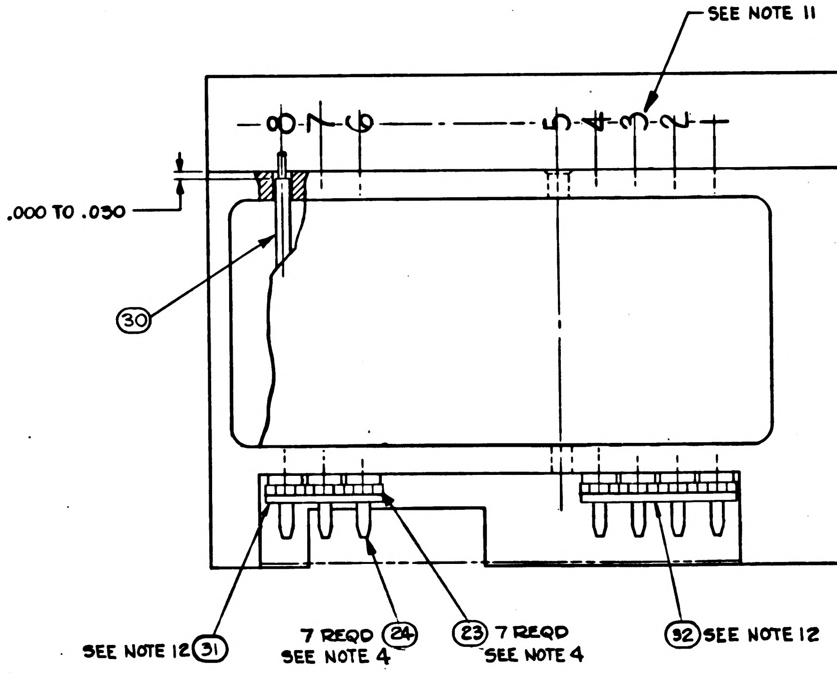
TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V.
MODULE ASSY

CODE IDENT NO.
SIZE E
1007545
SCALE 5:1
SHEET 2 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDHR 14334			
B		REVISED PER TDRR-17320		12-MAR-65	B.







NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD 'C' & CENTRALIZED
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. MUST MEET REQUIREMENTS OF ND 1002136.
5. SOLDER PER ND1002071
6. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
7. MOUNTING TORQUE FOR ITEM 20, 12^{+2}_{-2} INCH POUNDS.
8. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
9. FILL PER ND1002117
10. BLACK DOT & CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT & CLEAR WIRING INDICATES LOWER LEVEL WIRING.
11. MARK PIN NUMBERS .08 HIGH (WHITE) & ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 & SERIALIZE PER ND 1002023, CENTRALIZE AS SHOWN.
12. BOND FIND NO. 31 & 32 TO FIND NO. 23 PER ND 1002237
13. PROCURE PER PS 1007045.
14. ON ITEMS 3 AND 4
    BROKEN PATHS INDICATE SLEEVING
    'K' INDICATES CATHODE SIDE OF DIODE.
    FT( ) INDICATES FEED THRU.
    MINUS (-) INDICATES NEGATIVE END OF CAPACITOR
    PLUS (+) " POSITIVE " " "
    C INDICATES COLLECTOR LEAD OF TRANSISTOR
    B " BASE " " "
    E " EMITTER " " "
15. TYPICAL SLEEVING FOR CR1, CR2, R1, R3 & R4
16. TYPICAL SLEEVING FOR FT1 THRU FT4
17. AR DENOTES AS REQUIRED.
18. COAT THREADS AND ITEM 15 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
19. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
20. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		021	011				
		-	X		REF	1010049	SCHEMATIC
		X	-		REF	1009544	SCHEMATIC
		2	-		33	1010264-8	CAPACITOR, FIXED
		1	1		32	1008540-4	GASKET, CONNECTOR-MINIATURE
		1	1		31	1008540-3	GASKET, CONNECTOR-MINIATURE
		AR	AR		30	1006776-20	INSULATION SLEEVING
		AR	AR		29	1006757-1	WIRE ELEC. - .010 × .020
		AR	AR		28	1006776-21	INSULATION SLEEVING
		AR	AR		27	1006757-8	WIRE, ELEC. - .020 DIA.
		AR	AR		26	1006776-22	INSULATION SLEEVING
		2	2		25	1008070-75	WASHER, FLAT
		7	7		24	1006782-5	CONTACT, WRAPOST MALE MIN.
		7	7		23	1006775	INSULATOR, WRAPOST MALE MIN.
		2	2		22	1000093-15	SCREW, BUTTON HEAD
		2	2		21	1008025-2	INSULATOR, BUSHING
		2	2		20	MS20341-10B	HEX. NUT
		2	2		19	1008071-4	WASHER, FLAT
		2	2		18	1008024-1	WASHER, INSULATOR
		2	2		17	1008024-2	WASHER, INSULATOR
		2	2		16	1008021-1	BUSHING, INSULATOR
		1	1		15	1010338	TRANSFORMER
		1	1		14	1010329-1	TRANSFORMER, AUDIO
		1	1		13	1010269-2	TRANSISTOR *(MATCHED PAIR)*
		1	1		12	1010398-4	TRANSISTOR *(MATCHED PAIR)*
		2	2		11	1006750-1	RESISTOR, FIXED
		1	1		10	1010312-029	RESISTOR, FIXED
		1	1		9	1006750-51	RESISTOR, FIXED
		2	2		8	1010385	DIODE, SEMI-CONDUCTOR DEVICE
		1	1		7	1006789-002	CAPACITOR
		-	2		6	1010264-1	CAPACITOR, FIXED
		1	1		5	1006755-65	CAPACITOR, FIXED
		1	1		4	1015707	INSULATOR
		1	1		3	1015706	INSULATOR
					2		
		1	1		1	1015708	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - XXX ± .005 +
- . XX ± .02 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

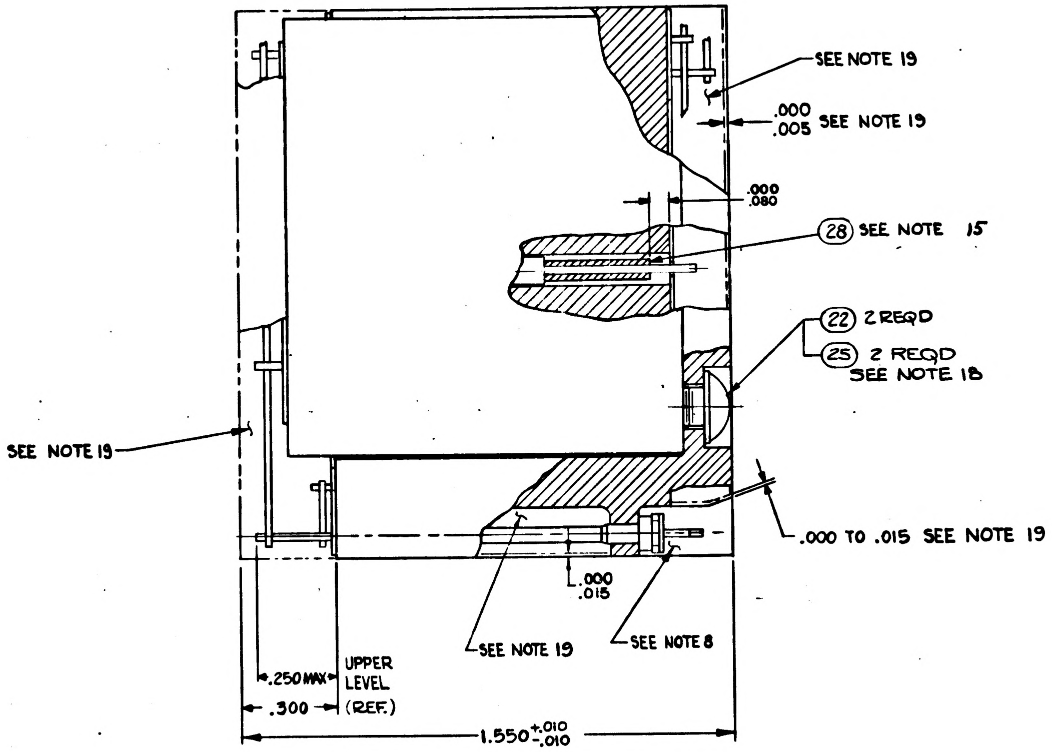
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orzel DATE 13 AUG 64
CHECKED Il Alrovich 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

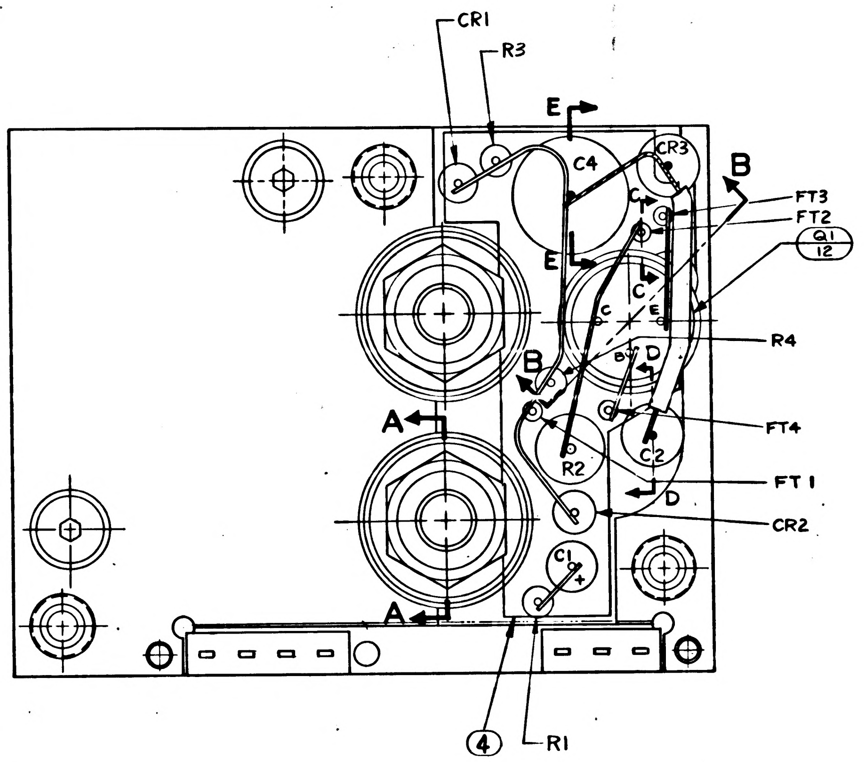
TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V
MODULE ASSY

CODE IDENT NO.
SIZE E
1007545
SCALE 5:1
SHEET 1 OF 2

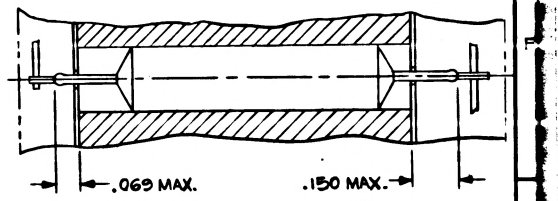
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 14334			wk
B		REVISED PER TDRR- 7323		12-MAR 6:	3



SEE NOTE 19
.000
.005 SEE NOTE 19
.000
.080
28 SEE NOTE 15
22 2 REQD
25 2 REQD
SEE NOTE 18
SEE NOTE 19
.000 TO .015 SEE NOTE 19
.000
.015
SEE NOTE 19
SEE NOTE 8
.250 MAX
UPPER LEVEL (REF.)
.300
1.550 +.010 -.010

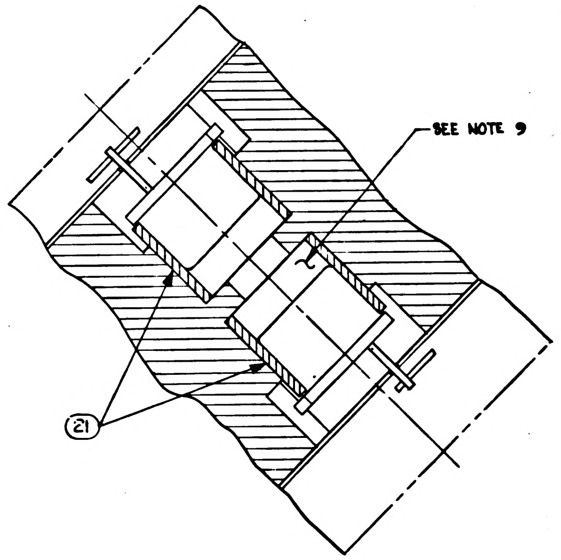


CR1
R3
E
B
C4
CR3
FT3
FT2
Q1
12
E
R4
B
D
A
FT4
R2
C2
FT1
D
CR2
C1
A
4
R1



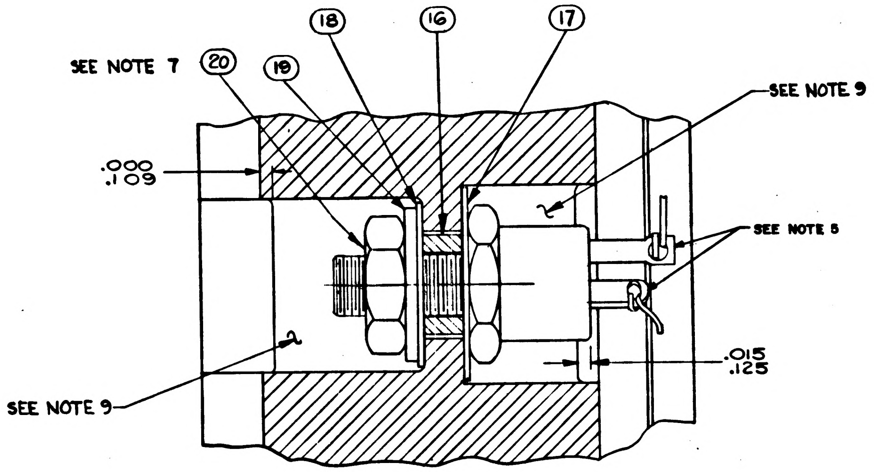
.069 MAX.
.150 MAX.

PARTIAL SECTION D-D
C2 & C3 ORIENTATION



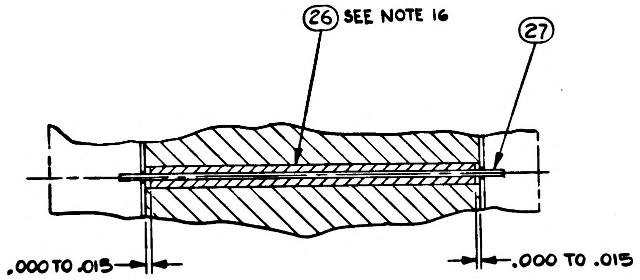
SEE NOTE 9
21

PARTIAL SECTION B-B



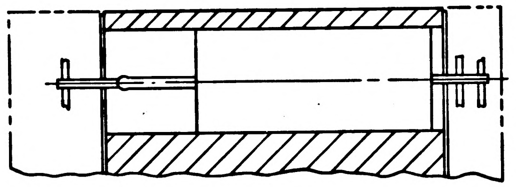
SEE NOTE 7
20
19
18
16
17
SEE NOTE 9
.000
.109
SEE NOTE 8
.015
.125
SEE NOTE 9

PARTIAL SECTION A-A (TYPICAL)
2 PLACES



26 SEE NOTE 16
27
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C
(TYPICAL)



PARTIAL SECTION E-E
C4 ORIENTATION

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ — + — + —
— — — — — —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

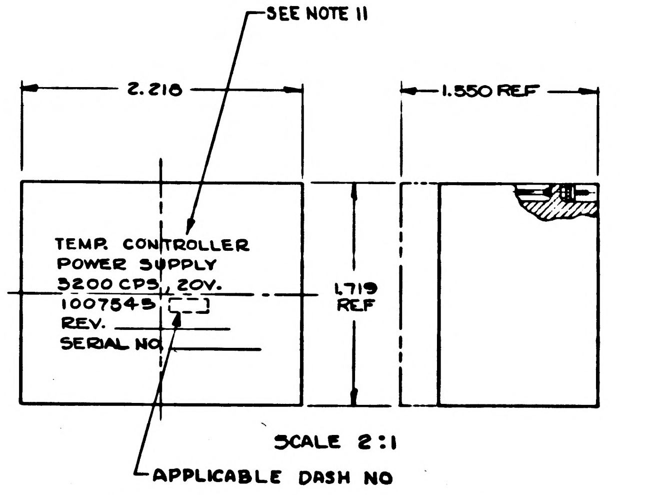
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 12 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL W J [illegible] 10-6-64
MIT APPROVAL

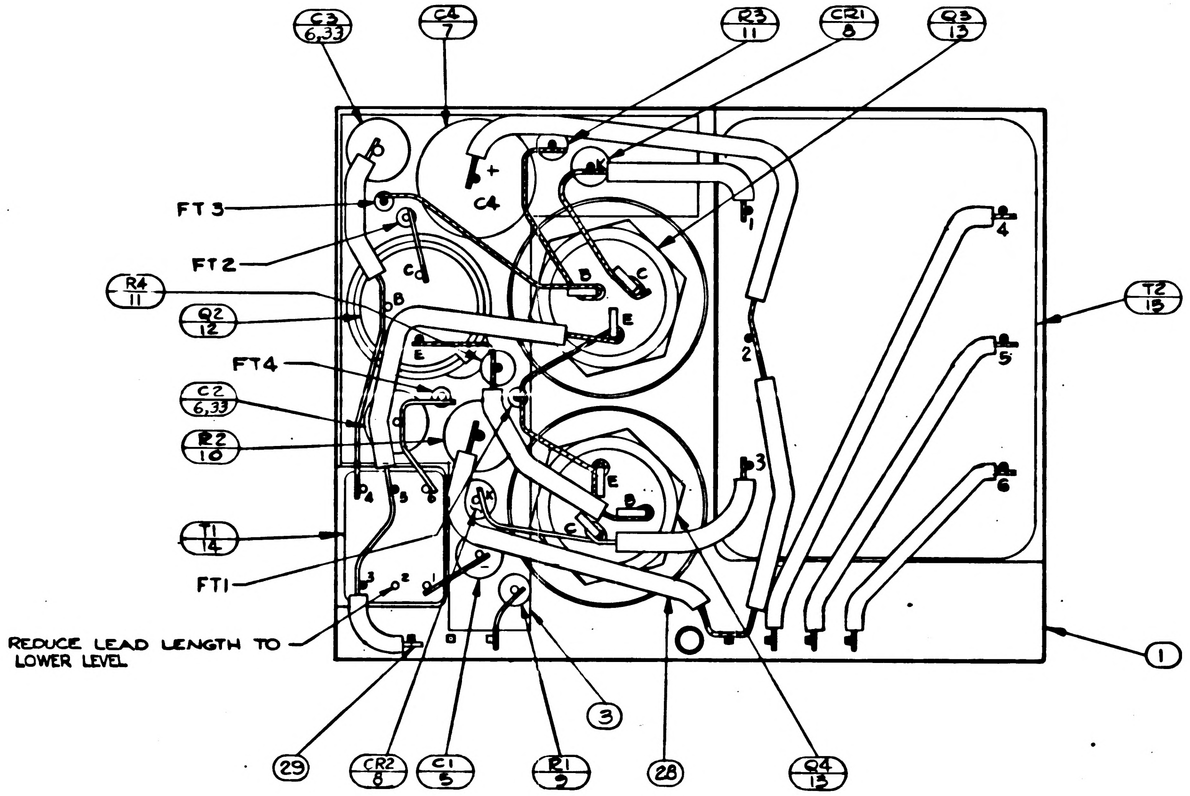
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V.
MODULE ASSY

CODE IDENT NO.
SIZE E
1007545
SCALE 5:1
SHEET 2 OF 2

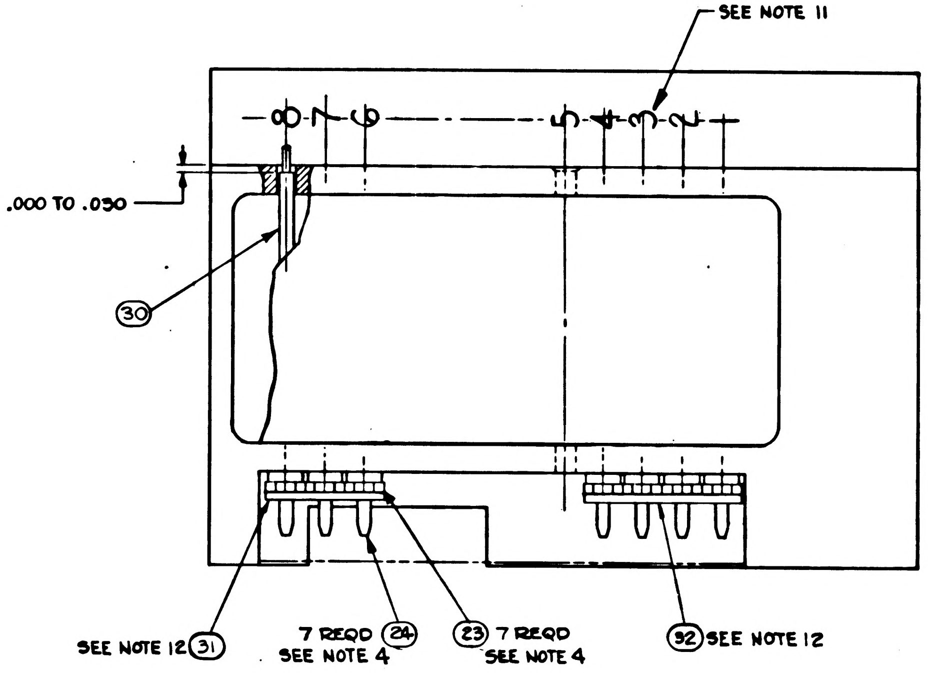
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 14334			
B		REVISED PER TDRR-17320		12-MAR-65	B.
C		REVISED PER TDRR 18106		3 APR 65	H.D.





NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD 'C' & CENTRALIZED
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. MUST MEET REQUIREMENTS OF ND1002136.
5. SOLDER PER ND1002071
6. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.



7. MOUNTING TORQUE FOR ITEM 20, 12^{+2}_{-2} INCH POUNDS.
8. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
9. FILL PER ND1002117
10. BLACK DOT & CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT & CLEAR WIRING INDICATES LOWER LEVEL WIRING.
11. MARK PIN NUMBERS .08 HIGH (WHITE) & ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 & SERIALIZE PER ND 1002023, CENTRALIZE AS SHOWN.
12. BOND FIND NO. 31 & 32 TO FIND NO. 23 PER ND 1002237
13. PROCURE PER PS 1007045.
14. ON ITEMS 3 AND 4
    BROKEN PATHS INDICATE SLEEVING
    'K' INDICATES CATHODE SIDE OF DIODE.
    FT( ) INDICATES FEED THRU.
    MINUS (-) INDICATES NEGATIVE END OF CAPACITOR
    PLUS (+) " POSITIVE " " "
    C INDICATES COLLECTOR LEAD OF TRANSISTOR
    B " BASE " " "
    E " EMITTER " " "
15. TYPICAL SLEEVING FOR CR1, CR2, R1, R3 & R4
16. TYPICAL SLEEVING FOR FT1 THRU FT4
17. AR DENOTES AS REQUIRED.
18. COAT THREADS AND ITEM 15 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
19. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
20. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.

QUANTITY REQUIRED						LIST OF PARTS AND MATERIALS	
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		-	☒		REF.	1010049	SCHEMATIC
		☒	-		REF.	1009544	SCHEMATIC
		2	-		33	1010264-8	CAPACITOR, FIXED
		1	1		32	1008540-4	GASKET, CONNECTOR-MINIATURE
		1	1		31	1008540-3	GASKET, CONNECTOR-MINIATURE
		AR	AR		30	1006776-20	INSULATION SLEEVING
		AR	AR		29	1006757-1	WIRE ELEC. - .010 x .020
		AR	AR		28	1006776-21	INSULATION SLEEVING
		AR	AR		27	1006757-8	WIRE, ELEC. - .020 DIA.
		AR	AR		26	1006776-22	INSULATION SLEEVING
		2	2		25	1008070-75	WASHER, FLAT
		7	7		24	1006782-5	CONTACT, WRAPOST MALE MIN.
		7	7		23	1006775	INSULATOR, WRAPOST MALE MIN.
		2	2		22	1000093-13	SCREW, BUTTON HEAD
		2	2		21	1008025-2	INSULATOR, BUSHING
		2	2		20	MS20341-10B	HEX. NUT
		2	2		19	1008071-4	WASHER, FLAT
		2	2		18	1008024-1	WASHER, INSULATOR
		2	2		17	1008024-2	WASHER, INSULATOR
		2	2		16	1008021-1	BUSHING, INSULATOR
		1	1		15	1010338	TRANSFORMER
		1	1		14	1010329-1	TRANSFORMER, AUDIO
		1	1		13	1010269-2	TRANSISTOR (MATCHED PAIR)
		1	1		12	1010398-4	TRANSISTOR (MATCHED PAIR)
		2	2		11	1006750-1	RESISTOR, FIXED
		1	1		10	1010312-029	RESISTOR, FIXED
		1	1		9	1006750-51	RESISTOR, FIXED
		2	2		8	1010385	DIODE, SEMI-CONDUCTOR DEVICE
		1	1		7	1006789-002	CAPACITOR
		-	2		6	1010264-1	CAPACITOR, FIXED
		1	1		5	1006755-65	CAPACITOR, FIXED
		1	1		4	1015707	INSULATOR
		1	1		3	1015706	INSULATOR
					2		
		1	1		1	1015708	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± - XXX ± .005 ±
- . XX ± .02 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

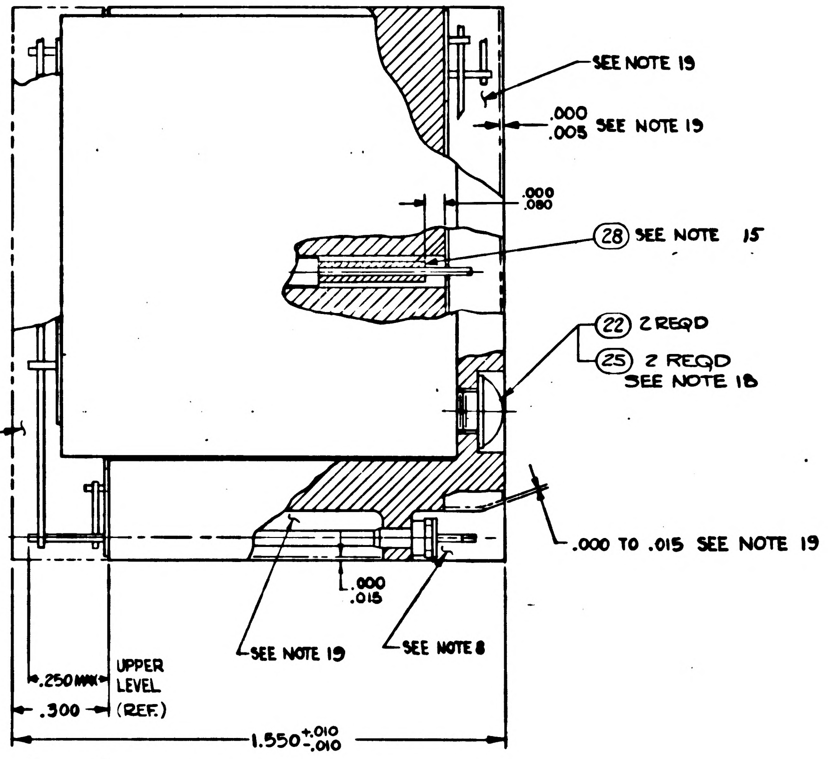
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Ozgal DATE 13 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL
MIT APPROVAL

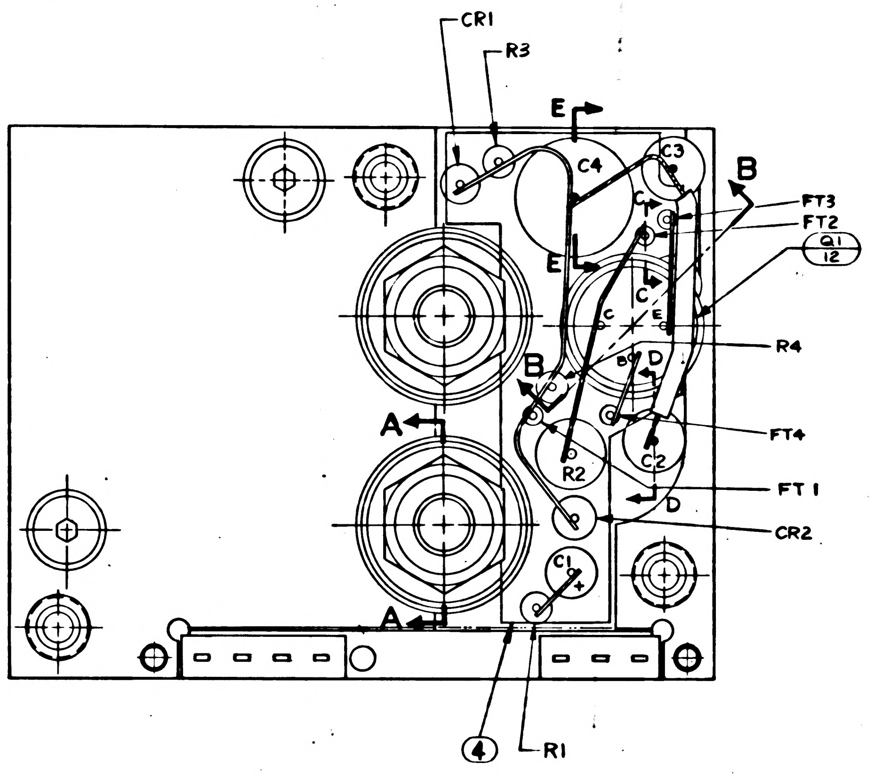
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

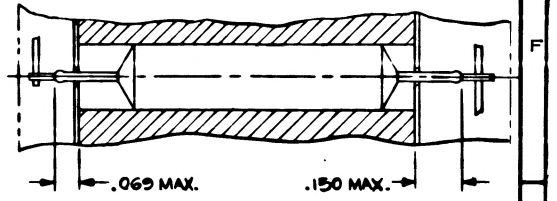
TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V
MODULE ASSY

CODE IDENT NO.
SIZE E
1007545
SCALE 5:1
SHEET 1 OF 2

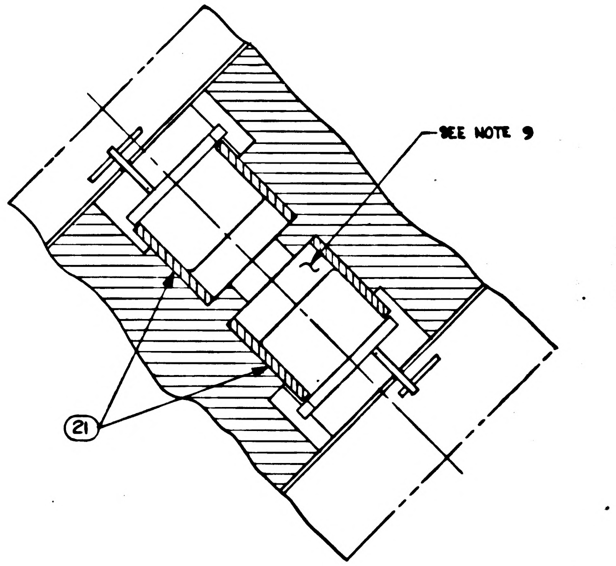
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
-					
A		REVISED PER TDRR 14334			
B		REVISED PER TDRR 7320		12 MAR 65	EF
C		REVISED PER TDRR 5 06		9 APR 65	ITO EF


SEE NOTE 19
.000 .005 SEE NOTE 19
.000 .080
(28) SEE NOTE 15
(22) 2 REQD
(25) 2 REQD SEE NOTE 18
SEE NOTE 19
.000 TO .015 SEE NOTE 19
.000 .015
SEE NOTE 19
SEE NOTE 8
.250 MAX
UPPER LEVEL (REF.)
.300
1.550 +.010 -.010

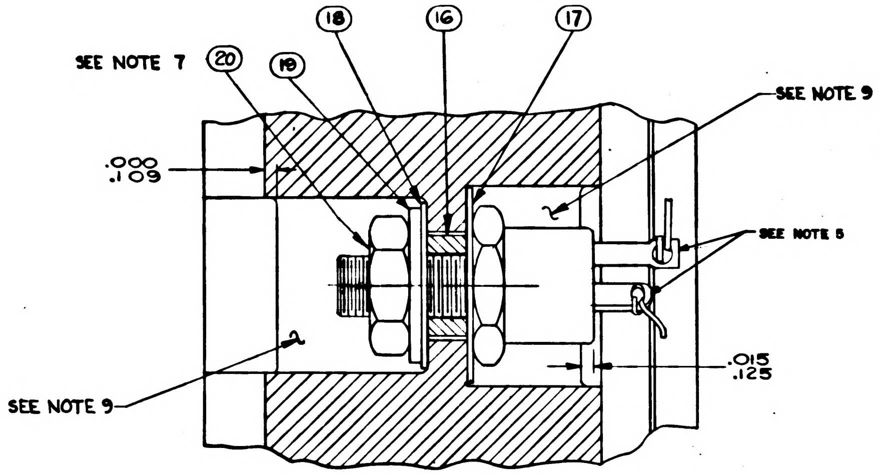

CR1
R3
E
C4
C3
B
FT3
FT2
Q1 12
E
C
R4
B
D
A
FT4
R2
C2
FT1
D
CR2
C1
A
(4)
R1


.069 MAX.
.150 MAX.

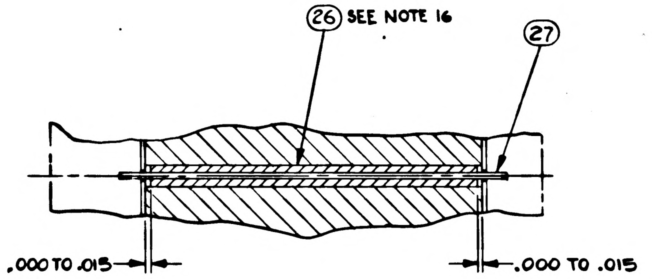
PARTIAL SECTION D-D
C2 & C3 ORIENTATION


SEE NOTE 9
(21)

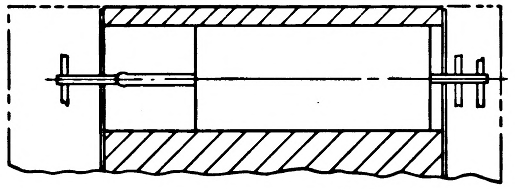
PARTIAL SECTION B-B


SEE NOTE 7
(20)
(19)
(18)
(16)
(17)
SEE NOTE 9
.000 .109
SEE NOTE 8
SEE NOTE 9
.015 .125

PARTIAL SECTION A-A (TYPICAL)
2 PLACES


(26) SEE NOTE 16
(27)
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C
(TYPICAL)



PARTIAL SECTION E-E
C4 ORIENTATION

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Clegl 18 AUG 64
CHECKED [illegible] 27 AUG 64
APPROVAL [illegible]
APPROVAL [illegible] 10-5-64
NASA APPROVAL W J Rh 10-6-64
MIT APPROVAL [illegible] 6 Oct 64

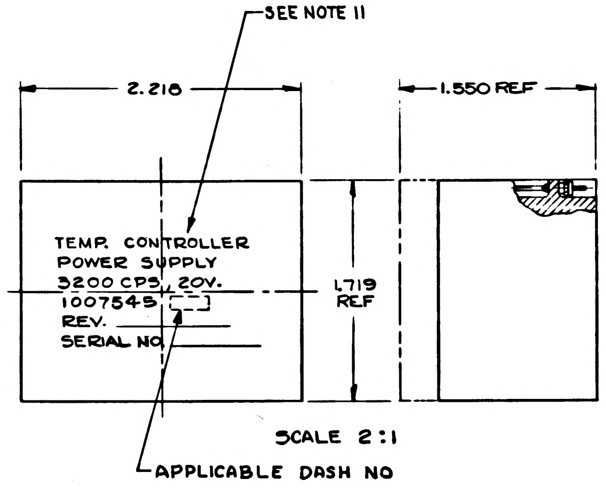
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

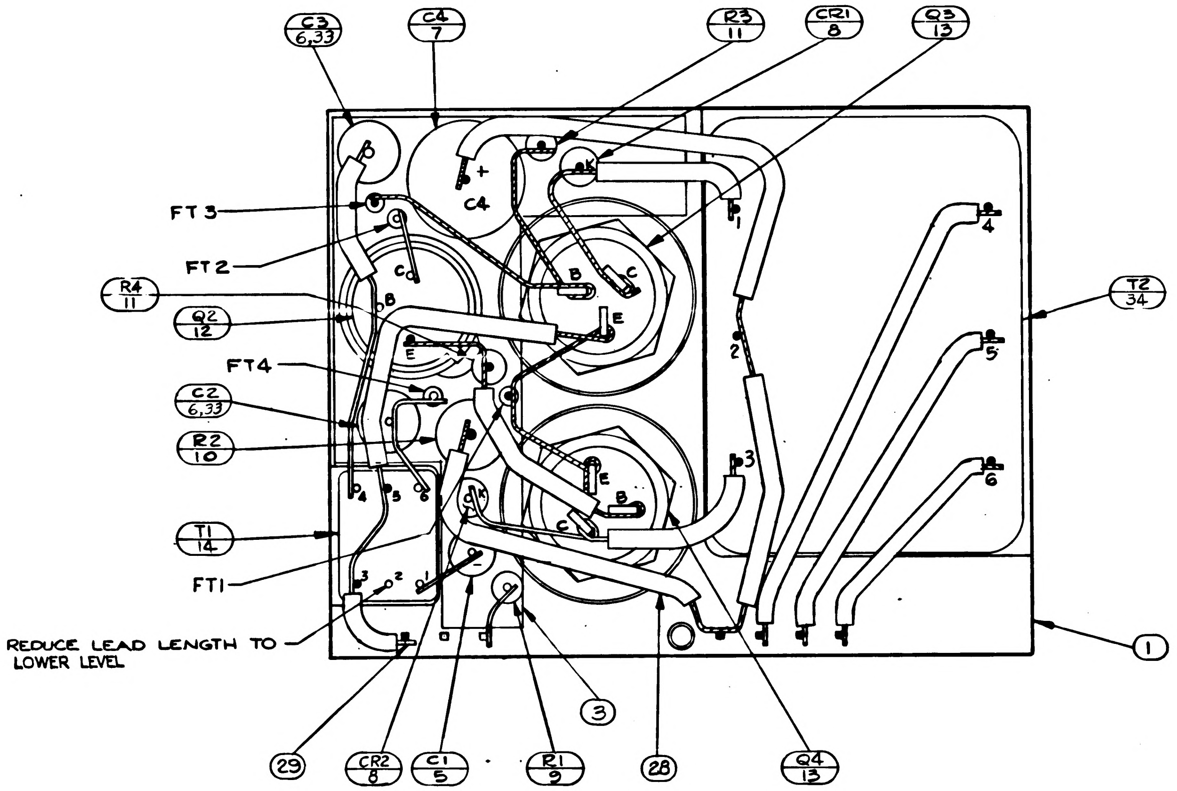
TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V.
MODULE ASSY

CODE IDENT NO.
SIZE E
1007545
SCALE 5:1
SHEET 2 OF 2

1007545 C

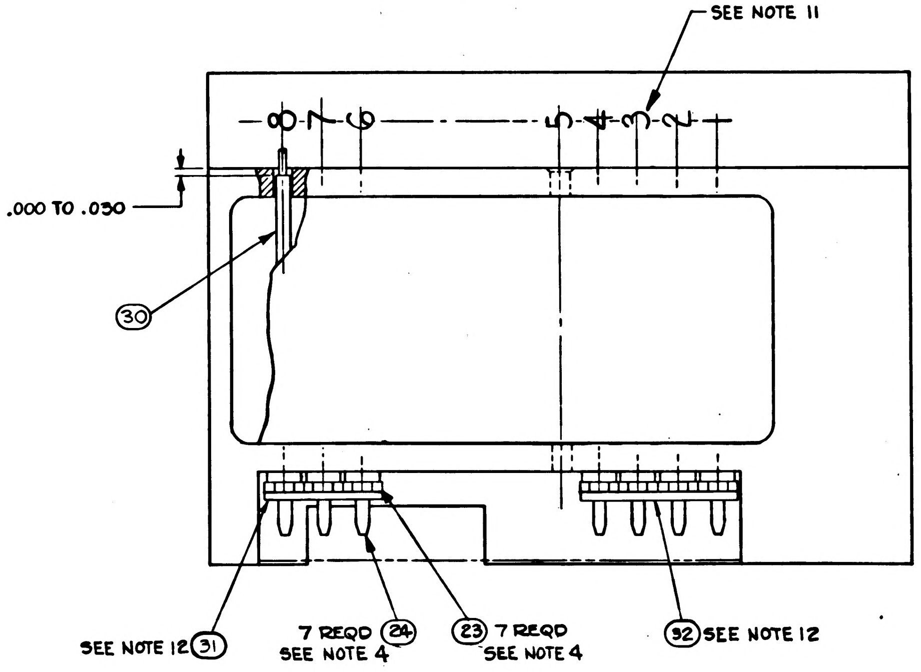
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 14334			
B		REVISED PER TDRR-17320		2-MAR-65	B.
C		REVISED PER TDRR 18106			
D		REVISED PER TDRR 18956		JAN 65	





NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD 'C' & CENTRALIZED
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. MUST MEET REQUIREMENTS OF ND 1002136.
5. SOLDER PER ND 1002071
6. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.



7. MOUNTING TORQUE FOR ITEM 20, 12^{+2}_{-2} INCH POUNDS.
8. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
9. FILL PER ND1002117
10. BLACK DOT & CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT & CLEAR WIRING INDICATES LOWER LEVEL WIRING.
11. MARK PIN NUMBERS .08 HIGH (WHITE) & ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 & SERIALIZE PER ND 1002023, CENTRALIZE AS SHOWN.
12. BOND FIND NO. 31 & 32 TO FIND NO. 23 PER ND 1002237
13. PROCURE PER PS 1007045.
14. ON ITEMS 3 AND 4
    - BROKEN PATHS INDICATE SLEEVING
    - 'K' INDICATES CATHODE SIDE OF DIODE.
    - FT( ) INDICATES FEED THRU.
    - MINUS (-) INDICATES NEGATIVE END OF CAPACITOR
    - PLUS (+) " POSITIVE " " "
    - C INDICATES COLLECTOR LEAD OF TRANSISTOR
    - B " BASE " " "
    - E " EMITTER " " "
15. TYPICAL SLEEVING FOR CR1, CR2, R1, R3 & R4
16. TYPICAL SLEEVING FOR FT1 THRU FT4
17. AR DENOTES AS REQUIRED.
18. COAT THREADS AND ITEM 15 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
19. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
20. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.

		-021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		-	X		REF.	1010049	SCHEMATIC
		X	--		REF.	1009544	SCHEMATIC
		1	1		34	1010338-001	TRANSFORMER
		2	-		33	1010264-8	CAPACITOR, FIXED
		1	1		32	1008540-4	GASKET, CONNECTOR-MINIATURE
		1	1		31	1008540-3	GASKET, CONNECTOR-MINIATURE
		AR	AR		30	1006776-20	INSULATION SLEEVING
		AR	AR		29	1006757-1	WIRE ELEC.-.010×.020
		AR	AR		28	1006776-21	INSULATION SLEEVING
		AR	AR		27	1006757-8	WIRE, ELEC.-.020 DIA.
		AR	AR		26	1006776-22	INSULATION SLEEVING
		2	2		25	1008070-75	WASHER, FLAT
		7	7		24	1006782-5	CONTACT, WRAPOST MALE MIN.
		7	7		23	1006775	INSULATOR, WRAPOST MALE MIN.
		2	2		22	1000093-13	SCREW, BUTTON HEAD
		2	2		21	1008025-2	INSULATOR, BUSHING
		2	2		20	MS20341-10B	HEX. NUT
		2	2		19	1008071-4	WASHER, FLAT
		2	2		18	1008024-1	WASHER, INSULATOR
		2	2		17	1008024-2	WASHER, INSULATOR
		2	2		16	1008021-1	BUSHING, INSULATOR
		~~1~~	~~1~~		15	~~1010338~~	~~TRANSFORMER~~
		1	1		14	1010329-1	TRANSFORMER, AUDIO
		1	1		13	1010269-2	TRANSISTOR (MATCHED PAIR)
		1	1		12	1010398-4	TRANSISTOR (MATCHED PAIR)
		2	2		11	1006750-1	RESISTOR, FIXED
		1	1		10	1010312-029	RESISTOR, FIXED
		1	1		9	1006750-51	RESISTOR, FIXED
		2	2		8	1010385	DIODE, SEMI-CONDUCTOR DEVICE
		1	1		7	1006789-002	CAPACITOR
		-	2		6	1010264-1	CAPACITOR, FIXED
		1	1		5	1006755-65	CAPACITOR, FIXED
		1	1		4	1015707	INSULATOR
		1	1		3	1015706	INSULATOR
					2		
		1	1		1	1015708	HEATSINK

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - .XXX ± .005 +
- . .XX ± .02 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

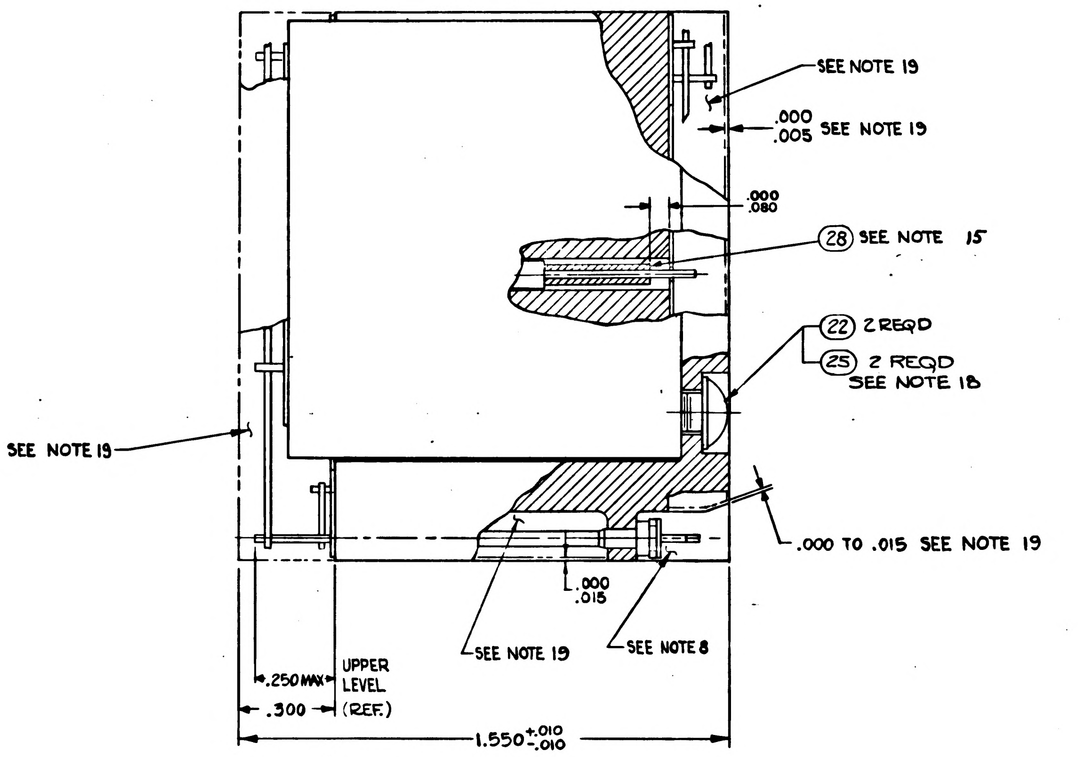
MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN Orzel DATE 13 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL
MIT APPROVAL

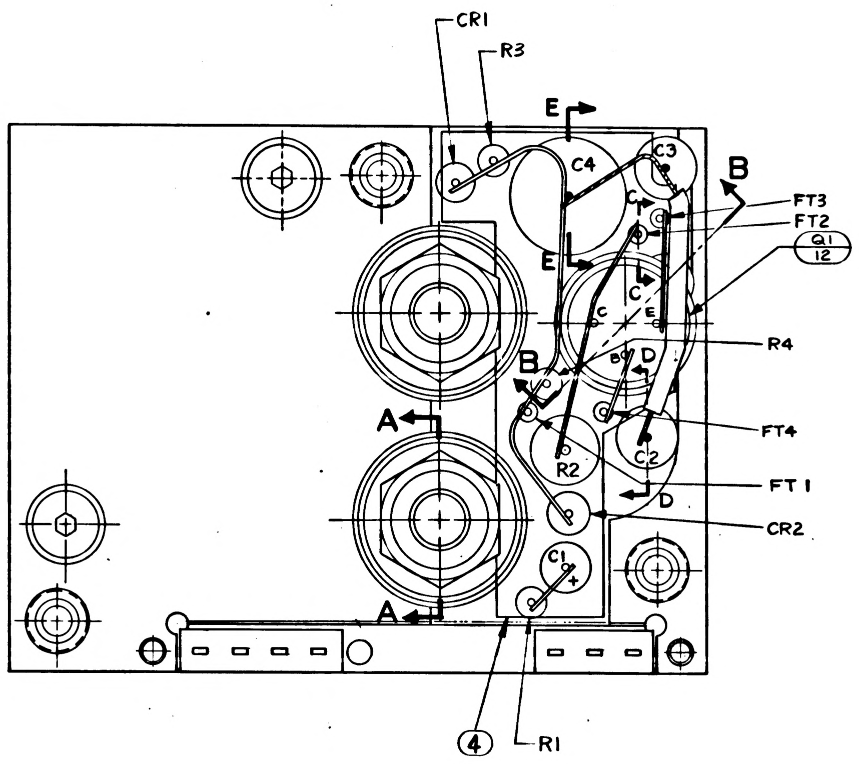
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

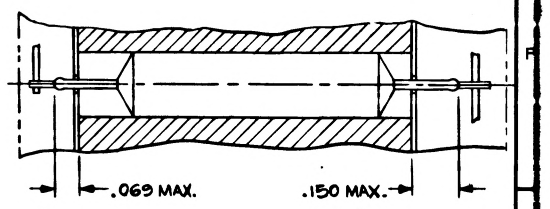
TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007545
SCALE 5:1
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 14334			
B		REVISED PER TDRR- 7320		12- MAR 6	
C		REVISED PER TDRR 5 06		9 APR 65	
D		REVISED PER TDRR 8055		17 MAY 65	


SEE NOTE 19
.000 .005 SEE NOTE 19
.000 .080
(28) SEE NOTE 15
(22) 2 REQD
(25) 2 REQD SEE NOTE 18
SEE NOTE 19
.000 TO .015 SEE NOTE 19
.000 .015
SEE NOTE 19
SEE NOTE 8
.250 MAX
UPPER LEVEL (REF.)
.300
1.550 +.010 -.010


CR1
R3
E
C4
C3
B
FT3
FT2
Q1 12
C
E
R4
B
D
A
FT4
R2
C2
FT 1
D
CR2
C1
A
(4)
R1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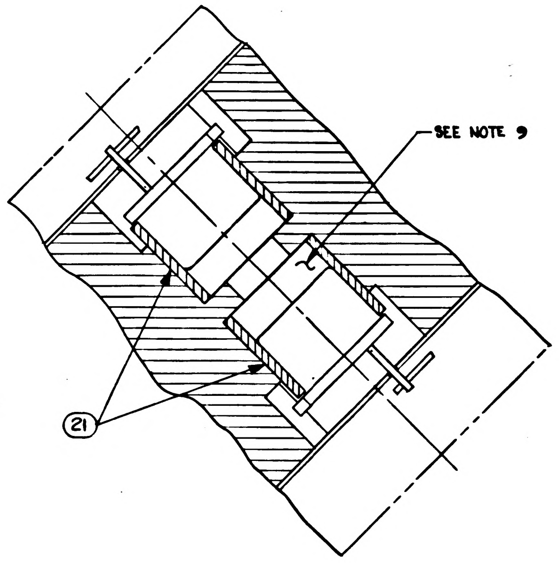
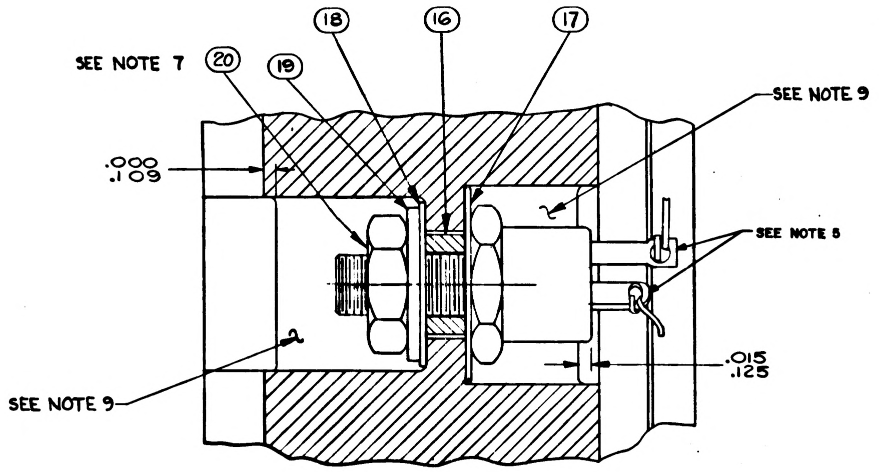
.150 MAX.

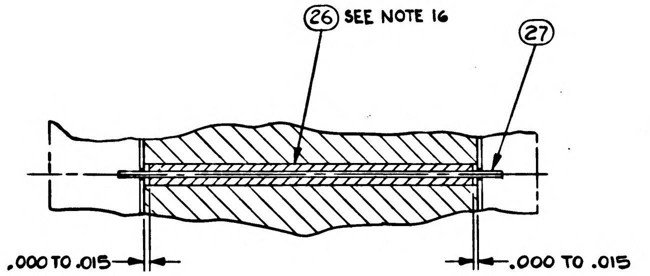
PARTIAL SECTION D-D
C2 & C3 ORIENTATION


SEE NOTE 9
(21)

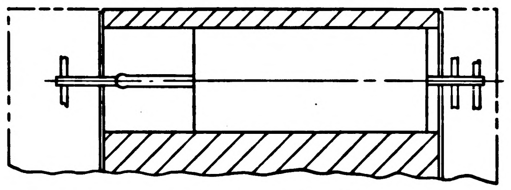
PARTIAL SECTION B-B


SEE NOTE 7
(20)
(19)
(18)
(16)
(17)
SEE NOTE 9
.000 .109
SEE NOTE 8
.015 .125
SEE NOTE 9

PARTIAL SECTION A-A (TYPICAL)
2 PLACES


(26) SEE NOTE 16
(27)
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C
(TYPICAL)



PARTIAL SECTION E-E
C4 ORIENTATION

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ — + — + —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN 12 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL 6 Oct 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V.
MODULE ASSY

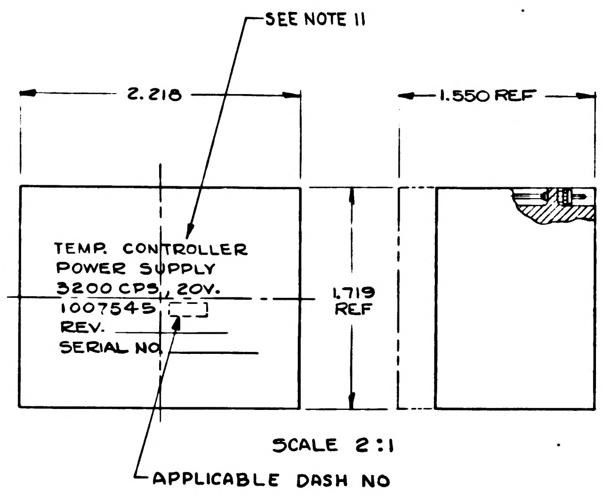
CODE IDENT NO. 80230
SIZE E
1007545
SCALE 5:1
SHEET 2 OF 2

TABLE I

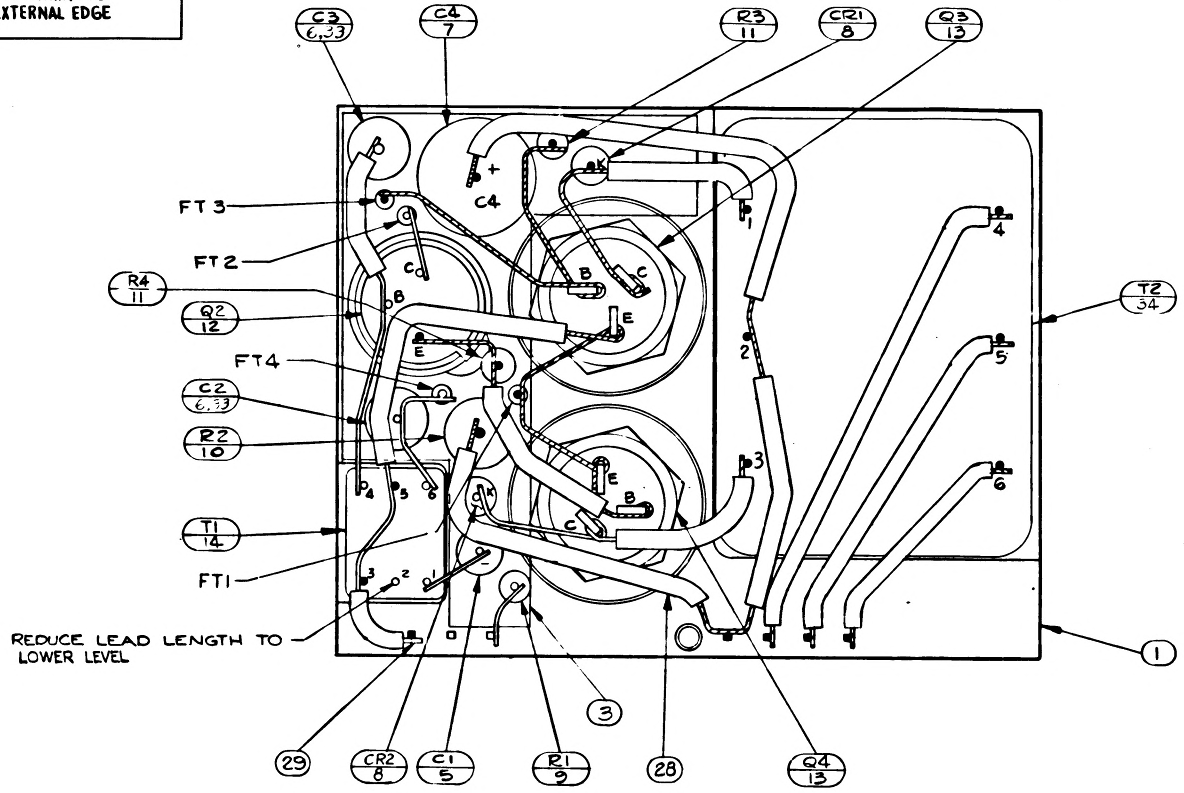
CONFIGURATION	MAT	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER AT PERIMETER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	ADHESIVE	.12 MIN 100% OF PERIMETER .25 MIN 80% OF PERIMETER	.25 MIN 100% OF PERIMETER	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	ADHESIVE	CORNER FILLET & VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	.25 MIN 100% OF PERIMETER	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	PRIMER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 TO .06 OF EXTERNAL EDGE

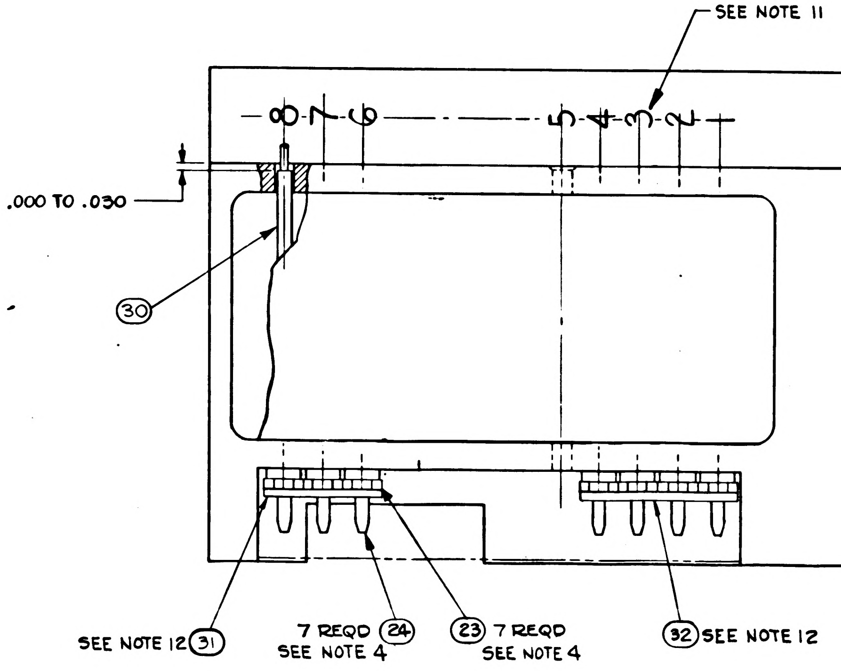
REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 14334			
B		REVISED PER TDRR-17320		12-MAR-65	B. EF
C		REVISED PER TDRR 18106		9 APR 65	HTO EF
D		REVISED PER TDRR 18955		17 MAY 65	
E		REVISED PER TDRR 19391		2 JUN 65	EF



SCALE 2:1





NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD 'C' & CENTRALIZED
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. MUST MEET REQUIREMENTS OF ND 1002136.
5. SOLDER PER ND 1002071
6. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
7. MOUNTING TORQUE FOR ITEM 20, 12^{+2}_{-2} INCH POUNDS.
8. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
9. FILL PER ND1002117
10. BLACK DOT & CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT & CLEAR WIRING INDICATES LOWER LEVEL WIRING.
11. MARK PIN NUMBERS .08 HIGH (WHITE) & ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 & SERIALIZE PER ND 1002023, CENTRALIZE AS SHOWN.
12. BOND FIND NO. 31 & 32 TO FIND NO. 23 PER ND 1002237
13. PROCURE PER PS 1007045.
14. ON ITEMS 3 AND 4
    BROKEN PATHS INDICATE SLEEVING
    'K' INDICATES CATHODE SIDE OF DIODE.
    FT( ) INDICATES FEED THRU.
    MINUS (-) INDICATES NEGATIVE END OF CAPACITOR
    PLUS (+) " POSITIVE " " "
    C INDICATES COLLECTOR LEAD OF TRANSISTOR
    B " BASE " " "
    E " EMITTER " " "
15. TYPICAL SLEEVING FOR CR1, CR2, R1, R3 & R4
16. TYPICAL SLEEVING FOR FT1 THRU FT4
17. AR DENOTES AS REQUIRED.
18. COAT THREADS AND ITEM 15 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
19. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
20. ~~BOND A .25 MIN WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
21. *CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF PRIMER BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE I. PRIMER TO CONSIST OF SIX PARTS BY VOLUME OF 1012504-1 AND ONE PART BY VOLUME OF 1012504-2. APPLY MATERIAL AND PRIMER AS INDICATED IN TABLE I.*

	011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	☒		REF	1010049	SCHEMATIC
☒	-		REF	1009544	SCHEMATIC
1	1		34	1010338-001	TRANSFORMER
2	-		33	1010264-8	CAPACITOR, FIXED
1	1		32	1008540-4	GASKET, CONNECTOR-MINIATURE
1	1		31	1008540-3	GASKET, CONNECTOR-MINIATURE
AR	AR		30	1006776-20	INSULATION SLEEVING
AR	AR		29	1006757-1	WIRE ELEC. - .010 × .020
AR	AR		28	1006776-21	INSULATION SLEEVING
AR	AR		27	1006757-8	WIRE, ELEC. ~~.020~~ DIA.
AR	AR		26	1006776-22	INSULATION SLEEVING
2	2		25	1008070-75	WASHER, FLAT
7	7		24	1006782-5	CONTACT, WRAPOST MALE MIN.
7	7		23	1006775	INSULATOR, WRAPOST MALE MIN.
2	2		22	1000093-13	SCREW, BUTTON HEAD
2	2		21	1008025-2	INSULATOR, BUSHING
2	2		20	MS20341-10B	HEX. NUT
2	2		19	1008071-4	WASHER, FLAT
2	2		18	1008024-1	WASHER, INSULATOR
2	2		17	1008024-2	WASHER, INSULATOR
2	2		16	1008021-1	BUSHING, INSULATOR
~~1~~	~~1~~		15	~~1010338~~	~~TRANSFORMER~~
1	1		14	1010329-1	TRANSFORMER, AUDIO
1	1		13	1010269-2	TRANSISTOR *(MATCHED PAIR)*
1	1		12	1010398-4	TRANSISTOR *(MATCHED PAIR)*
2	2		11	1006750-1	RESISTOR, FIXED
1	1		10	1010312-029	RESISTOR, FIXED
1	1		9	1006750-51	RESISTOR, FIXED
2	2		8	1010385	DIODE, SEMI-CONDUCTOR DEVICE
1	1		7	1006789-002	CAPACITOR
-	2		6	1010264-1	CAPACITOR, FIXED
1	1		5	1006755-65	CAPACITOR, FIXED
1	1		4	1015707	INSULATOR
	1		3	1015706	INSULATOR
			2		
1	1		1	1015708	HEATSINK

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - XXX ± .005 +
- . XX ± .02 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orzel DATE 13 AUG 64
CHECKED Bsowich 27 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

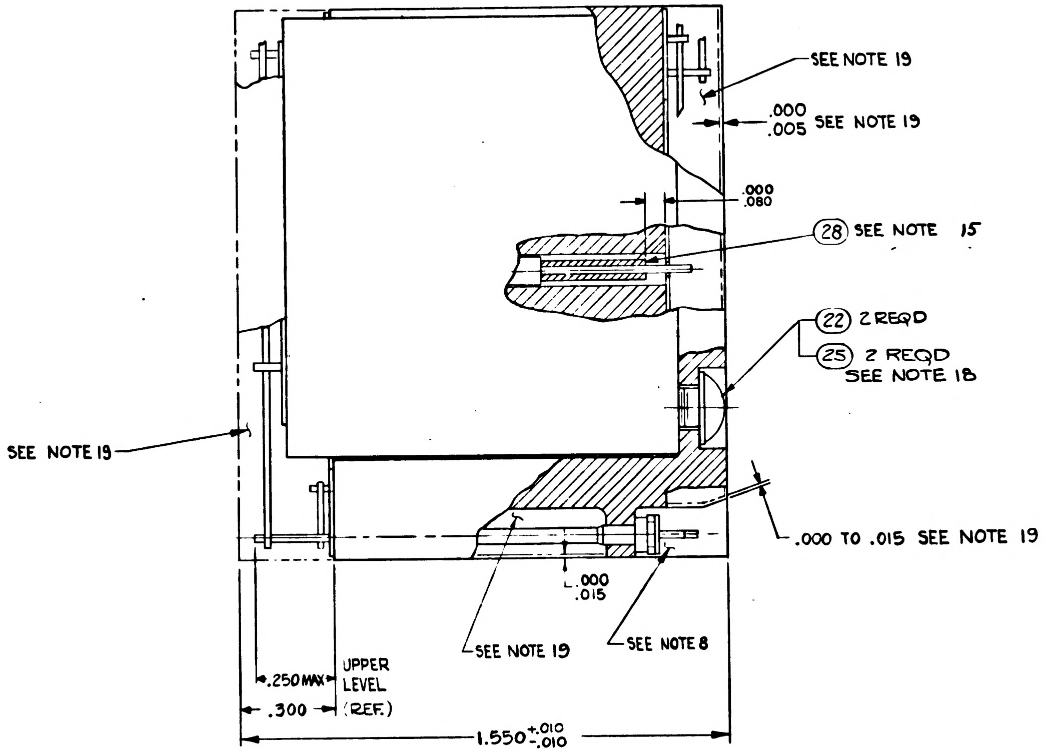
MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

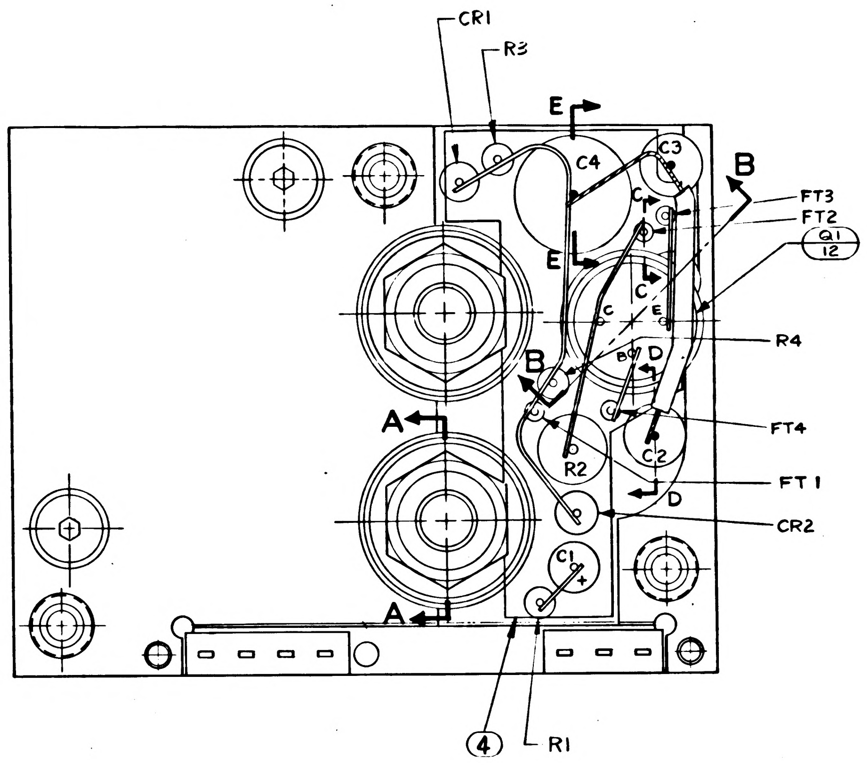
TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007545
SCALE 5:1
SHEET 1 OF 2

1007545 E

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 14334			
B		REVISED PER TDRR-17320		12-MAR-65	B.
C		REVISED PER TDRR 18106		9 APR 65	HTO
D		REVISED PER TDRR 18955		17 MAY 65	
E		REVISED PER TDRR 19391		2 JUN 65	


SEE NOTE 19
.000
.005 SEE NOTE 19
.000
.080
28 SEE NOTE 15
22 2 REQD
25 2 REQD
SEE NOTE 18
SEE NOTE 19
.000 TO .015 SEE NOTE 19
.000
.015
SEE NOTE 19
SEE NOTE 8
.250 MAX
.300
UPPER LEVEL (REF.)
1.550 +.010 -.010


CR1
R3
E
C4
C3
B
FT3
FT2
Q1
12
E
C
C
E
R4
B
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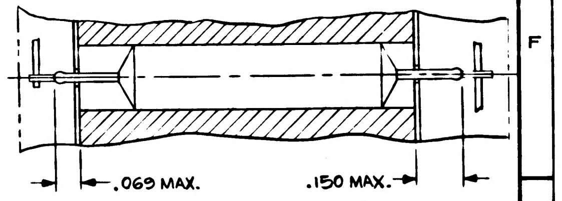
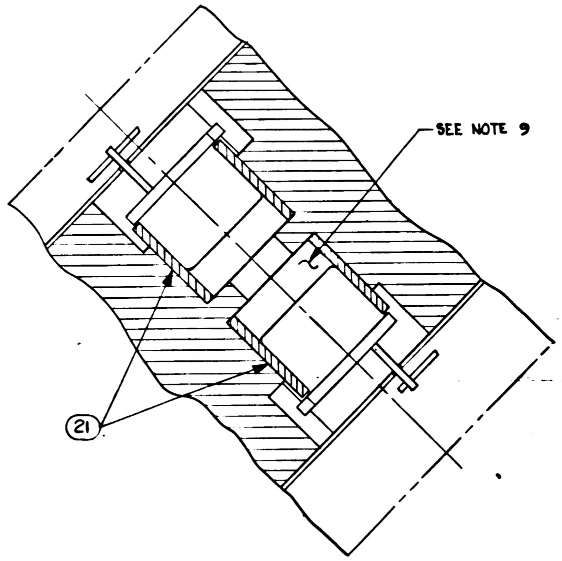
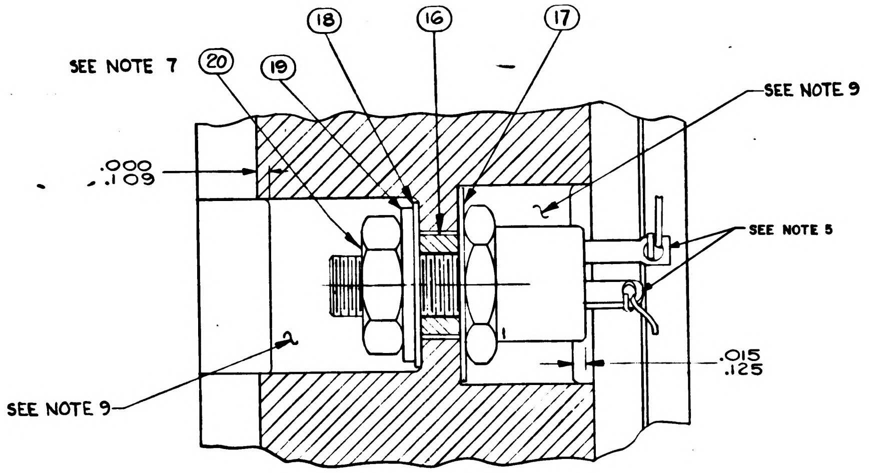
D
CR2
C1
A
4
R1


.069 MAX.
.150 MAX.

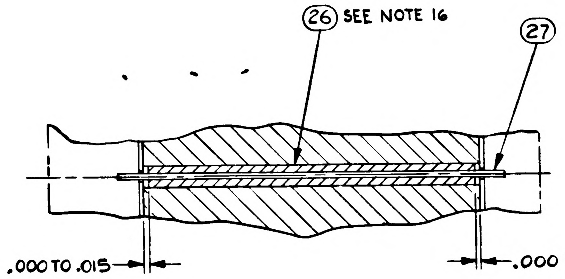
PARTIAL SECTION D-D
C2 & C3 ORIENTATION


SEE NOTE 9
21

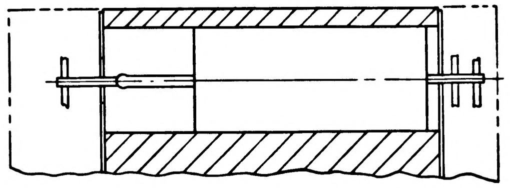
PARTIAL SECTION B-B


SEE NOTE 7
20
19
18
16
17
SEE NOTE 9
.000
.109
SEE NOTE 5
.015
.125
SEE NOTE 9

PARTIAL SECTION A-A (TYPICAL)
2 PLACES


26 SEE NOTE 16
27
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C
(TYPICAL)



PARTIAL SECTION E-E
C4 ORIENTATION

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ — + - + -
— — — — — —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Oagel 12 AUG 64
CHECKED ... 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V.
MODULE ASSY

CODE IDENT NO 80230
SIZE E
1007545
SCALE 5:1
SHEET 2 OF 2

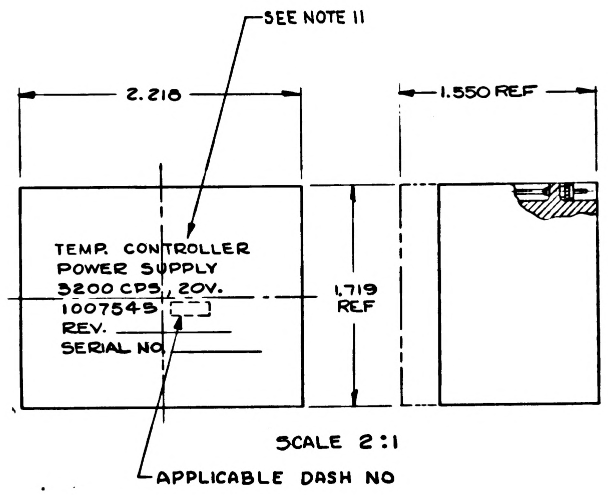
1007545 E

TABLE I

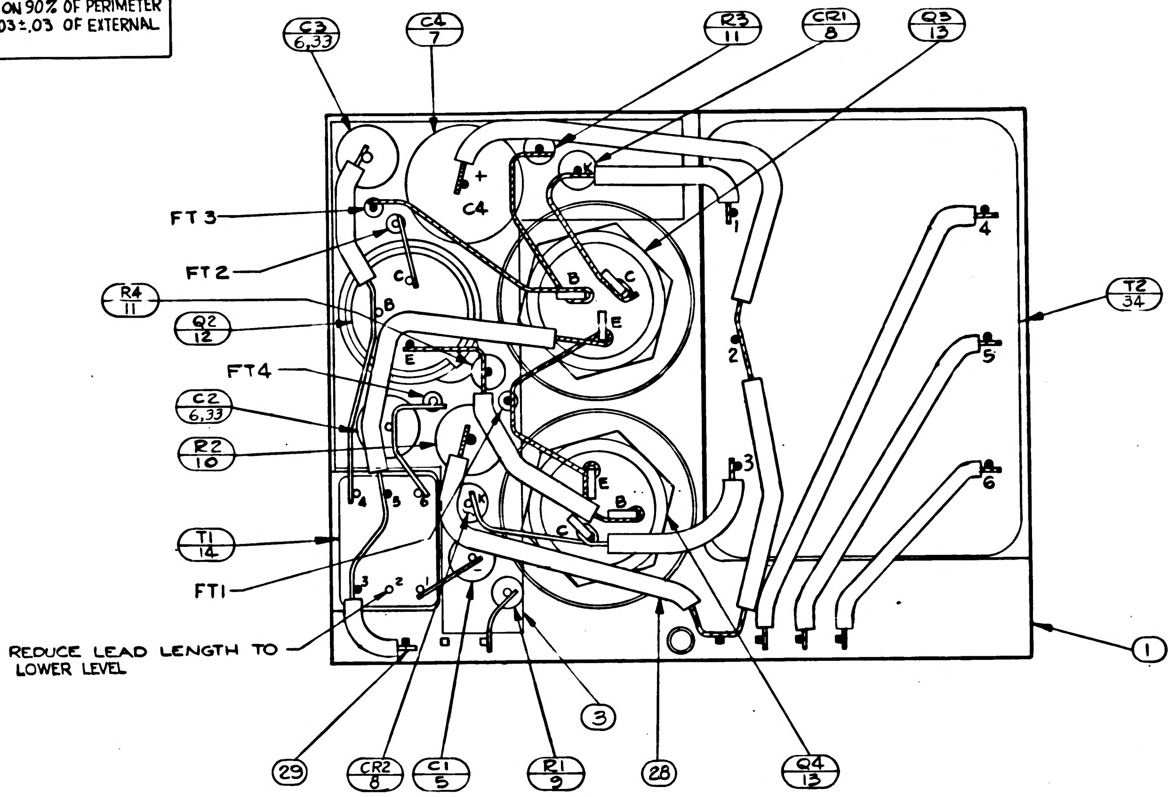
CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03±.03 OF EXTERNAL EDGE

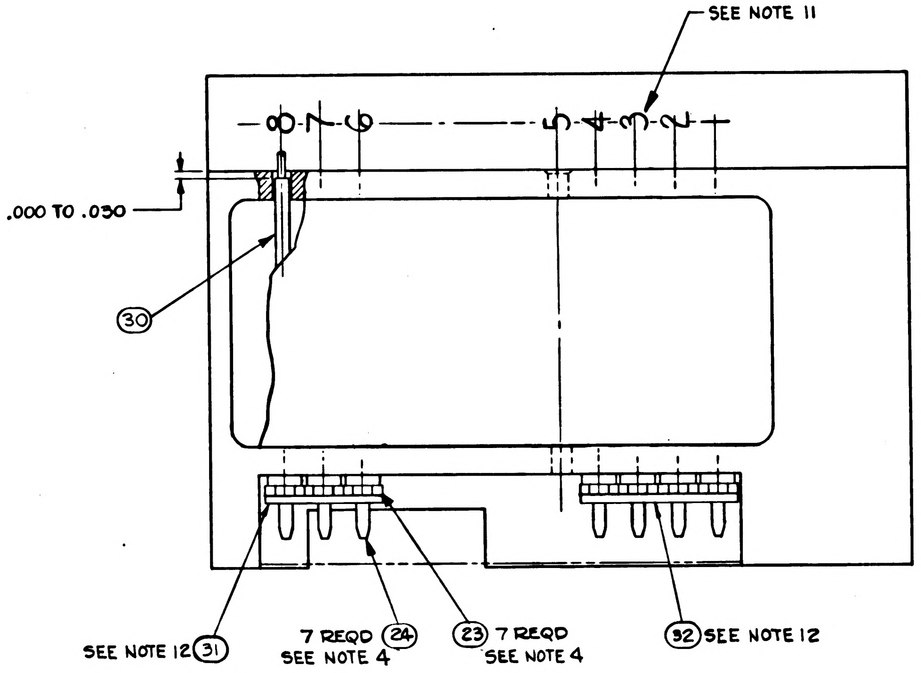
REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 14334			
B		REVISED PER TDRR-17320		12-MAR-65	B. / EF
C		REVISED PER TDRR 18106		9 APR 65	HTO / EF
D		REVISED PER TDRR 18956		17 MAY 65	
E		REVISED PER TDRR 19391		2 JUN 68	/ EF
F		REVISED PER TDRR 19439		4 JUN	/ EF



SCALE 2:1





NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD 'C' & CENTRALIZED
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. MUST MEET REQUIREMENTS OF ND1002136.
5. SOLDER PER ND1002071
6. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
7. MOUNTING TORQUE FOR ITEM 20, 12^{+2}_{-2} INCH POUNDS.
8. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
9. FILL PER ND1002117
10. BLACK DOT & CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT & CLEAR WIRING INDICATES LOWER LEVEL WIRING.
11. MARK PIN NUMBERS .08 HIGH (WHITE) & ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 & SERIALIZE PER ND 1002023, CENTRALIZE AS SHOWN.
12. BOND FIND NO. 31 & 32 TO FIND NO. 23 PER ND 1002237
13. PROCURE PER PS 1007045.
14. ON ITEMS 3 AND 4
    BROKEN PATHS INDICATE SLEEVING
    'K' INDICATES CATHODE SIDE OF DIODE.
    FT( ) INDICATES FEED THRU.
    MINUS (-) INDICATES NEGATIVE END OF CAPACITOR
    PLUS (+) " POSITIVE " " "
    C INDICATES COLLECTOR LEAD OF TRANSISTOR
    B " BASE " " "
    E " EMITTER " " "
15. TYPICAL SLEEVING FOR CR1, CR2, R1, R3 & R4
16. TYPICAL SLEEVING FOR FT1 THRU FT4
17. AR DENOTES AS REQUIRED.
18. COAT THREADS AND ITEM 15 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
19. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
20. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
21. *CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.*

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		021	011				
		-	X		REF	1010049	SCHEMATIC
		X	–		REF	1009544	SCHEMATIC
		1	1		34	1010338-001	TRANSFORMER
		2	-		33	1010264-8	CAPACITOR, FIXED
		1	1		32	1008540-4	GASKET, CONNECTOR-MINIATURE
		1	1		31	1008540-3	GASKET, CONNECTOR-MINIATURE
		AR	AR		30	1006776-20	INSULATION SLEEVING
		AR	AR		29	1006757-1	WIRE ELEC. - .010 x .020
		AR	AR		28	1006776-21	INSULATION SLEEVING
		AR	AR		27	1006757-8	WIRE, ELEC. - .020 DIA.
		AR	AR		26	1006776-22	INSULATION SLEEVING
		2	2		25	1008070-75	WASHER, FLAT
		7	7		24	1006782-5	CONTACT, WRAPOST MALE MIN.
		7	7		23	1006775	INSULATOR, WRAPOST MALE MIN.
		2	2		22	1000093-15	SCREW, BUTTON HEAD
		2	2		21	1008025-2	INSULATOR, BUSHING
		2	2		20	MS20341-10B	HEX. NUT
		2	2		19	1008071-4	WASHER, FLAT
		2	2		18	1008024-1	WASHER, INSULATOR
		2	2		17	1008024-2	WASHER, INSULATOR
		2	2		16	1008021-1	BUSHING, INSULATOR
		‡	‡		15	~~1010338~~	~~TRANSFORMER~~
		1	1		14	1010329-1	TRANSFORMER, AUDIO
		1	1		13	1010269-2	TRANSISTOR (MATCHED PAIR)
		1	1		12	1010398-4	TRANSISTOR (MATCHED PAIR)
		2	2		11	1006750-1	RESISTOR, FIXED
		1	1		10	1010312-029	RESISTOR, FIXED
		1	1		9	1006750-51	RESISTOR, FIXED
		2	2		8	1010385	DIODE, SEMI-CONDUCTOR DEVICE
		1	1		7	1006789-002	CAPACITOR
		-	2		6	1010264-1	CAPACITOR, FIXED
		1	1		5	1006755-65	CAPACITOR, FIXED
		1	1		4	1015707	INSULATOR
		1	1		3	1015706	INSULATOR
					2		
		1	1		1	1015708	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - XXX ± .005 +
- . XX ± .02 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

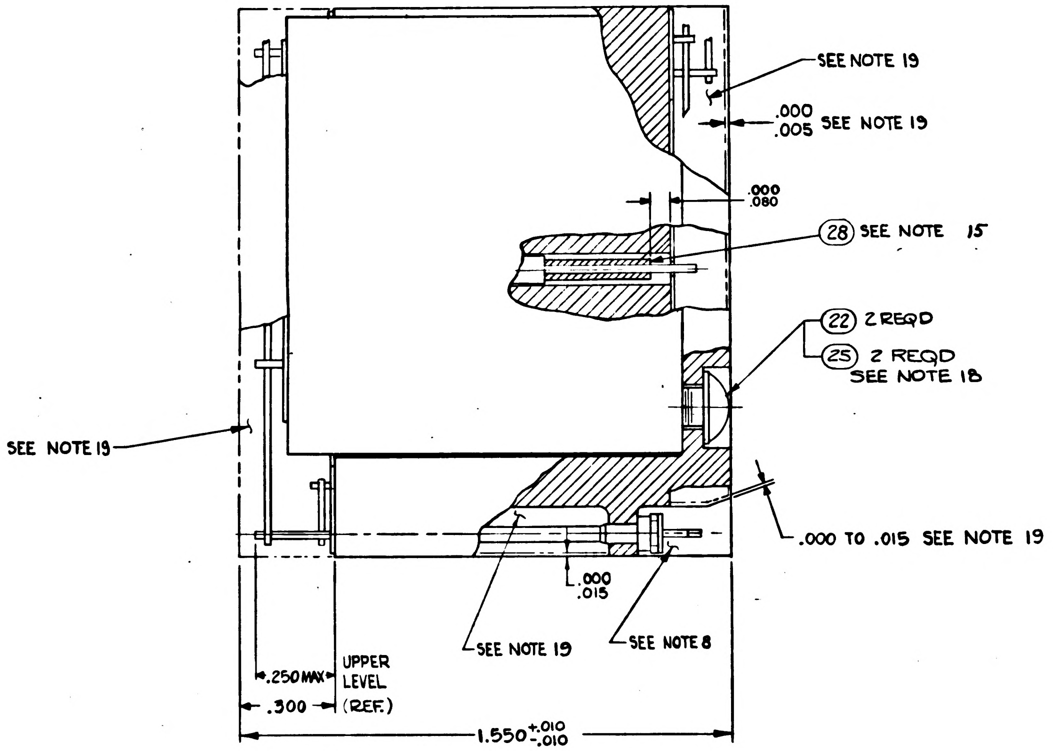
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orzel DATE 13 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL
MIT APPROVAL

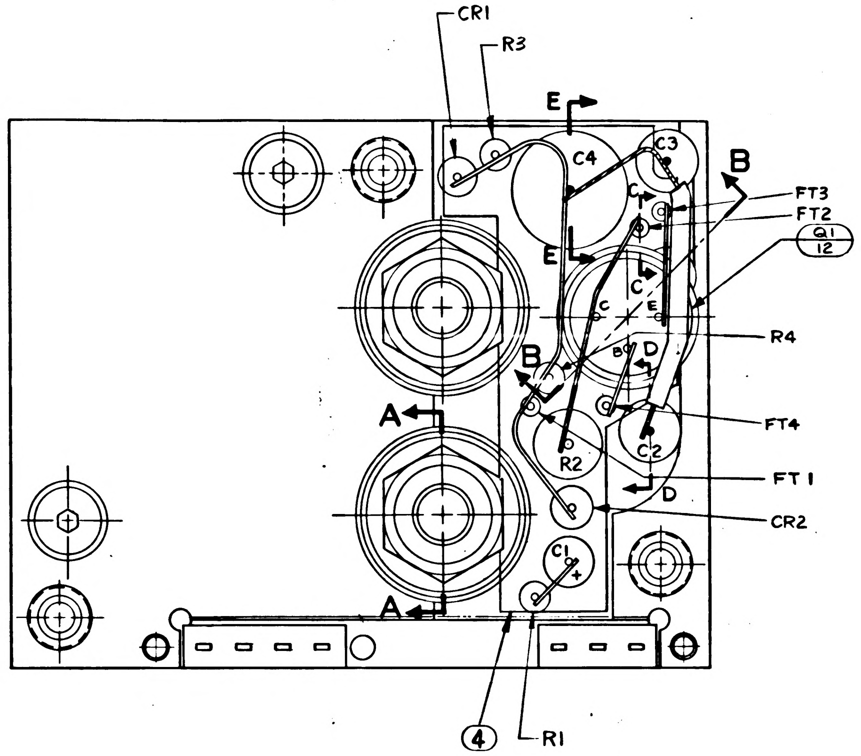
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007545
SCALE 5:1
SHEET 1 OF 2

REVISIONS 13233					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 14334			WK
B		REVISED PER TDRR-17320		12-MAR-65	B. EF
C		REVISED PER TDRR 18106		9 APR 65	HTO EF
D		REVISED PER TDRR 18955		17 MAY 65	WTY
E		REVISED PER TDRR 19391		2 JUN 65	BWB EF
F		REVISED PER TDRR 19439		4 JUN 65	EF


SEE NOTE 19
.000
.005 SEE NOTE 19
.000
.080
(28) SEE NOTE 15
(22) 2 REQD
(25) 2 REQD
SEE NOTE 18
SEE NOTE 19
.000 TO .015 SEE NOTE 19
.000
.015
SEE NOTE 19
SEE NOTE 8
.250 MAX
.300
UPPER LEVEL (REF.)
1.550 +.010 -.010


CR1
R3
E
C4
C3
B
FT3
FT2
Q1
12
E
C
R4
B
D
A
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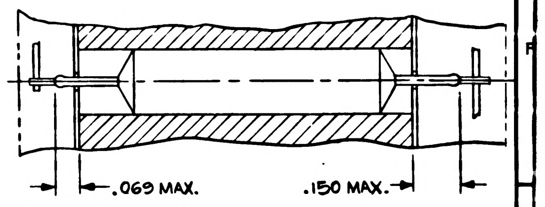
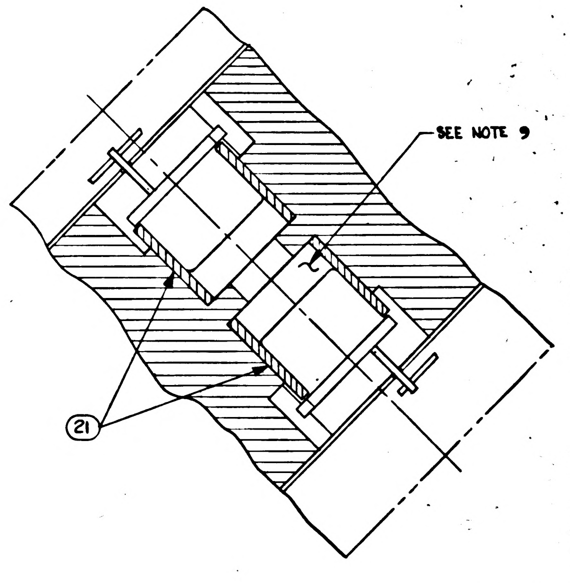
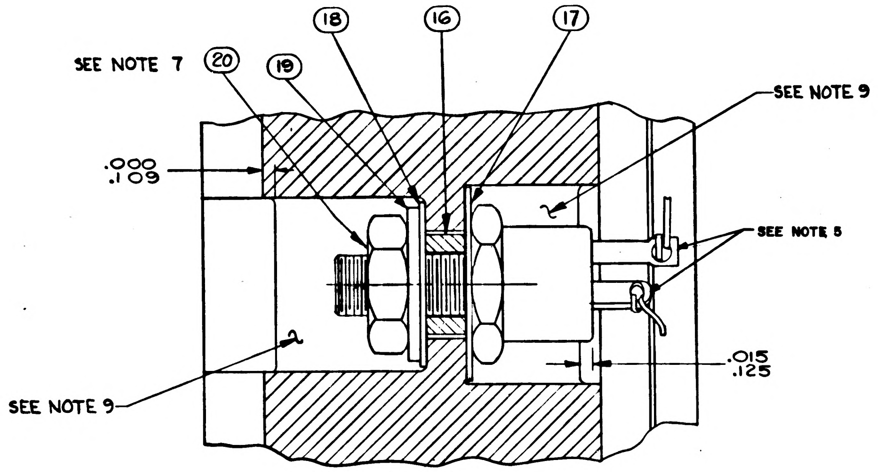
C2
FT 1
D
CR2
C1
A
(4)
R1


.069 MAX.
.150 MAX.

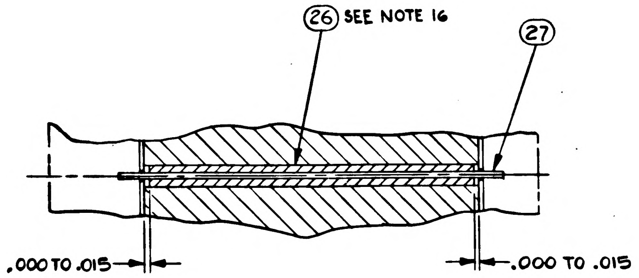
PARTIAL SECTION D-D
C2 & C3 ORIENTATION


SEE NOTE 9
(21)

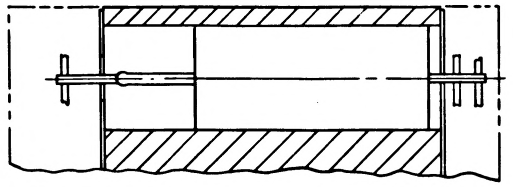
PARTIAL SECTION B-B


(18)
(16)
(17)
SEE NOTE 7
(20)
(19)
SEE NOTE 9
.000
.109
SEE NOTE 5
SEE NOTE 9
.015
.125

PARTIAL SECTION A-A (TYPICAL)
2 PLACES


(26) SEE NOTE 16
(27)
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C
(TYPICAL)



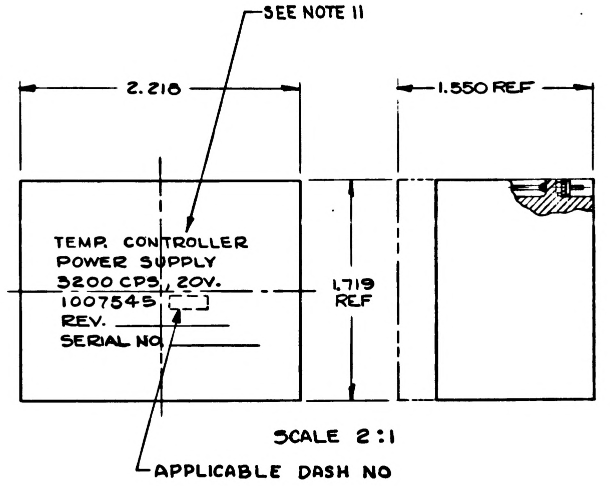
PARTIAL SECTION E-E
C4 ORIENTATION

NEXT ASSY	USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ± DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB CAMBRIDGE MASS DRAWN Angel 12 AUG 64 CHECKED [illegible] 27 AUG 64 APPROVAL [illegible] APPROVAL [illegible] 10-5-64	MANNED SPACECRAFT CENTER HOUSTON, TEXAS TEMP. CONTROLLER POWER SUPPLY 3200 CPS, 20V. MODULE ASSY
APPLICATION		MATERIAL	NASA APPROVAL [illegible] 10-6-64	CODE IDENT NO. 80230 · SIZE E · 1007545
		CONTRACT NAS 9-497	MIT APPROVAL WK 6 Oct 64	SCALE 5:1 · SHEET 2 OF 2

TABLE I

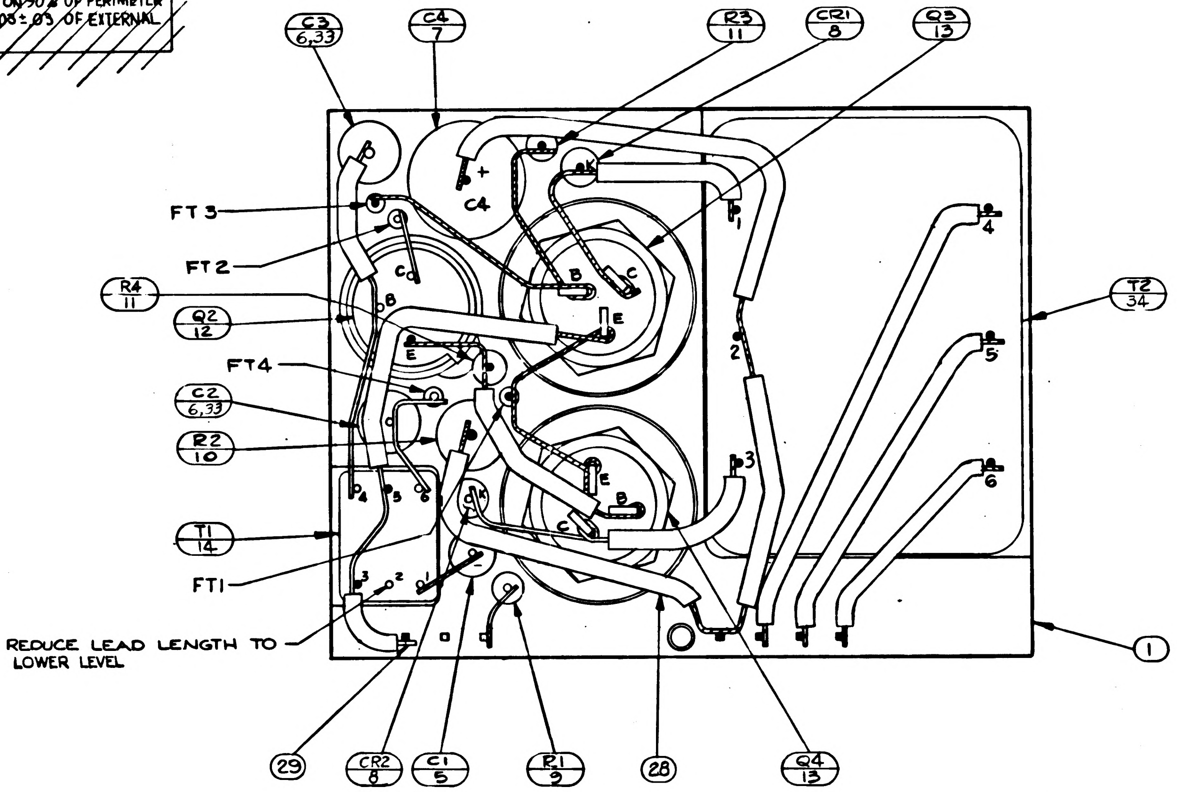
CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK - FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

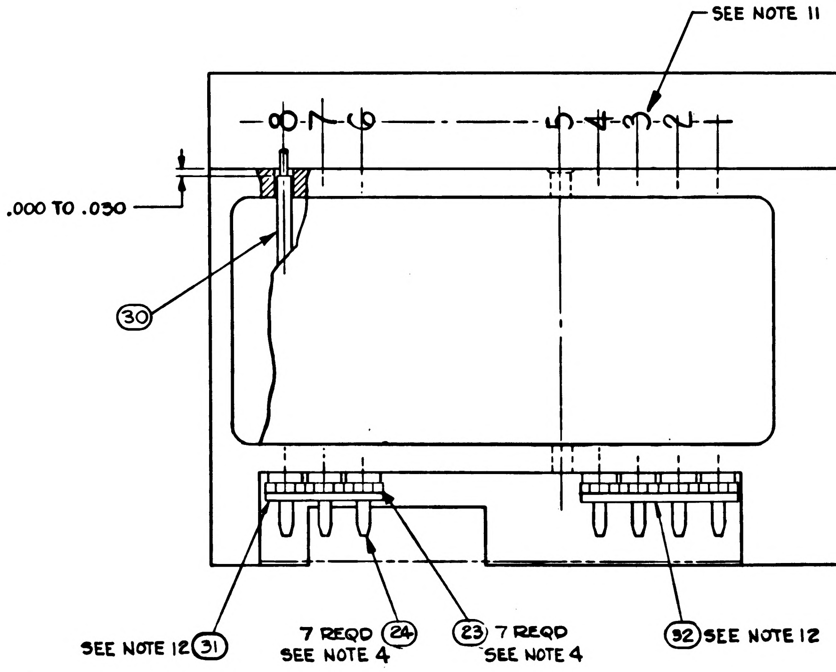
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 14334			
B		REVISED PER TDRR-17320		2 MAR 65	B.
C		REVISED PER TDRR 18106			HTO
D		REVISED PER TDRR 18955		JAN 65	
E		REVISED PER TDRR 19391		JUN 65	RGB
F		REVISED PER TDRR 19439		JUN	
G		REVISED PER TDRR 19511		JUN 5	



SCALE 2:1

APPLICABLE DASH NO





NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD "H" & CENTRALIZED
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. MUST MEET REQUIREMENTS OF ND 1002136.
5. SOLDER PER ND 1002071
6. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
7. MOUNTING TORQUE FOR ITEM 20, 12^{+2}_{-2} INCH POUNDS.
8. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
9. FILL PER ND1002117
10. BLACK DOT & CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT & CLEAR WIRING INDICATES LOWER LEVEL WIRING.
11. MARK PIN NUMBERS .08 HIGH (WHITE) & ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 & SERIALIZE PER ND 1002023, CENTRALIZE AS SHOWN.
12. BOND FIND NO. 31 & 32 TO FIND NO. 23 PER ND 1002237
13. PROCURE PER PS 1007045.
14. ON ITEMS 3 AND 4
    BROKEN PATHS INDICATE SLEEVING
    'K' INDICATES CATHODE SIDE OF DIODE.
    FT( ) INDICATES FEED THRU.
    MINUS (-) INDICATES NEGATIVE END OF CAPACITOR
    PLUS (+) " POSITIVE " " "
    C INDICATES COLLECTOR LEAD OF TRANSISTOR
    B " BASE " " "
    E " EMITTER " " "
15. TYPICAL SLEEVING FOR CR1, CR2, R1, R3 & R4
16. TYPICAL SLEEVING FOR FT1 THRU FT4
17. AR DENOTES AS REQUIRED.
18. COAT THREADS AND ITEM 15 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
19. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
20. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
21. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
22. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSLATION.
23. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		-	☒		REF.	1010049	SCHEMATIC
		☒	--		REF.	1009544	SCHEMATIC
		1	1		34	1010338-001	TRANSFORMER
		2	-		33	1010264-8	CAPACITOR, FIXED
		1	1		32	1008540-4	GASKET, CONNECTOR-MINIATURE
		1	1		31	1008540-3	GASKET, CONNECTOR-MINIATURE
		AR	AR		30	1006776-20	INSULATION SLEEVING
		AR	AR		29	1006757-1	WIRE ELEC. - .010 x .020
		AR	AR		28	1006776-21	INSULATION SLEEVING
		AR	AR		27	1006757-8	WIRE, ELEC. - .020 DIA.
		AR	AR		26	1006776-22	INSULATION SLEEVING
		2	2		25	1008070-75	WASHER, FLAT
		7	7		24	1006782-5	CONTACT, WRAPOST MALE MIN.
		7	7		23	1006775	INSULATOR, WRAPOST MALE MIN.
		2	2		22	1000093-13	SCREW, BUTTON HEAD
		2	2		21	1008025-2	INSULATOR, BUSHING
		2	2		20	MS20341-10B	HEX. NUT
		2	2		19	1008071-4	WASHER, FLAT
		2	2		18	1008024-1	WASHER, INSULATOR
		2	2		17	1008024-2	WASHER, INSULATOR
		2	2		16	1008021-1	BUSHING, INSULATOR
		~~1~~	~~1~~		15	~~1010338~~	~~TRANSFORMER~~
		1	1		14	1010329-1	TRANSFORMER, AUDIO
		1	1		13	1010269-2	TRANSISTOR (MATCHED PAIR)
		1	1		12	1010398-4	TRANSISTOR (MATCHED PAIR)
		2	2		11	1006750-1	RESISTOR, FIXED
		1	1		10	1010312-029	RESISTOR, FIXED
		1	1		9	1006750-51	RESISTOR, FIXED
		2	2		8	1010385	DIODE, SEMI-CONDUCTOR DEVICE
		1	1		7	1006789-002	CAPACITOR
		-	2		6	1010264-1	CAPACITOR, FIXED
		1	1		5	1006755-65	CAPACITOR, FIXED
		~~1~~	~~1~~		4	~~1015707~~	~~INSULATOR~~
		~~1~~	~~1~~		3	~~1015706~~	~~INSULATOR~~
					2		
		1	1		1	1015708	HEATSINK

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

1007571		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - XXX ± .005 +
- - XX ± .02 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

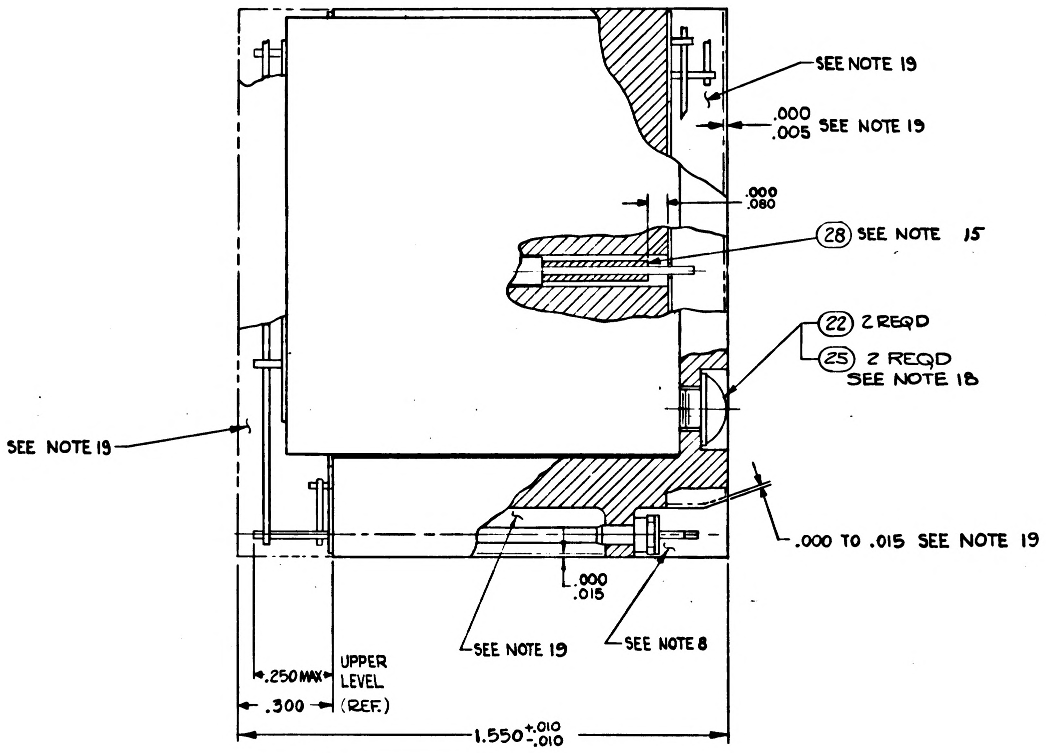
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orzel DATE 13 AUG 64
CHECKED U. Bronich 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL
MIT APPROVAL

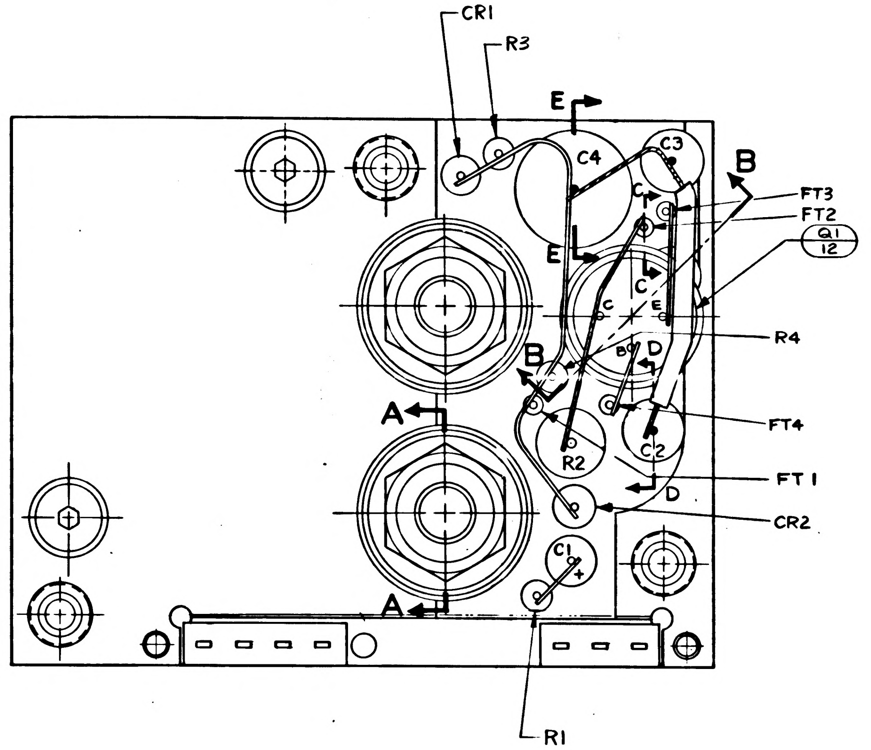
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007545
SCALE 5:1
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 14334			
B		REVISED PER TDRR- 7320		12-MAR 6:	
C		REVISED PER TDRR 8 06		9 APR 65	ITO
D		REVISED PER TDRR 8055		17 MAY 65	
E		REVISED PER TDRR 10391			
F		REVISED PER TDRR 9439		4 JUNE	
G		REVISED PER TDRR 19511		8 JUN 65	WP


SEE NOTE 19
.000
.005 SEE NOTE 19
.000
.080
(28) SEE NOTE 15
(22) 2 REQD
(25) 2 REQD
SEE NOTE 18
SEE NOTE 19
.000 TO .015 SEE NOTE 19
.000
.015
SEE NOTE 19
SEE NOTE 8
.250 MAX
UPPER LEVEL (REF.)
.300
1.550 +.010 -.010


CR1
R3
E
C4
C3
B
FT3
FT2
Q1
12
E
C
E
C
R4
B
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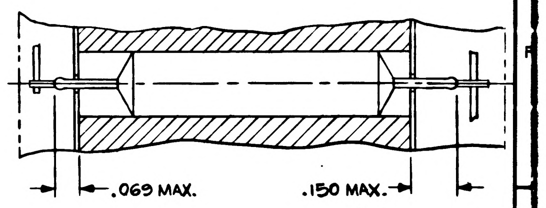
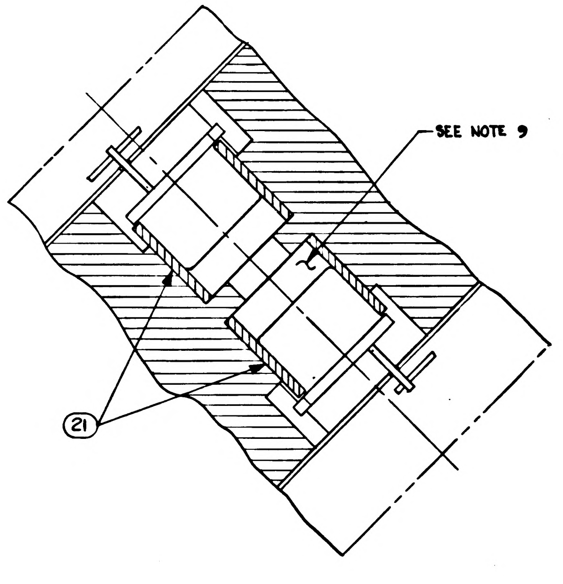
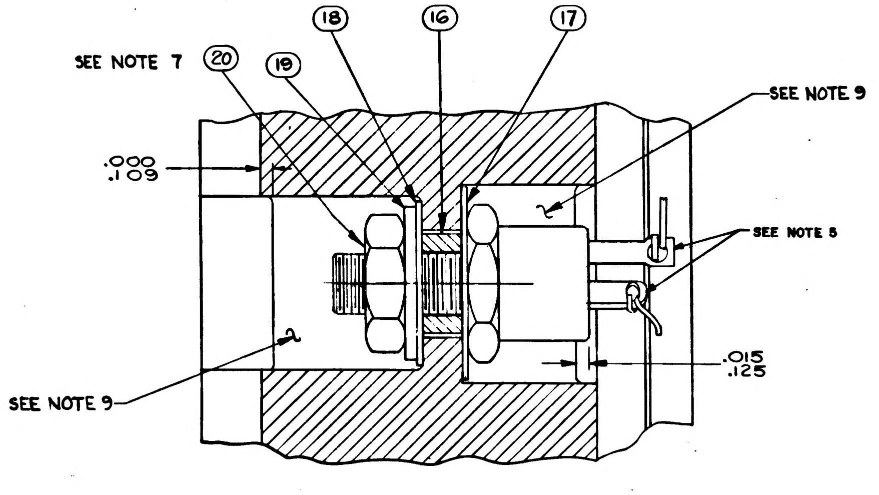
D
CR2
C1
A
R1


.069 MAX.
.150 MAX.

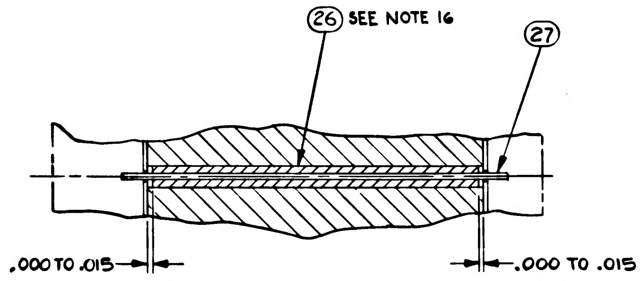
PARTIAL SECTION D-D
C2 & C3 ORIENTATION


SEE NOTE 9
(21)

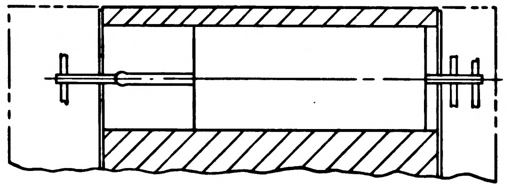
PARTIAL SECTION B-B


(18)
(16)
(17)
SEE NOTE 7
(20)
(19)
SEE NOTE 9
.000
.109
SEE NOTE 8
.015
.125
SEE NOTE 9

PARTIAL SECTION A-A (TYPICAL)
2 PLACES


(26) SEE NOTE 16
(27)
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C
(TYPICAL)



PARTIAL SECTION E-E
C4 ORIENTATION

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN 12 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL 6 Oct 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V.
MODULE ASSY

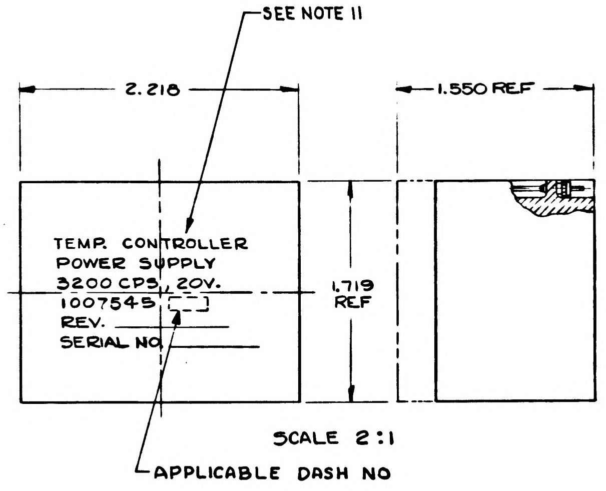
CODE IDENT NO. 80230
SIZE E
1007545
SCALE 5:1
SHEET 2 OF 2

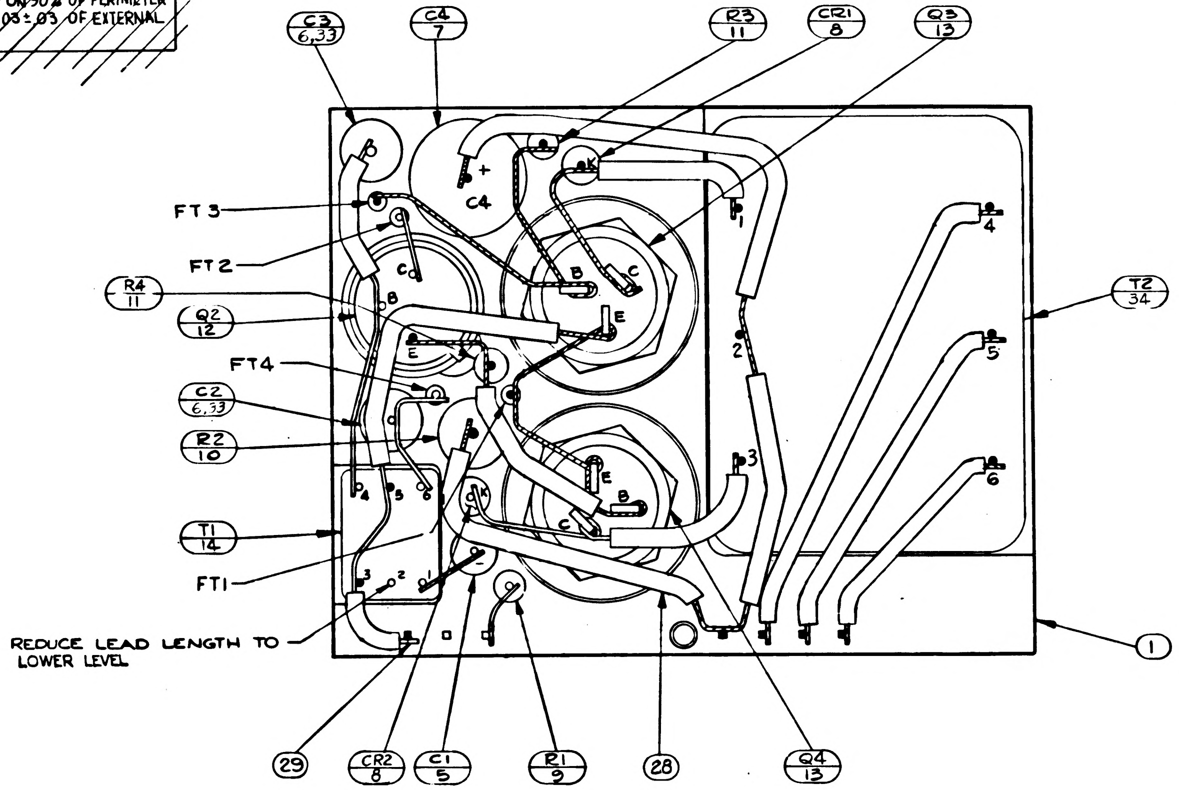
TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK - FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03±.03 OF EXTERNAL EDGE

REVISIONS

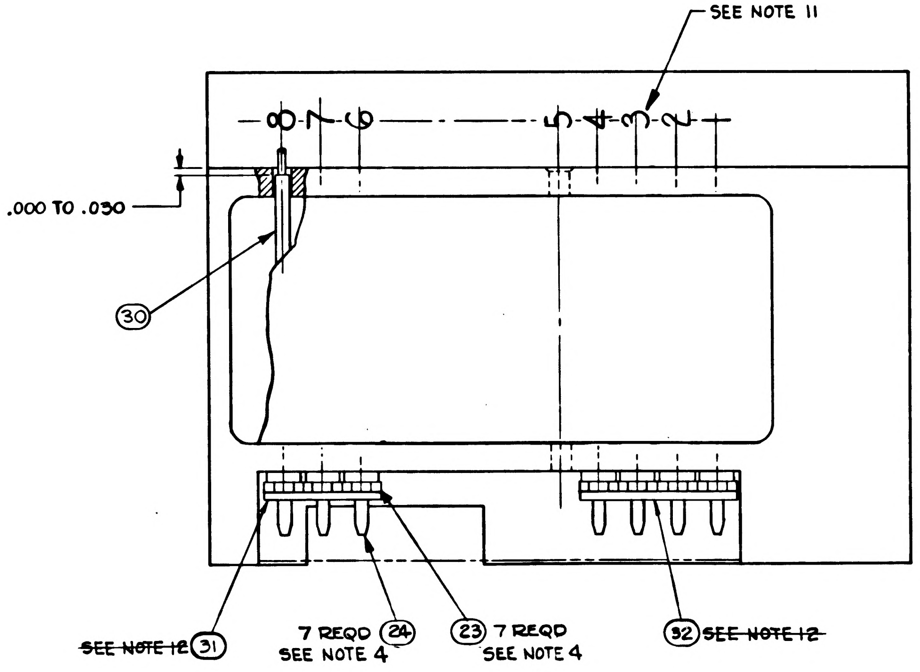
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 14334			
B		REVISED PER TDRR-17320		2-MAR-65	
C		REVISED PER TDRR 18106		3 APR 65	
D		REVISED PER TDRR 18955		MAY 65	
E		REVISED PER TDRR 19391		JUN 65	
F		REVISED PER TDRR 19439		JUN 65	
G		REVISED PER TDRR 1951[illegible]		JUN 65	
H		REVISED PER TDRR 20[illegible]43		JUN 65	





NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD 'H' & CENTRALIZED
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. MUST MEET REQUIREMENTS OF ND1002136.
5. SOLDER PER ND1002071
6. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
7. MOUNTING TORQUE FOR ITEM 20, 12^{+2}_{-2} INCH POUNDS.
8. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
9. FILL PER ND1002117
10. BLACK DOT & CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT & CLEAR WIRING INDICATES LOWER LEVEL WIRING.
11. MARK PIN NUMBERS .08 HIGH (WHITE) & ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 & SERIALIZE PER ND 1002023, CENTRALIZE AS SHOWN.
12. ~~BOND FIND NO. 31 & 32 TO FIND NO. 23 PER ND 1002237~~
13. PROCURE PER PS 1007045.
14. ON ITEMS 3 AND 4
    BROKEN PATHS INDICATE SLEEVING
    'K' INDICATES CATHODE SIDE OF DIODE.
    FT( ) INDICATES FEED THRU.
    MINUS (-) INDICATES NEGATIVE END OF CAPACITOR
    PLUS (+) " POSITIVE " " "
    C INDICATES COLLECTOR LEAD OF TRANSISTOR
    B " BASE " " "
    E " EMITTER " " "
15. TYPICAL SLEEVING FOR CR1, CR2, R1, R3 & R4
16. TYPICAL SLEEVING FOR FT1 THRU FT4
17. AR DENOTES AS REQUIRED.
18. COAT THREADS AND ITEM 15 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
19. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
20. ~~BOND A .25 MIN WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~



21. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
22. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSLATION.
23. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

		021	011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		-	☒		REF	1010049	SCHEMATIC
		☒	-		REF	1009544	SCHEMATIC
		1	1		34	1010338-001	TRANSFORMER
		2	-		33	1010264-8	CAPACITOR, FIXED
		1	1		32	1008540-4	GASKET, CONNECTOR-MINIATURE
		1	1		31	1008540-3	GASKET, CONNECTOR-MINIATURE
		AR	AR		30	1006776-20	INSULATION SLEEVING
		AR	AR		29	1006757-1	WIRE ELEC. - .010 x .020
		AR	AR		28	1006776-21	INSULATION SLEEVING
		AR	AR		27	1006757-8	WIRE, ELEC. - .020 DIA.
		AR	AR		26	1006776-22	INSULATION SLEEVING
		2	2		25	1008070-75	WASHER, FLAT
		7	7		24	1006782-5	CONTACT, WRAPOST MALE MIN.
		7	7		23	1006775	INSULATOR, WRAPOST MALE MIN.
		2	2		22	1000093-13	SCREW, BUTTON HEAD
		2	2		21	1008025-2	INSULATOR, BUSHING
		2	2		20	MS20341-10B	HEX. NUT
		2	2		19	1008071-4	WASHER, FLAT
		2	2		18	1008024-1	WASHER, INSULATOR
		2	2		17	1008024-2	WASHER, INSULATOR
		2	2		16	1008021-1	BUSHING, INSULATOR
		~~1~~	~~1~~		15	~~1010338~~	~~TRANSFORMER~~
		1	1		14	1010329-1	TRANSFORMER, AUDIO
		1	1		13	1010269-2	TRANSISTOR (MATCHED PAIR)
		1	1		12	1010398-4	TRANSISTOR (MATCHED PAIR)
		2	2		11	1006750-1	RESISTOR, FIXED
		1	1		10	1010312-029	RESISTOR, FIXED
		1	1		9	1006750-51	RESISTOR, FIXED
		2	2		8	1010385	DIODE, SEMI-CONDUCTOR DEVICE
		1	1		7	1006789-002	CAPACITOR
		-	2		6	1010264-1	CAPACITOR, FIXED
		1	1		5	1006755-65	CAPACITOR, FIXED
		1	1		4	~~1015707~~	~~INSULATOR~~
			1		3	~~1015706~~	~~INSULATOR~~
					2		
		1	1		1	1015708	HEATSINK

QUANTITY REQUIRED
LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - XXX ±.005 +
- . XX ±.02 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

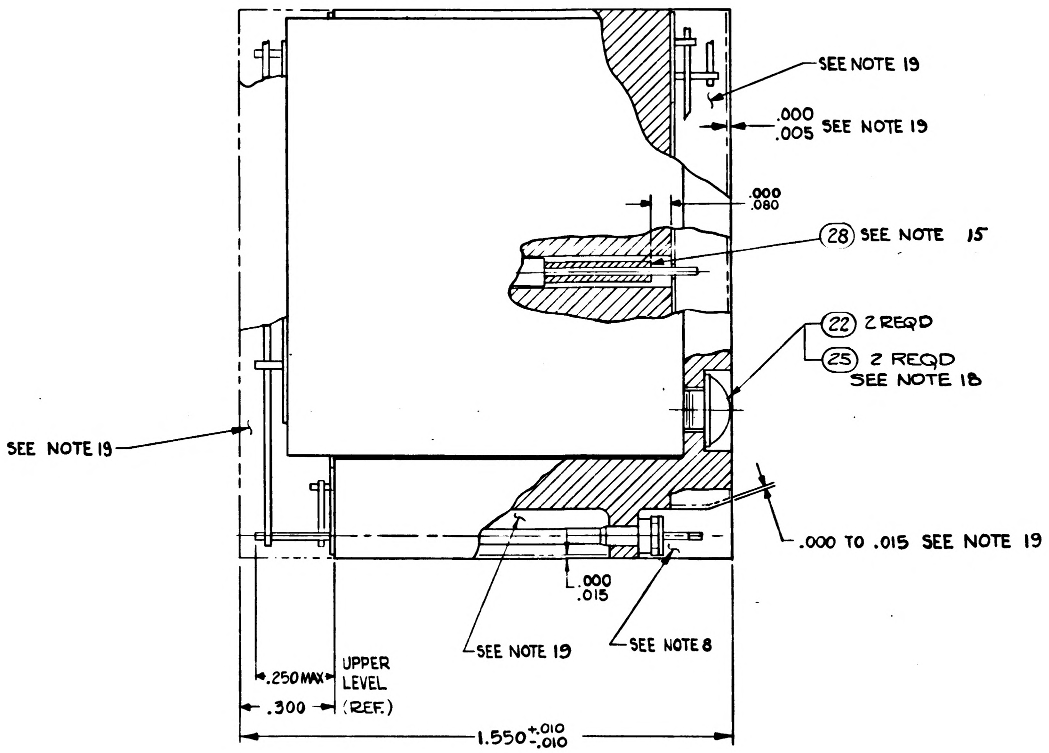
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orzel DATE 13 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL
MIT APPROVAL

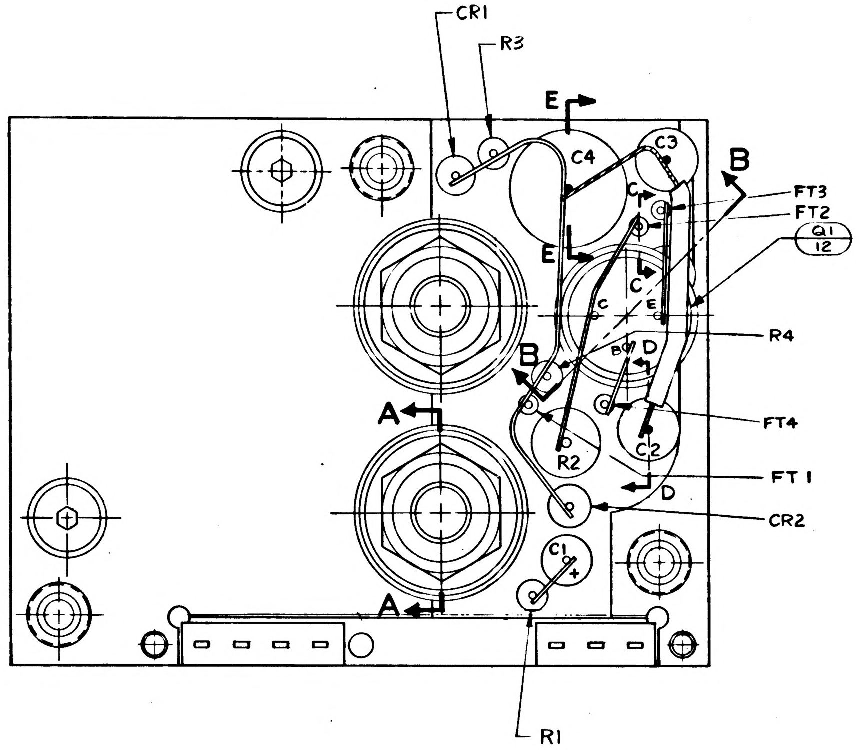
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007545
SCALE 5:1
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 14334			
B		REVISED PER TDRR 7320		12 MAR 6:	
C		REVISED PER TDRR 8 06		9 APR 65	
D		REVISED PER TDRR 8055		17 MAY	
E		REVISED PER TDRR 9391		2 JUN 6	
F		REVISED PER TDRR 9439		4 JUN 6	
G		REVISED PER TDRR 9511		8 JUN 65	
H		REVISION STATUS CHANGED		9 65	


SEE NOTE 19
.000 .005 SEE NOTE 19
.000 .080
(28) SEE NOTE 15
(22) 2 REQD
(25) 2 REQD SEE NOTE 18
SEE NOTE 19
.000 TO .015 SEE NOTE 19
.000 .015
SEE NOTE 19
SEE NOTE 8
.250 MAX
.300
UPPER LEVEL (REF.)
1.550 +.010 -.010


CR1
R3
E
C4
C3
B
FT3
FT2
G1 12
E
C
C
E
R4
B
D
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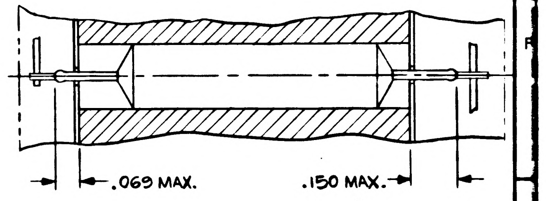
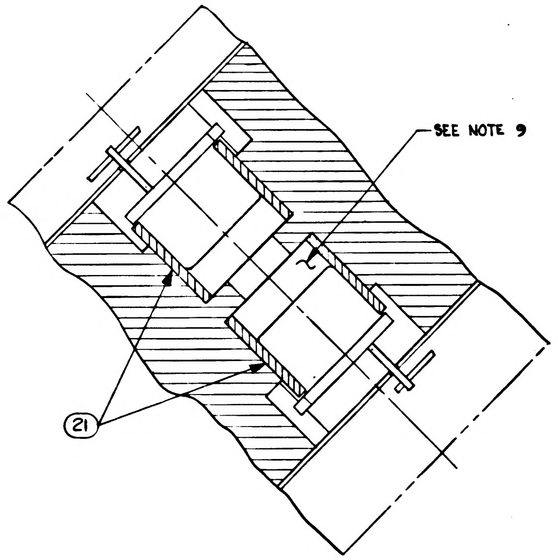
D
CR2
C1
A
R1


.069 MAX.
.150 MAX.

PARTIAL SECTION D-D
C2 & C3 ORIENTATION


SEE NOTE 9
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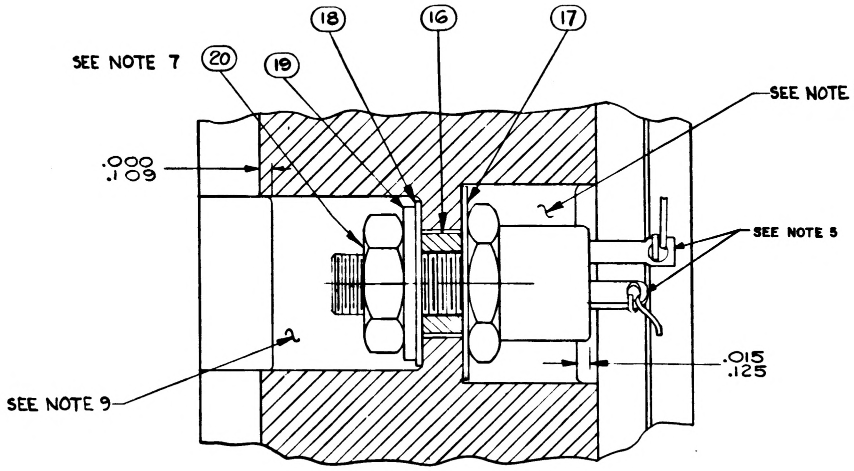
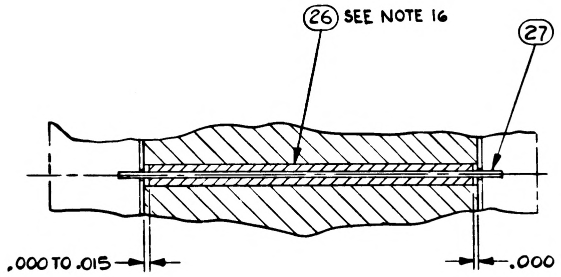
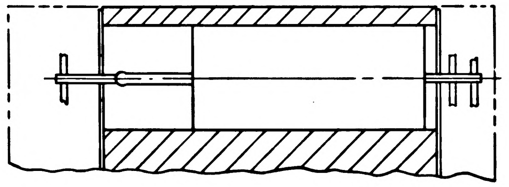
PARTIAL SECTION B-B


SEE NOTE 7
(20)
(19)
(18)
(16)
(17)
SEE NOTE 9
.000 .109
SEE NOTE 5
.015 .125
SEE NOTE 9

PARTIAL SECTION A-A (TYPICAL)
2 PLACES


(26) SEE NOTE 16
(27)
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C
(TYPICAL)



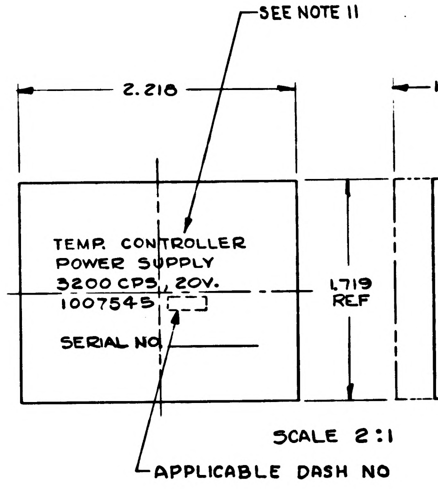
PARTIAL SECTION E-E
C4 ORIENTATION

NEXT ASSY	USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES + — + — + — — — — — — — DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB CAMBRIDGE MASS DRAWN Orpel 12 AUG 64 CHECKED A. Idovack 27 AUG 64 APPROVAL APPROVAL 10-5-64	MANNED SPACECRAFT CENTER HOUSTON, TEXAS TEMP. CONTROLLER POWER SUPPLY 3200 CPS, 20V. MODULE ASSY
APPLICATION		MATERIAL	NASA APPROVAL	CODE IDENT NO. 80230 · SIZE E · 1007545
		CONTRACT NAS 9-497	MIT APPROVAL 6 Oct 64	SCALE 5:1 · SHEET 2 OF 2

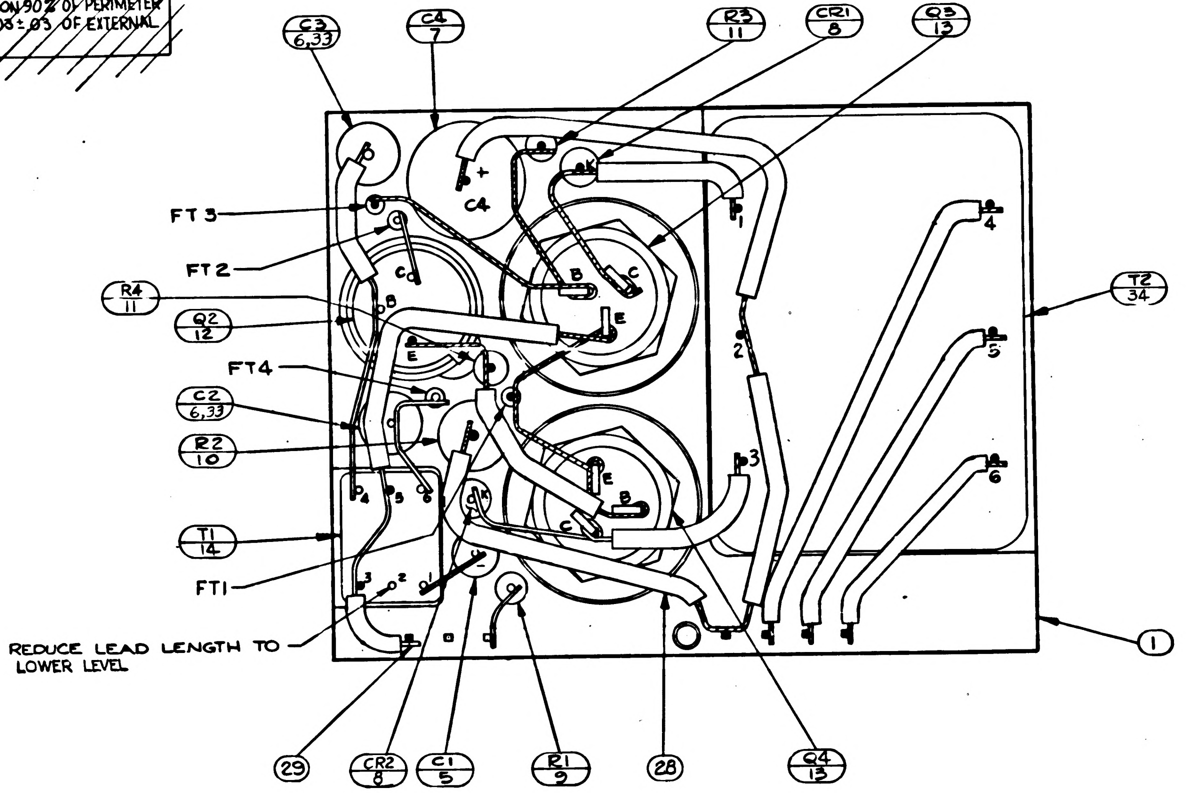
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 14334			[illegible]
B		REVISED PER TDRR-17320		12-MAR-65	B.
C		REVISED PER TDRR 18106		[illegible]	HT
D		REVISED PER TDRR 18956		JAN 65	[illegible]
E		REVISED PER TDRR 19391		JUN 65	[illegible]
F		REVISED PER TDRR 19439		JUN	[illegible]
G		REVISED PER TDRR 19511		JUN 65	[illegible]
H		REVISED PER TDRR 20643		JUN 65	[illegible]
J		REVISED PER TDRR 22254		[illegible]	[illegible]

TABLE I

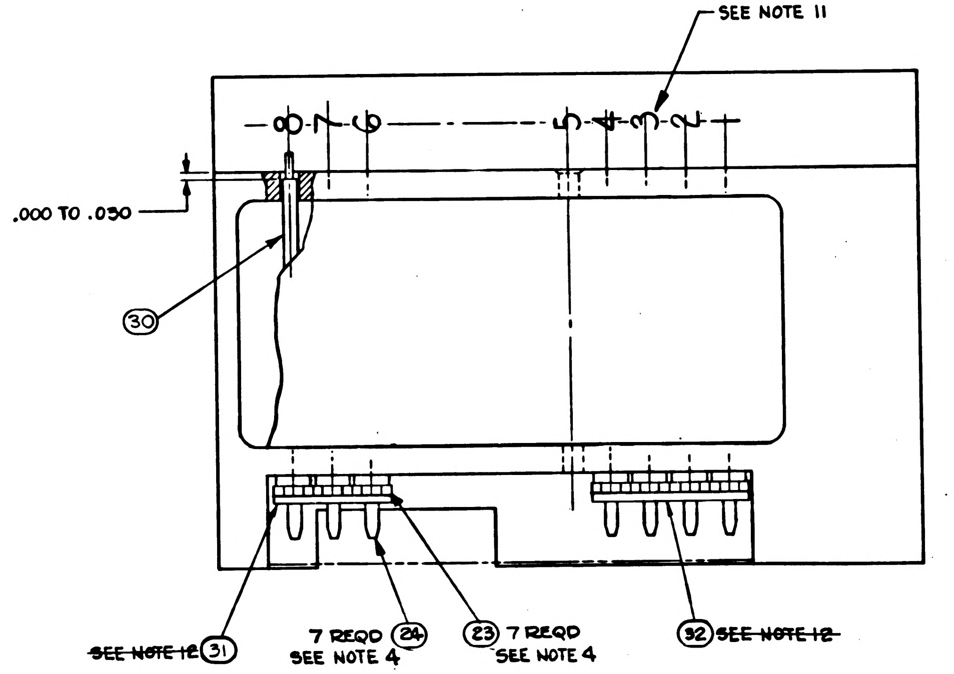
CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE



SCALE 2:1



NOTES:
1. INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD "J" & CENTRALIZED
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. MUST MEET REQUIREMENTS OF ND1002136.
5. SOLDER PER ND1002071
6. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
7. MOUNTING TORQUE FOR ITEM 20, 12^{+2}_{-2} INCH POUNDS.
8. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
9. FILL PER ND1002117
10. BLACK DOT & CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT & CLEAR WIRING INDICATES LOWER LEVEL WIRING.
11. MARK PIN NUMBERS .08 HIGH (WHITE) & ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 & SERIALIZE PER ND 1002023, CENTRALIZE AS SHOWN.
12. ~~BOND FIND NO. 31 & 32 TO FIND NO. 23 PER ND 1002237~~
13. PROCURE PER PS 1007045.
14. ON ITEMS 3 AND 4
    BROKEN PATHS INDICATE SLEEVING
    'K' INDICATES CATHODE SIDE OF DIODE.
    FT( ) INDICATES FEED THRU.
    MINUS (-) INDICATES NEGATIVE END OF CAPACITOR
    PLUS (+) " POSITIVE " " "
    C INDICATES COLLECTOR LEAD OF TRANSISTOR
    B " BASE " " "
    E " EMITTER " " "
15. TYPICAL SLEEVING FOR CR1, CR2, R1, R3 & R4
16. TYPICAL SLEEVING FOR FT1 THRU FT4
17. AR DENOTES AS REQUIRED.
18. COAT THREADS AND ITEM 15 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
19. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
20. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~



21. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
22. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSLATION.
23. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		-	X		REF	1010049	SCHEMATIC
		X	-		REF	1009544	SCHEMATIC
		1	1		34	1010338-001	TRANSFORMER
		2	-		33	1010264-8	CAPACITOR, FIXED
		1	1		32	1008540-4	GASKET, CONNECTOR-MINIATURE
		1	1		31	1008540-3	GASKET, CONNECTOR-MINIATURE
		AR	AR		30	1006776-20	INSULATION SLEEVING
		AR	AR		29	1006757-1	WIRE ELEC. - .010 × .020
		AR	AR		28	1006776-21	INSULATION SLEEVING
		AR	AR		27	1006757-8	WIRE, ELEC. - .020 DIA.
		AR	AR		26	1006776-22	INSULATION SLEEVING
		2	2		25	1008070-75	WASHER, FLAT
		7	7		24	1006782-5	CONTACT, WRAPOST MALE MIN.
		7	7		23	1006775	INSULATOR, WRAPOST MALE MIN.
		2	2		22	1000093-13	SCREW, BUTTON HEAD
		2	2		21	1008025-2	INSULATOR, BUSHING
		2	2		20	MS20341-10B	HEX. NUT
		2	2		19	1008071-4	WASHER, FLAT
		2	2		18	1008024-1	WASHER, INSULATOR
		2	2		17	1008024-2	WASHER, INSULATOR
		2	2		16	1008021-1	BUSHING, INSULATOR
		~~1~~	~~1~~		15	~~1010338~~	~~TRANSFORMER~~
		1	1		14	1010329-1	TRANSFORMER, AUDIO
		1	1		13	1010269-2	TRANSISTOR (MATCHED PAIR)
		1	1		12	1010398-4	TRANSISTOR (MATCHED PAIR)
		2	2		11	1006750-1	RESISTOR, FIXED
		1	1		10	1010312-029	RESISTOR, FIXED
		1	1		9	1006750-51	RESISTOR, FIXED
		2	2		8	1010385	DIODE, SEMI-CONDUCTOR DEVICE
		1	1		7	1006789-002	CAPACITOR
		-	2		6	1010264-1	CAPACITOR, FIXED
		1	1		5	1006755-65	CAPACITOR, FIXED
		~~1~~	~~1~~		~~4~~	~~1015707~~	~~INSULATOR~~
		~~1~~	~~1~~		~~3~~	~~1015706~~	~~INSULATOR~~
					2		
		1	1		1	1015708	HEATSINK

QUANTITY REQUIRED
LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± XXX ± .005 ±
XX ± .02
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

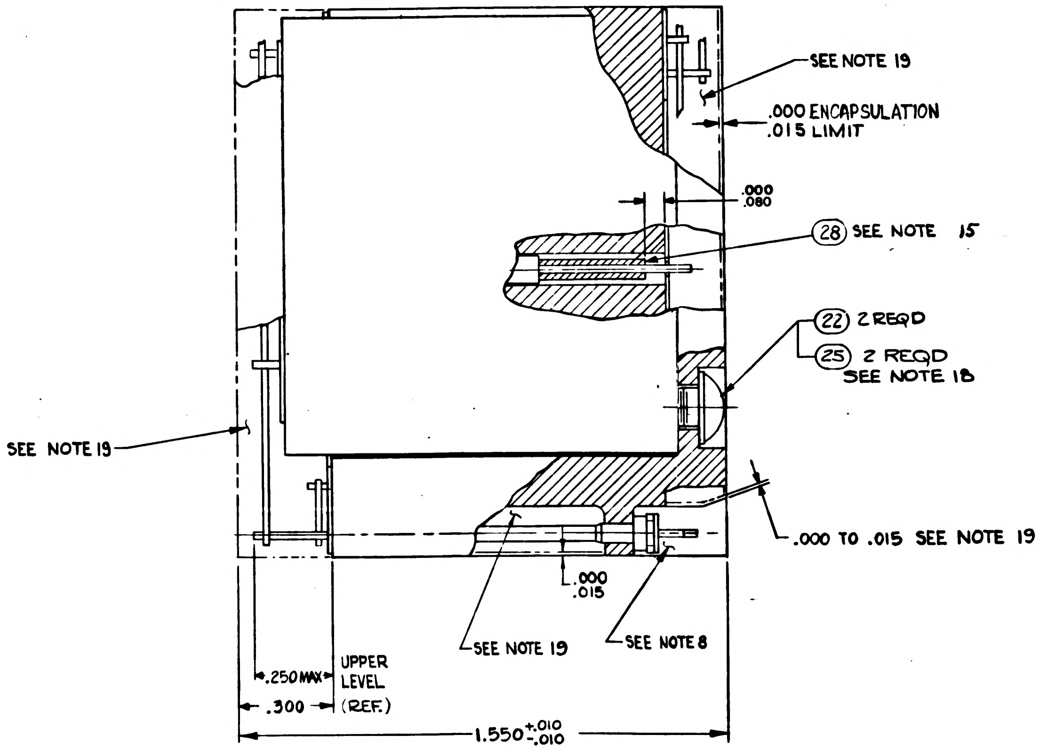
MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN Orgel DATE 13 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL
MIT APPROVAL

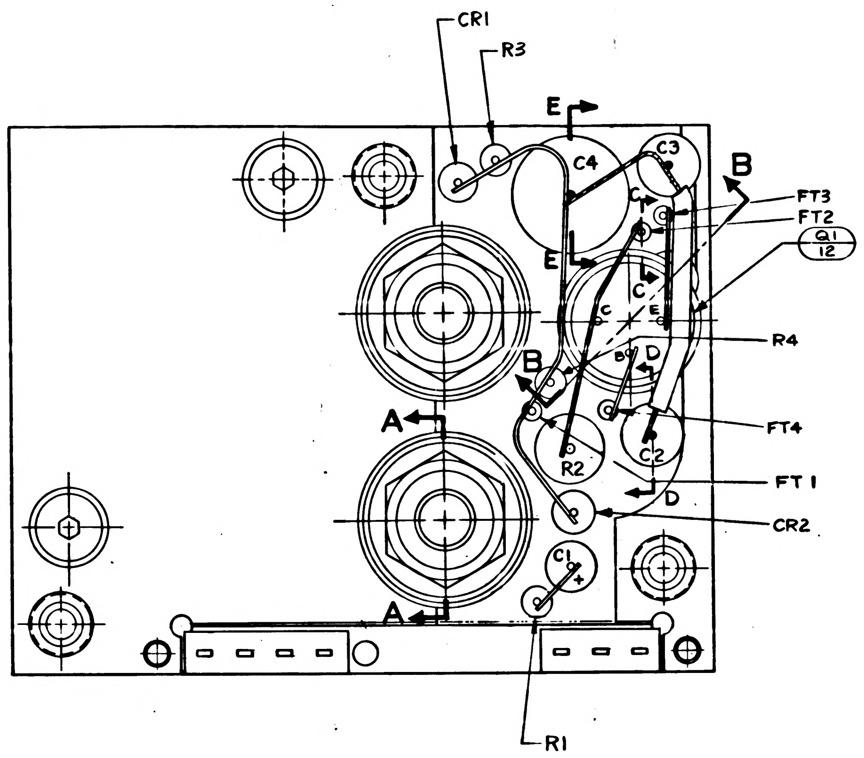
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

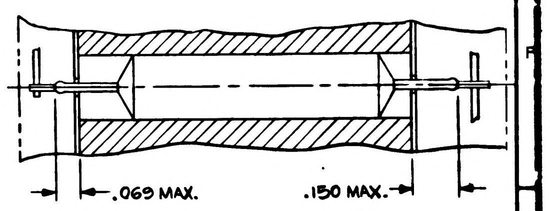
TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007545
SCALE 5:1
SHEET 1 OF 2

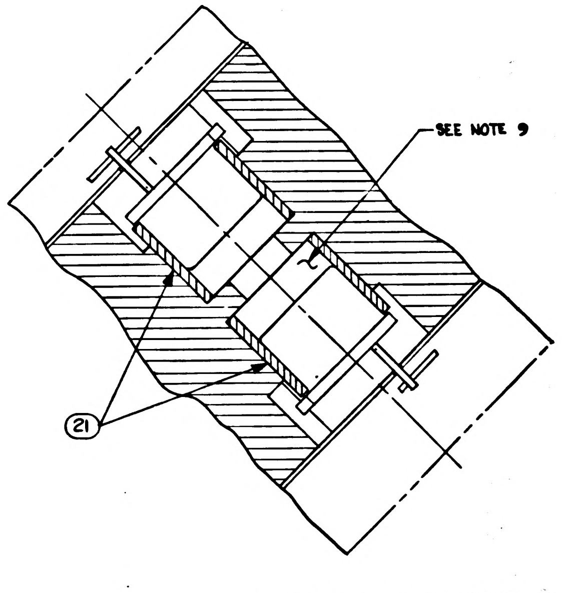
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
-					
A		REVISED PER TDRR 14334			JK
B		REVISED PER TDRR- 7320		12-MAR 6:	
C		REVISED PER TDRR 8.06		5 APR 65	FTC
D		REVISED PER TDRR 18055		17 MAY 65	
E		REVISED PER TDRR 10391		2 JUN 65	MB
F		REVISED PER TDRR 9439		4 JUN 65	
G		REVISED PER TDRR 19511		8 JUN 65	WP
H		REVISION STATUS CHANGED		19 Jun 65	
J		REVISED PER TDRR 22934		2 DEC 65	WP


SEE NOTE 19
.000 ENCAPSULATION
.015 LIMIT
.000
.080
(28) SEE NOTE 15
(22) 2 REQD
(25) 2 REQD
SEE NOTE 18
SEE NOTE 19
.000 TO .015 SEE NOTE 19
.000
.015
SEE NOTE 19
SEE NOTE 8
.250 MAX
UPPER LEVEL (REF.)
.300
1.550 +.010 -.010

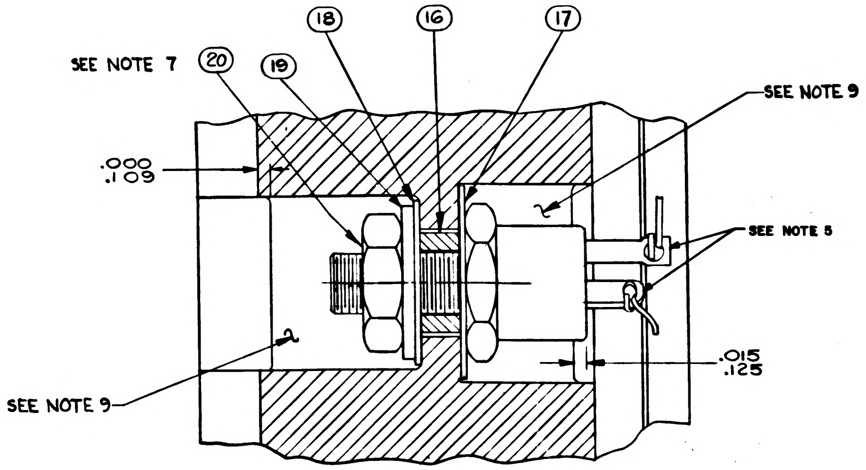

CR1
R3
E
C4
C3
B
FT3
FT2
Q1
12
E
C
E
B
D
R4
B
A
R2
C2
FT4
FT1
D
CR2
C1
A
R1


.069 MAX.
.150 MAX.

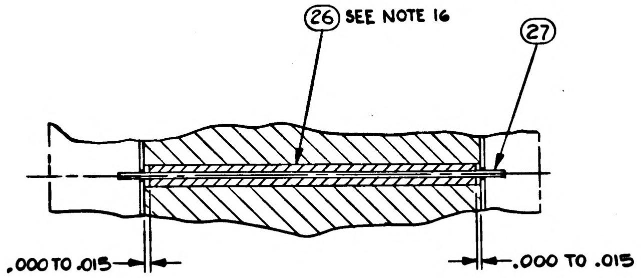
PARTIAL SECTION D-D
C2 & C3 ORIENTATION


SEE NOTE 9
(21)

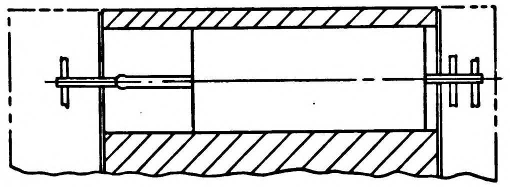
PARTIAL SECTION B-B


SEE NOTE 7
(20)
(19)
(18)
(16)
(17)
SEE NOTE 9
.000
.109
SEE NOTE 8
.015
.125
SEE NOTE 9

PARTIAL SECTION A-A (TYPICAL)
2 PLACES


(26) SEE NOTE 16
(27)
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C
(TYPICAL)



PARTIAL SECTION E-E
C4 ORIENTATION

NEXT ASSY	USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES + — + — + — DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS
APPLICATION		MATERIAL	DRAWN Clayd 12 AUG 64 CHECKED A. Udovich 27 AUG 64 APPROVAL APPROVAL 10-5-64 NASA APPROVAL 10-6-64 MIT APPROVAL 6 Oct 64
		CONTRACT NAS 9-497	

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SPACECRAFT CENTER
HOUSTON, TEXAS

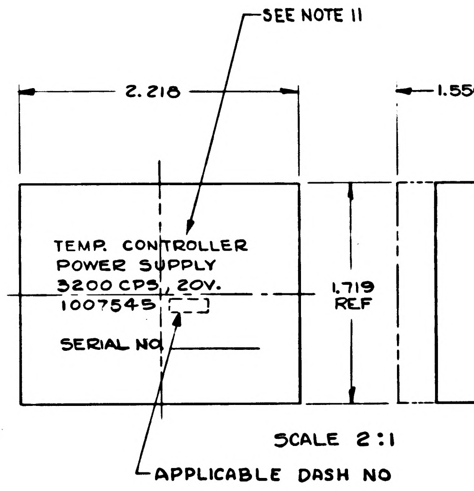
TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V.
MODULE ASSY

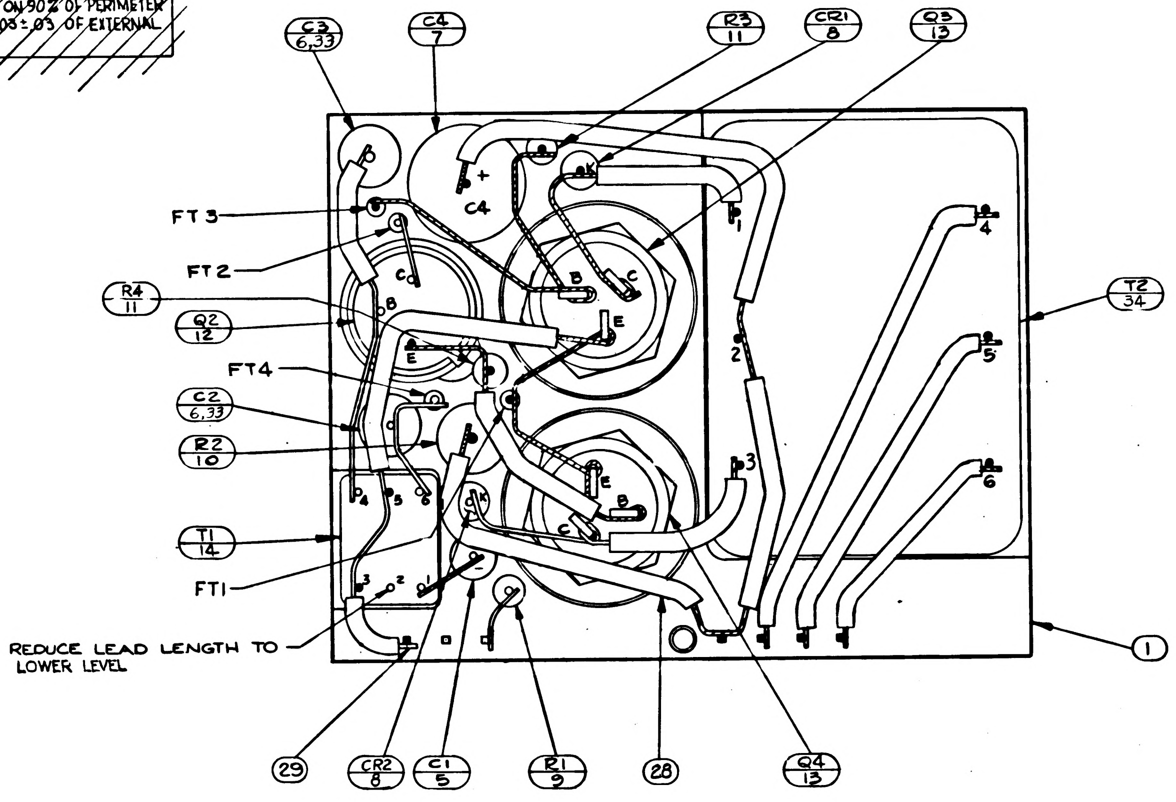
CODE IDENT NO. 80230
SIZE E
1007545
SCALE 5:1
SHEET 2 OF 2

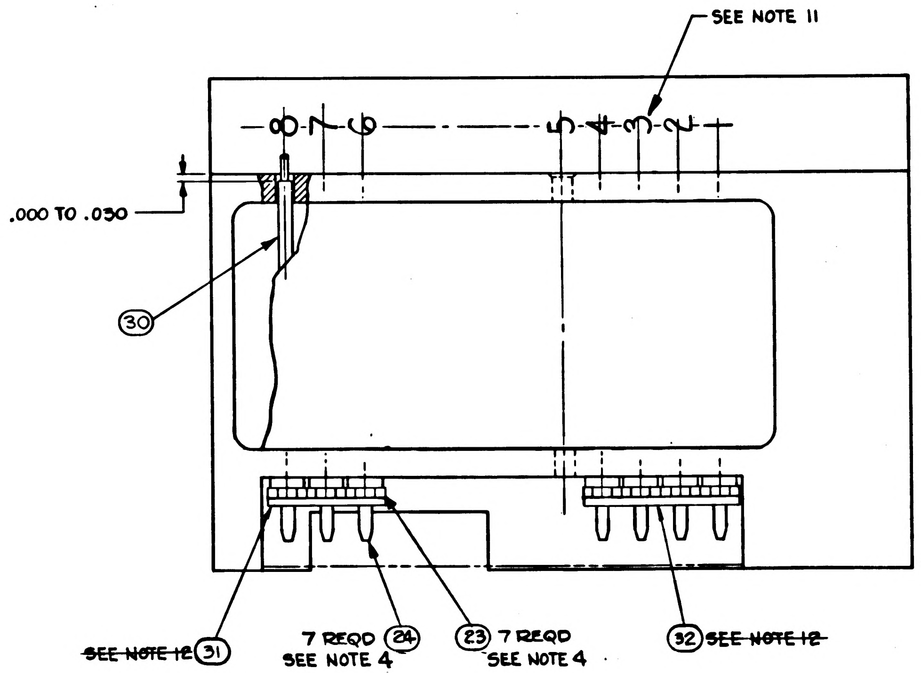
TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03±.03 OF EXTERNAL EDGE

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 14334			
B		REVISED PER TDRR-17320		2-MAR-65	B.
C		REVISED PER TDRR 18106		[illegible] 65	
D		REVISED PER TDRR 18956		[illegible] 65	
E		REVISED PER TDRR 19391		[illegible] 65	
F		REVISED PER TDRR 19439		[illegible]	
G		REVISED PER TDRR 19511		[illegible] 65	
H		REVISED PER TDRR 20143		[illegible] 65	
J		REVISED PER TDRR 22954		[illegible] 65	
K		REVISED PER TDRR 23888		NOV 65	







NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD "J" & CENTRALIZED
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. MUST MEET REQUIREMENTS OF ND 1002136.
5. SOLDER PER ND1002071
6. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
7. MOUNTING TORQUE FOR ITEM 20, 12 $^{+2}_{-2}$ INCH POUNDS.
8. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
9. FILL PER ND1002117
10. BLACK DOT & CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT & CLEAR WIRING INDICATES LOWER LEVEL WIRING.
11. MARK PIN NUMBERS .08 HIGH (WHITE) & ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 & SERIALIZE PER ND 1002023, CENTRALIZE AS SHOWN.
12. ~~BOND FIND NO. 31 & 32 TO FIND NO. 23 PER ND 1002237~~
13. PROCURE PER PS 1007045.
14. ON ITEMS 3 AND 4
    BROKEN PATHS INDICATE SLEEVING
    'K' INDICATES CATHODE SIDE OF DIODE.
    FT( ) INDICATES FEED THRU.
    MINUS (-) INDICATES NEGATIVE END OF CAPACITOR
    PLUS (+) " POSITIVE " " "
    C INDICATES COLLECTOR LEAD OF TRANSISTOR
    B " BASE " " "
    E " EMITTER " " "
15. TYPICAL SLEEVING FOR CR1, CR2, R1, R3 & R4
16. TYPICAL ~~SLEEVING~~ FOR FT1 THRU FT4
17. AR DENOTES AS REQUIRED.
18. COAT THREADS AND ITEM 15 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
19. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
20. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
21. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
22. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSLATION.
23. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

LIST OF PARTS AND MATERIALS

		QUANTITY REQUIRED 021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		-	X		REF	1010049	SCHEMATIC
		X	-		REF	1009544	SCHEMATIC
		AR	AR		35	1010848-2	WIRE, ELECTRICAL-NICKEL
		1	1		34	1010338-001	TRANSFORMER
		2	-		33	1010264-8	CAPACITOR, FIXED
		1	1		32	1008540-4	GASKET, CONNECTOR-MINIATURE
		1	1		31	1008540-3	GASKET, CONNECTOR-MINIATURE
		AR	AR		30	1006776-20	INSULATION SLEEVING
		AR	AR		29	1006757-1	WIRE ELEC.-.010×.020
		AR	AR		28	1006776-21	INSULATION SLEEVING
		~~AR~~	~~AR~~		27	~~1006757-8~~	~~WIRE, ELEC.-.020 DIA.~~
		~~AR~~	~~AR~~		26	~~1006776-22~~	~~INSULATION SLEEVING~~
		2	2		25	1008070-75	WASHER, FLAT
		7	7		24	1006782-5	CONTACT, WRAPOST MALE MIN.
		7	7		23	1006775	INSULATOR, WRAPOST MALE MIN.
		2	2		22	1000093-13	SCREW, BUTTON HEAD
		2	2		21	1008025-2	INSULATOR, BUSHING
		2	2		20	MS20341-10B	HEX. NUT
		2	2		19	1008071-4	WASHER, FLAT
		2	2		18	1008024-1	WASHER, INSULATOR
		2	2		17	1008024-2	WASHER, INSULATOR
		2	2		16	1008021-1	BUSHING, INSULATOR
		~~1~~	~~1~~		15	~~1010338~~	~~TRANSFORMER~~
		1	1		14	1010329-1	TRANSFORMER, AUDIO
		1	1		13	1010269-2	TRANSISTOR (MATCHED PAIR)
		1	1		12	1010398-4	TRANSISTOR (MATCHED PAIR)
		2	2		11	1006750-1	RESISTOR, FIXED
		1	1		10	1010312-029	RESISTOR, FIXED
		1	1		9	1006750-51	RESISTOR, FIXED
		2	2		8	1010385	DIODE, SEMI-CONDUCTOR DEVICE
		1	1		7	1006789-002	CAPACITOR
		-	2		6	1010264-1	CAPACITOR, FIXED
		1	1		5	1006755-65	CAPACITOR, FIXED
		~~1~~	~~1~~		4	~~1015707~~	~~INSULATOR~~
		~~1~~	~~1~~		3	~~1015706~~	~~INSULATOR~~
					2		
		1	1		1	1015708	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - .XXX ±.005 +
- - .XX ±.02 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orzel DATE 13 AUG 64
CHKD D. U. Resnick 27 AUG 64
APPROVAL [illegible]
APPROVAL [illegible] 10-5-64
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

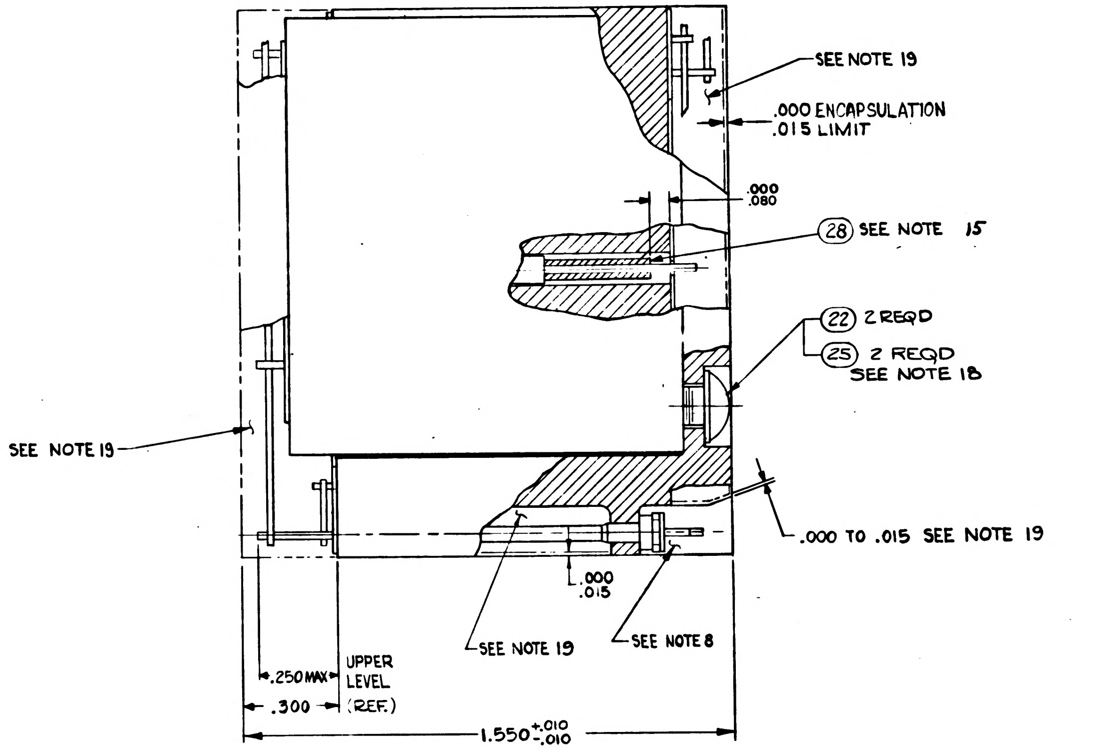
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

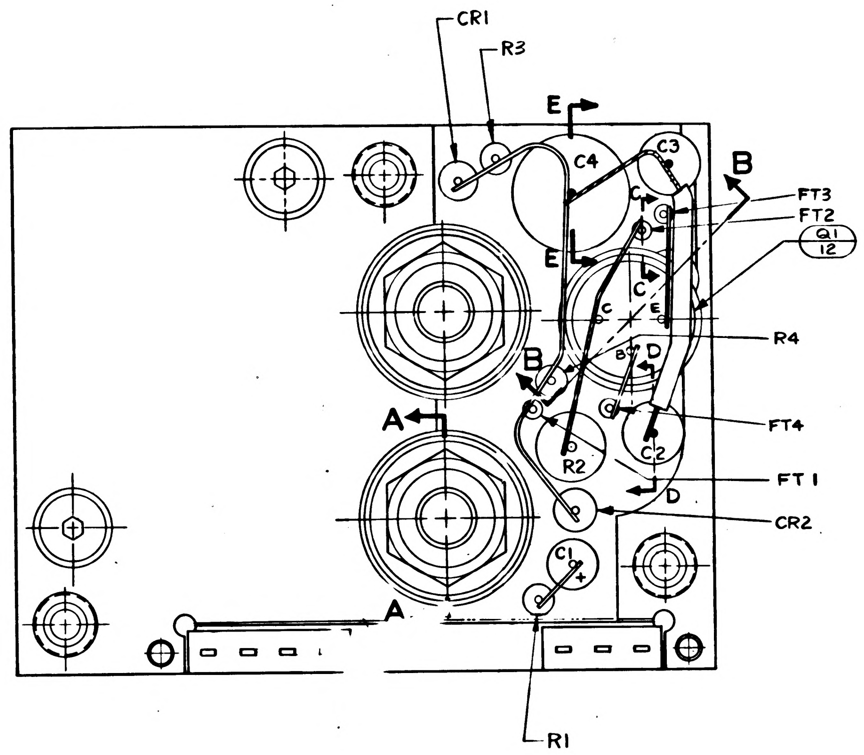
TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V
MODULE ASSY

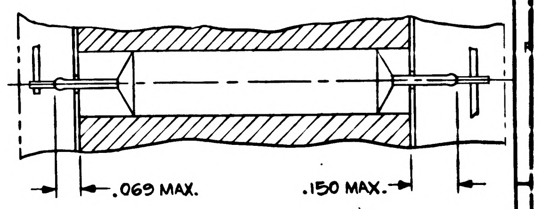
CODE IDENT NO. 80230
SIZE E
1007545
SCALE 5:1
SHEET 1 OF 2

REVISIONS

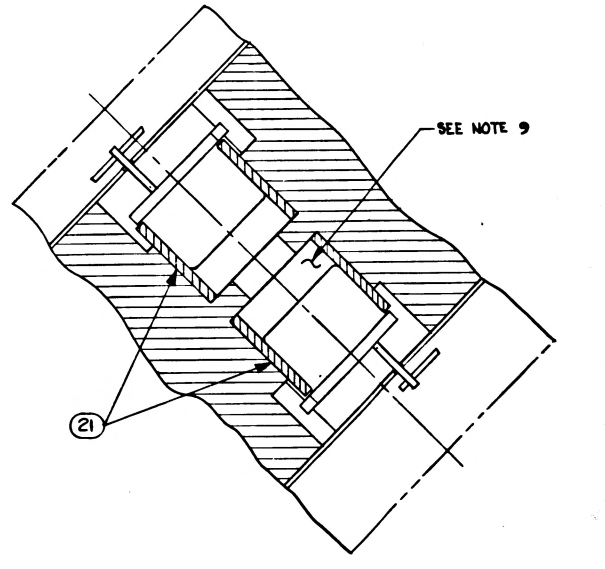
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 14334			[illegible]
B		REVISED PER TDRR-17320		12-MAY-6.	[illegible]
C		REVISED PER TDRR 18106		9 APR 65	ITO
D		REVISED PER TDRR 18955		17 MAY 65	[illegible]
E		REVISED PER TDRR 19391		[illegible]	[illegible]
F		REVISED PER TDRR 19439		JUNE	[illegible]
G		REVISED PER TDRR 19511		JUN	[illegible]
H		REVISED STATUS CHANGED		[illegible]	[illegible]
J		REVISE PER TDRR 22934		[illegible]	[illegible]
K		REVISE PER TDRR 23888		[illegible]	[illegible]


SEE NOTE 19
.000 ENCAPSULATION
.015 LIMIT
.000
.080
(28) SEE NOTE 15
(22) 2 REQD
(25) 2 REQD
SEE NOTE 18
SEE NOTE 19
.000 TO .015 SEE NOTE 19
.000
.015
SEE NOTE 19
SEE NOTE 8
.250 MAX
UPPER LEVEL (REF.)
.300
1.550 +.010 -.010

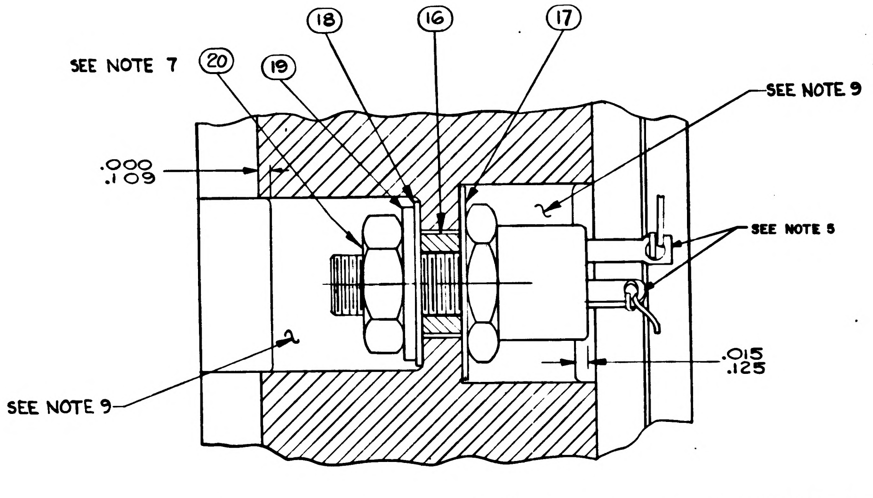

CR1
R3
E
C4
C3
B
FT3
FT2
Q1
12
E
C
R4
B
D
A
FT4
R2
C2
FT 1
D
CR2
C1
A
R1


.069 MAX.
.150 MAX.

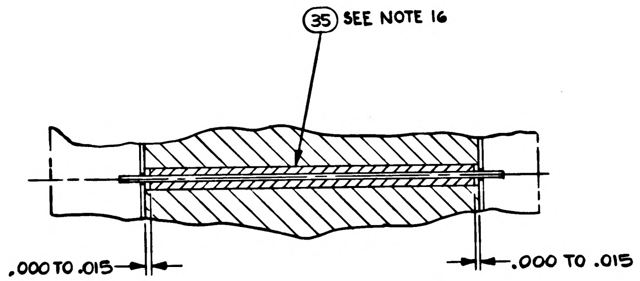
PARTIAL SECTION D-D
C2 & C3 ORIENTATION


SEE NOTE 9
(21)

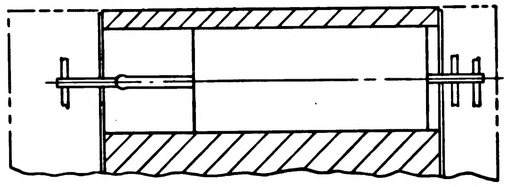
PARTIAL SECTION B-B


SEE NOTE 7
(20)
(19)
(18)
(16)
(17)
SEE NOTE 9
.000
.109
SEE NOTE 5
.015
.125
SEE NOTE 9

PARTIAL SECTION A-A (TYPICAL)
2 PLACES


(35) SEE NOTE 16
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C
(TYPICAL)



PARTIAL SECTION E-E
C4 ORIENTATION

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN 12 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL 6 Oct 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V.
MODULE ASSY

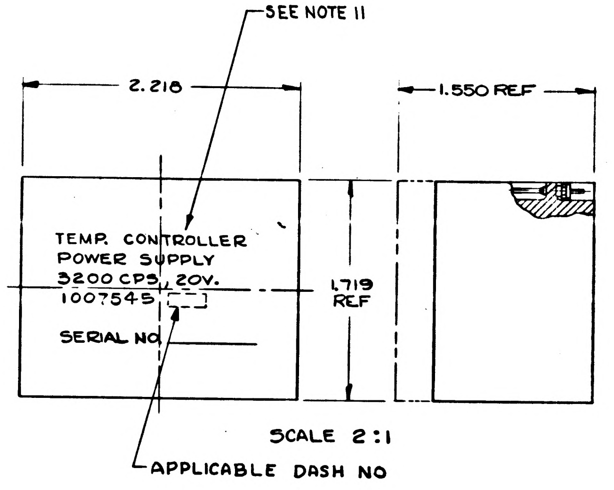
CODE IDENT NO. 80230
SIZE E
1007545
SCALE 5:1
SHEET 2 OF 2

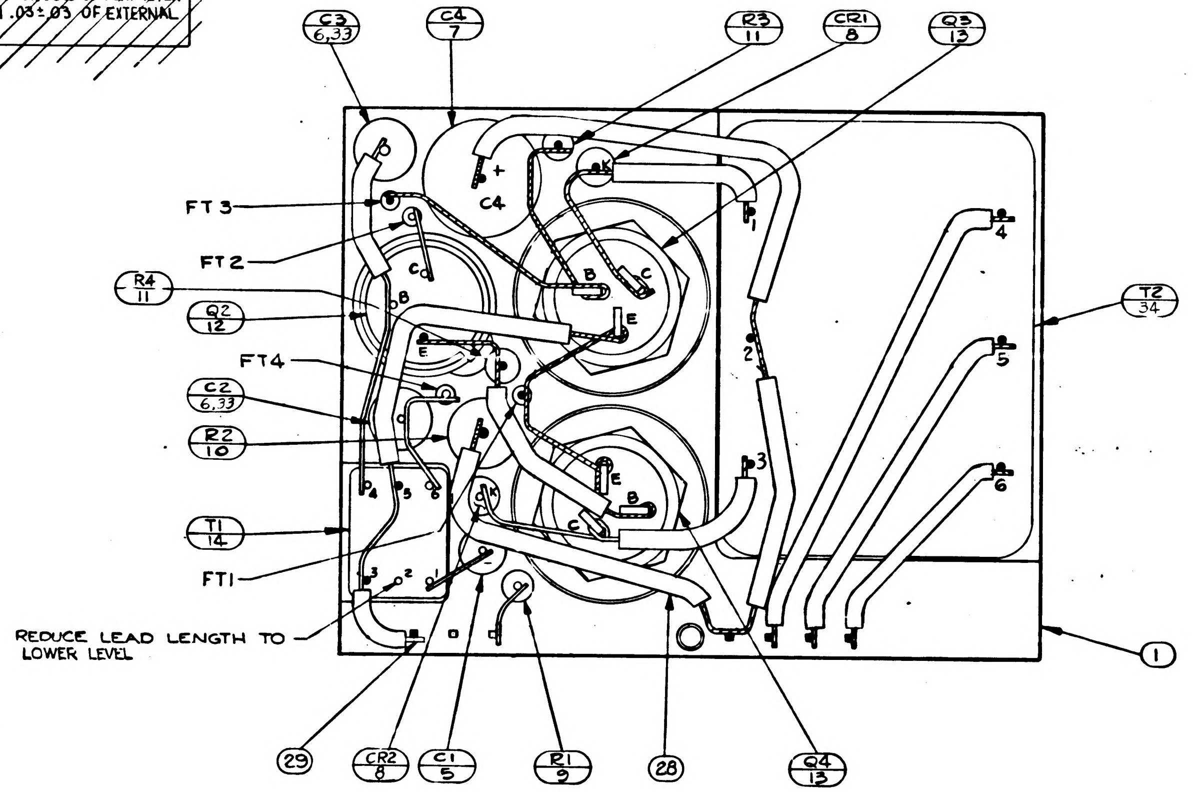
TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK - FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE.	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

REVISIONS

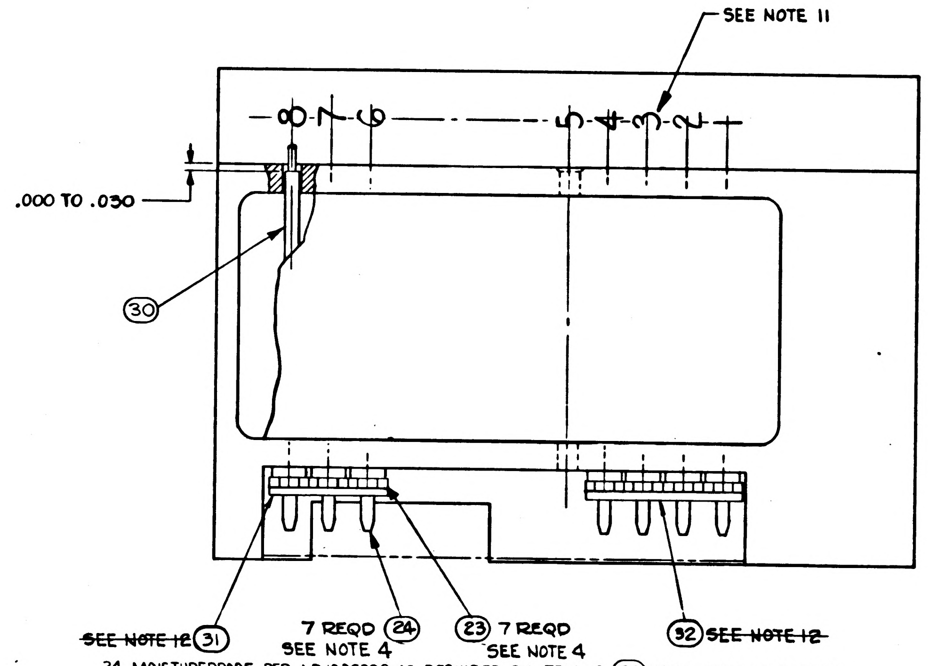
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 14334			WK
B		REVISED PER TDRR-17320		12 MAR 65	B. EF
C		REVISED PER TDRR 18106		9 APR 65	HTO EF
D		REVISED PER TDRR 18955		17 MAY 65	[illegible]
E		REVISED PER TDRR 19391		2 JUN 65	EF
F		REVISED PER TDRR 19439		4 JUN 65	EF
G		REVISED PER TDRR 19511		8 JUN 65	JWD EF
H		REVISED PER TDRR 20143		9 JUN 65	ah
J		REVISED PER TDRR 22954		1 DEC 65	JWD
K		REVISED PER TDRR 23888		16 NOV 65	RP
L		REVISED PER TDRR 26397		23 FEB 66	RP MGM





NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD "J" & CENTRALIZED
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. MUST MEET REQUIREMENTS OF ND1002136.
5. SOLDER PER ND1002071
6. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.



7. MOUNTING TORQUE FOR ITEM 20, 12^{+2}_{-2} INCH POUNDS.
8. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
9. FILL PER ND1002117
10. BLACK DOT & CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT & CLEAR WIRING INDICATES LOWER LEVEL WIRING.
11. MARK PIN NUMBERS .08 HIGH (WHITE) & ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 & SERIALIZE PER ND1002023, CENTRALIZE AS SHOWN.
12. ~~BOND FIND NO. 31 & 32 TO FIND NO. 23 PER ND 1002237~~
13. PROCURE PER PS1007045.
14. ON ITEMS 3 AND 4
    BROKEN PATHS INDICATE SLEEVING
    'K' INDICATES CATHODE SIDE OF DIODE.
    FT( ) INDICATES FEED THRU.
    MINUS (-) INDICATES NEGATIVE END OF CAPACITOR
    PLUS (+) " POSITIVE " " "
    C INDICATES COLLECTOR LEAD OF TRANSISTOR
    B " BASE " " "
    E " EMITTER " " "
15. TYPICAL SLEEVING FOR CR1, CR2, R1, R3 & R4
16. TYPICAL ~~SLEEVING~~ FOR FT1 THRU FT4
17. AR DENOTES AS REQUIRED.
18. COAT THREADS AND ITEM 15 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
19. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
20. ~~BOND A .25 MIN WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
21. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
22. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSLATION.
23. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
24. MOISTUREPROOF PER ND1002292 AS REQUIRED BY ITEM NO. (36) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
–	–	X		REF	1010049	SCHEMATIC
X	X	–		REF	1009544	SCHEMATIC
AR	–	–		36	SEE NOTE 24	MOISTUREPROOFING
AR	AR	AR		35	1010848-2	WIRE, ELECTRICAL-NICKEL
1	1	1		34	1010338-001	TRANSFORMER
2	2	-		33	1010264-8	CAPACITOR, FIXED
1	1	1		32	1008540-4	GASKET, CONNECTOR-MINIATURE
1	1	1		31	1008540-3	GASKET, CONNECTOR-MINIATURE
AR	AR	AR		30	1006776-20	INSULATION SLEEVING
AR	AR	AR		29	1006757-1	WIRE ELEC. - .010 x .020
AR	AR	AR		28	1006776-21	INSULATION SLEEVING
	~~AR~~	~~AR~~		27	~~1006757-8~~	~~WIRE, ELEC. .020 DIA.~~
	~~AR~~	~~AR~~		26	~~1006776-22~~	~~INSULATION SLEEVING~~
2	2	2		25	1008070-75	WASHER, FLAT
7	7	7		24	1006782-5	CONTACT, WRAPOST MALE MIN.
7	7	7		23	1006775	INSULATOR, WRAPOST MALE MIN.
2	2	2		22	1000093-13	SCREW, BUTTON HEAD
2	2	2		21	1008025-2	INSULATOR, BUSHING
2	2	2		20	MS20341-10B	HEX. NUT
2	2	2		19	1008071-4	WASHER, FLAT
2	2	2		18	1008024-1	WASHER, INSULATOR
2	2	2		17	1008024-2	WASHER, INSULATOR
2	2	2		16	1008021-1	BUSHING, INSULATOR
	~~1~~	~~1~~		15	~~1010338~~	~~TRANSFORMER~~
1	1	1		14	1010329-1	TRANSFORMER, AUDIO
1	1	1		13	1010269-2	TRANSISTOR (MATCHED PAIR)
1	1	1		12	1010398-4	TRANSISTOR (MATCHED PAIR)
2	2	2		11	1006750-1	RESISTOR, FIXED
1	1	1		10	1010312-029	RESISTOR, FIXED
1	1	1		9	1006750-51	RESISTOR, FIXED
2	2	2		8	1010385	DIODE, SEMI-CONDUCTOR DEVICE
1	1	1		7	1006789-002	CAPACITOR
–	–	2		6	1010264-1	CAPACITOR, FIXED
1	1	1		5	1006755-65	CAPACITOR, FIXED
	~~1~~	~~1~~		4	~~1015707~~	~~INSULATOR~~
	~~1~~	~~1~~		3	~~1015706~~	~~INSULATOR~~
				2		
1	1	1		1	1015708	HEATSINK

1007545 L

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± – DECIMALS .XXX ± .005 ANGLES ±
– .XX ± .02 –
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

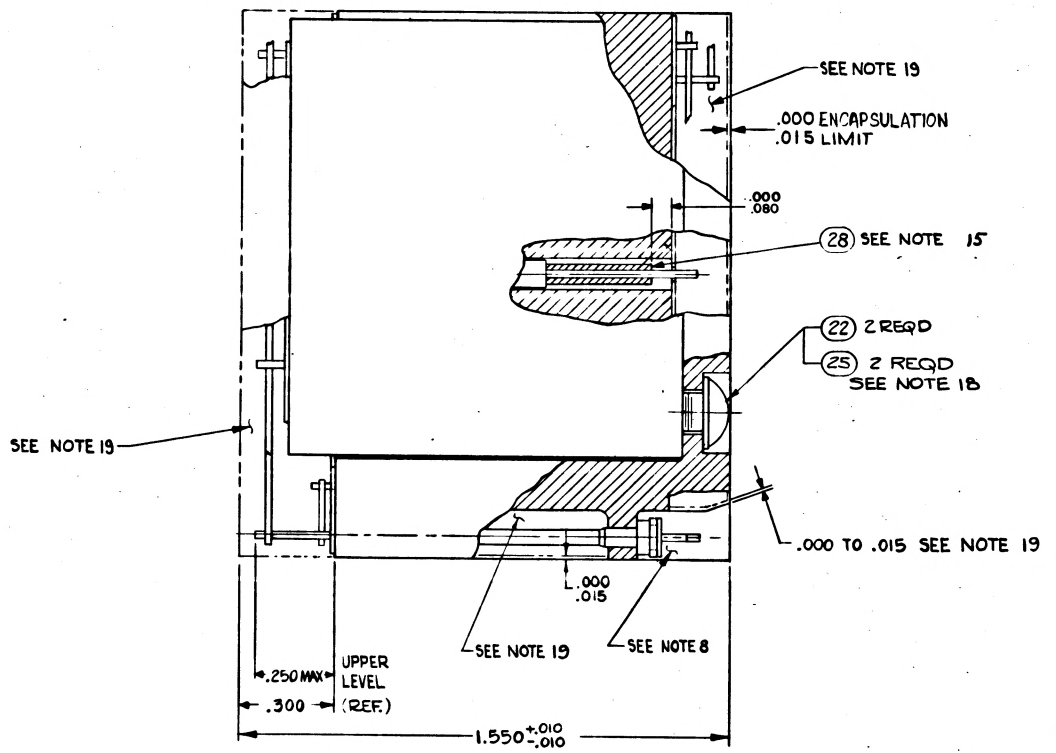
MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN Orzel DATE 13 AUG 64
CHECKED Cevanach 27 AUG 64
APPROVAL [illegible]
APPROVAL [illegible] 10-5-64
NASA APPROVAL
MIT APPROVAL

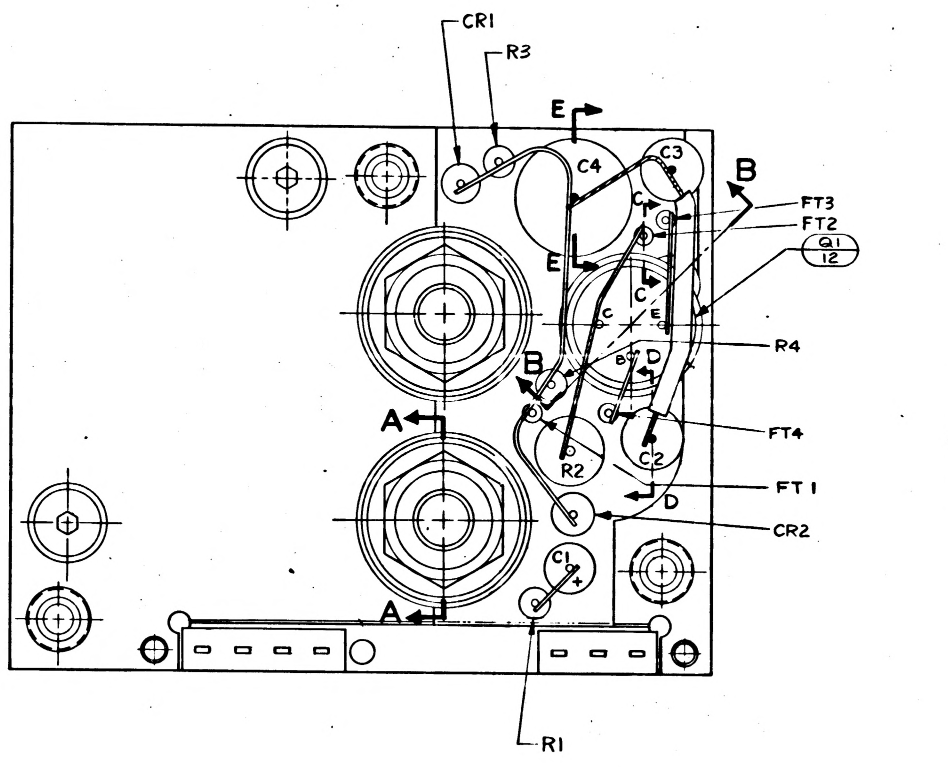
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007545
SCALE 5:1
SHEET 1 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 14334			WK
B		REVISED PER TDRR-17320		12-MAR-65	B. EF
C		REVISED PER TDRR 18106		9 APR 65	HTO EF
D		REVISED PER TDRR 18955		17 MAY 65	WTY
E		REVISED PER TDRR 19391		2 JUN 65	DRC EF
F		REVISED PER TDRR 19439		4 JUN 65	EF
G		REVISED PER TDRR 19511		8 JUN 65	JWP EF
H		REVISION STATUS CHANGED		9 JUN 65	
J		REVISED PER TDRR 22934		65	JWP
K		REVISED PER TDRR 23888		6 NOV 65	RP
L		REVISION STATUS CHANGED		23 FEB 66	RP MEM


SEE NOTE 19
.000 ENCAPSULATION
.015 LIMIT
.000
.080
28 SEE NOTE 15
22 2 REQD
25 2 REQD
SEE NOTE 18
SEE NOTE 19
.000 TO .015 SEE NOTE 19
.000
.015
SEE NOTE 19
SEE NOTE 8
.250 MAX
.300
UPPER LEVEL (REF.)
1.550 +.010 -.010


CR1
R3
E
C4
C3
B
FT3
FT2
Q1
12
E
C
E
B
D
R4
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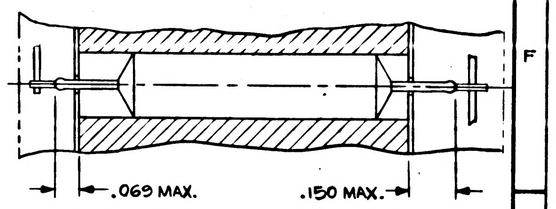
A
R2
C2
FT4
FT1
D
CR2
C1
A
R1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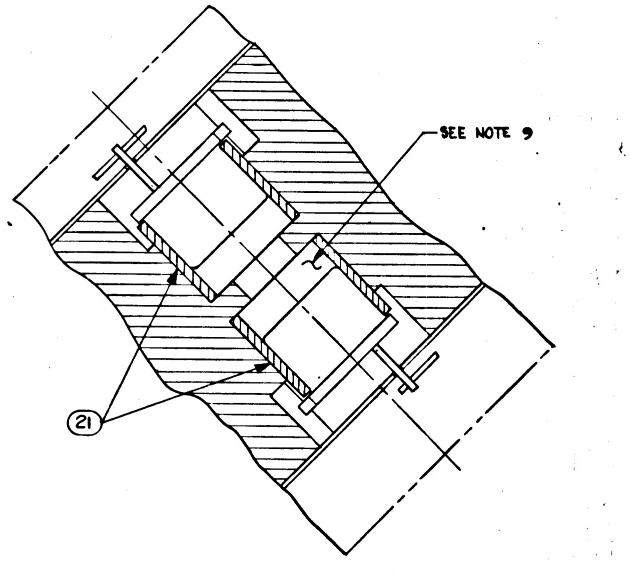
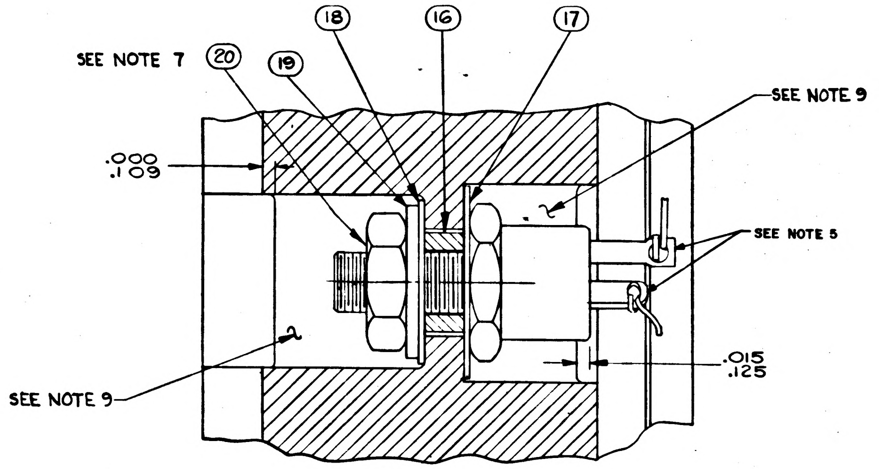
.150 MAX.

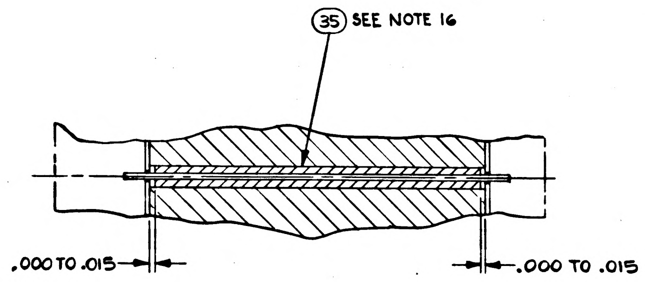
PARTIAL SECTION D-D
C2 & C5 ORIENTATION


SEE NOTE 9
21

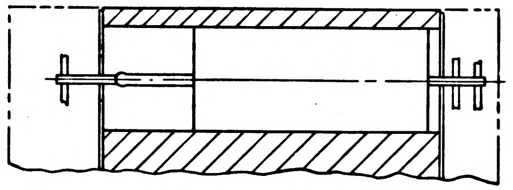
PARTIAL SECTION B-B


18
16
17
SEE NOTE 7
20
19
SEE NOTE 9
.000
.109
SEE NOTE 5
.015
.125
SEE NOTE 9

PARTIAL SECTION A-A (TYPICAL)
2 PLACES


35 SEE NOTE 16
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C
(TYPICAL)



PARTIAL SECTION E-E
C4 ORIENTATION

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orgel 18 AUG 64
CHECKED 27 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL 6 Oct 64

MANNED
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HOUSTON, TEXAS

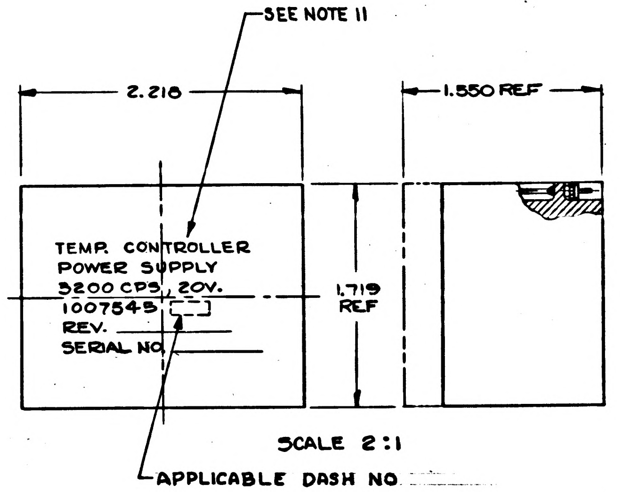
TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V.
MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007545
SCALE 5:1
SHEET 2 OF 2

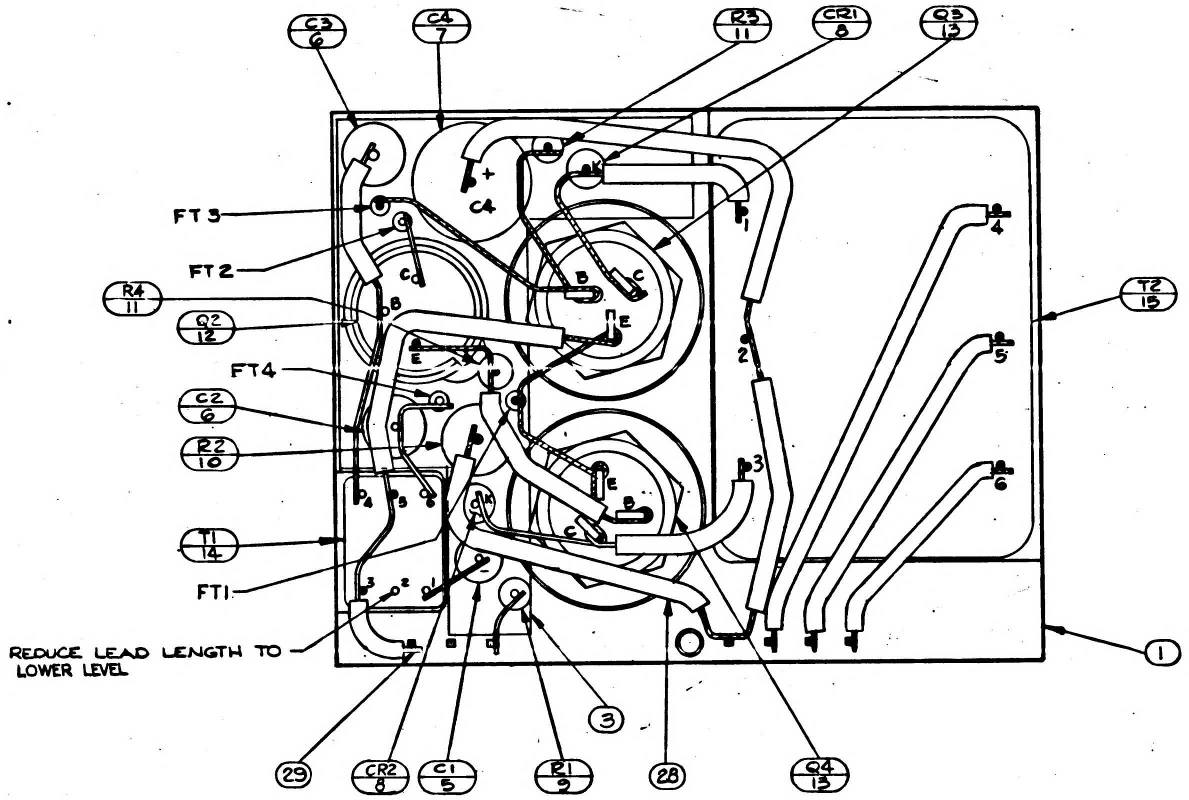
1007545 L

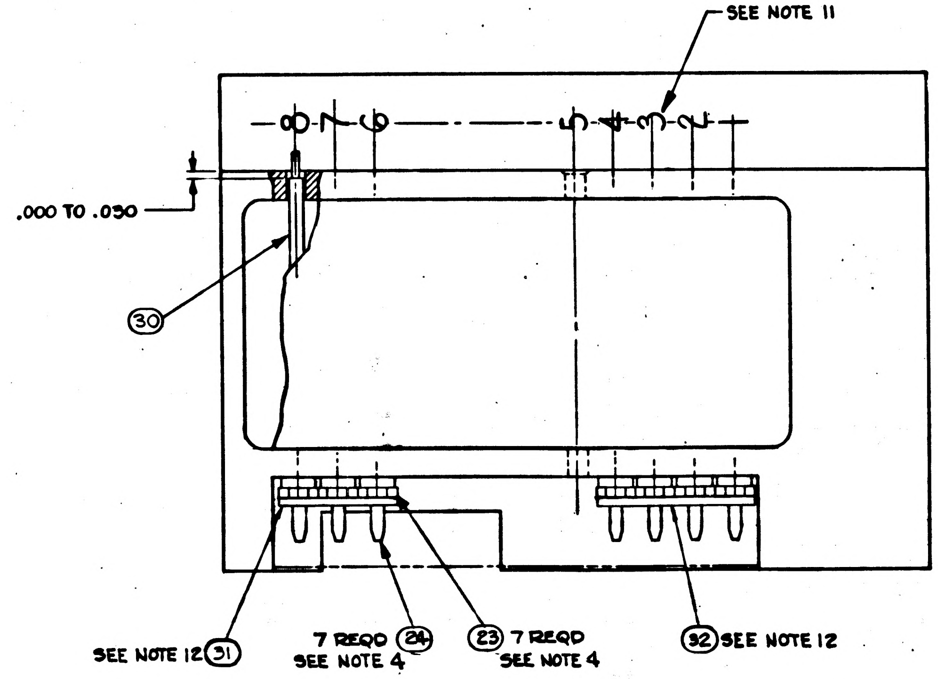
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.

REVISIONS



SCALE 2:1





NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009 METHOD "C" & CENTRALIZED.
3. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 EXCEPT WHERE NOTED.
4. MUST MEET REQUIREMENTS OF ND 1002136.
5. SOLDER PER ND 1002071
6. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
7. MOUNTING TORQUE FOR ITEM 20, 12^{+2}_{-2} INCH POUNDS.
8. AREA TO BE FREE OF ENCAPSULATING COMPOUND.
9. FILL PER ND1002117
10. BLACK DOT & CROSS-HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT & CLEAR WIRING INDICATES LOWER LEVEL WIRING.
11. MARK PIN NUMBERS .08 HIGH (WHITE) & ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002019 & SERIALIZE PER ND 1002023, CENTRALIZE AS SHOWN.
12. BOND FIND NO. 31 & 32 TO FIND NO. 23 PER ND 1002237
13. PROCURE PER PS 1007045.
14. ON ITEMS 3 AND 4
    BROKEN PATHS INDICATE SLEEVING
    "K" INDICATES CATHODE SIDE OF DIODE.
    FT( ) INDICATES FEED THRU.
    MINUS (-) INDICATES NEGATIVE END OF CAPACITOR
    PLUS (+) " POSITIVE " " "
    C INDICATES COLLECTOR LEAD OF TRANSISTOR
    B " BASE " " "
    E " EMITTER " " "
15. TYPICAL SLEEVING FOR CR1, CR2, R1, R3 & R4
16. TYPICAL SLEEVING FOR FT1 THRU FT4
17. AR DENOTES AS REQUIRED.
18. COAT THREADS AND ITEM 15 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
19. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING

LIST OF PARTS AND MATERIALS

			QUANTITY REQUIRED ON	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			☒		REF	1010049	SCHEMATIC
			1		32	1008540-4	GASKET, CONNECTOR-MINIATURE
			1		31	1008540-3	GASKET, CONNECTOR-MINIATURE
			AR		30	1006776-20	INSULATION SLEEVING
			AR		29	1006757-1	WIRE ELEC. - .010 × .020
			AR		28	1006776-21	INSULATION SLEEVING
			AR		27	1006757-8	WIRE, ELEC. - .020 DIA.
			AR		26	1006776-22	INSULATION SLEEVING
			2		25	1008070-75	WASHER, FLAT
			7		24	1006782-5	CONTACT, WRAPOST MALE MIN.
			7		23	1006775	INSULATOR, WRAPOST MALE MIN.
			2		22	1000093-13	SCREW, BUTTON HEAD
			2		21	1008025-2	INSULATOR, BUSHING
			2		20	MS20841-108	HEX. NUT
			2		19	1008071-4	WASHER, FLAT
			2		18	1008024-1	WASHER, INSULATOR
			2		17	1008024-2	WASHER, INSULATOR
			2		16	1008021-1	BUSHING, INSULATOR
			1		15	1010338	TRANSFORMER
			1		14	1010329-1	TRANSFORMER, AUDIO
			1		13	1010269-2	TRANSISTOR
			1		12	1010398-4	TRANSISTOR
			2		11	1006750-1	RESISTOR, FIXED
			1		10	1010312-029	RESISTOR, FIXED
			1		9	1006750-51	RESISTOR, FIXED
			2		8	1010385	DIODE, SEMI-CONDUCTOR DEVICE
			1		7	1006789-2	CAPACITOR
			2		6	1010264-1	CAPACITOR, FIXED
			1		5	1006755-65	CAPACITOR, FIXED
			1		4	1015707	INSULATOR
			1		3	1015706	INSULATOR
					2		
			1		1	1015708	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007571		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± - XXX ±.005 ±
- . XX ±.02 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Chyal DATE 13 AUG 64
CHECKED A. Heinrich 27 AUG 64
APPROVAL [illegible] 1 SEP 64
APPROVAL A. B. Test 10-5-64
NASA APPROVAL [illegible] 10-6-64
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V
MODULE ASSY

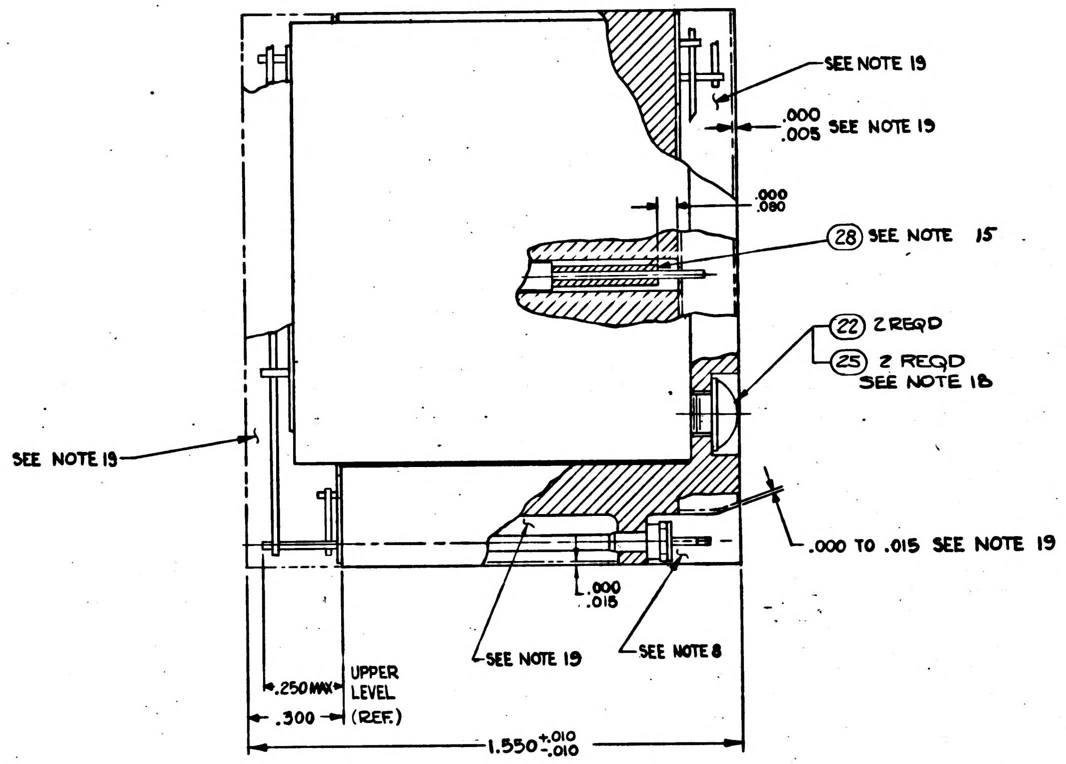
CODE IDENT NO.
SIZE E
1007545
SCALE 5:1
SHEET OF 2

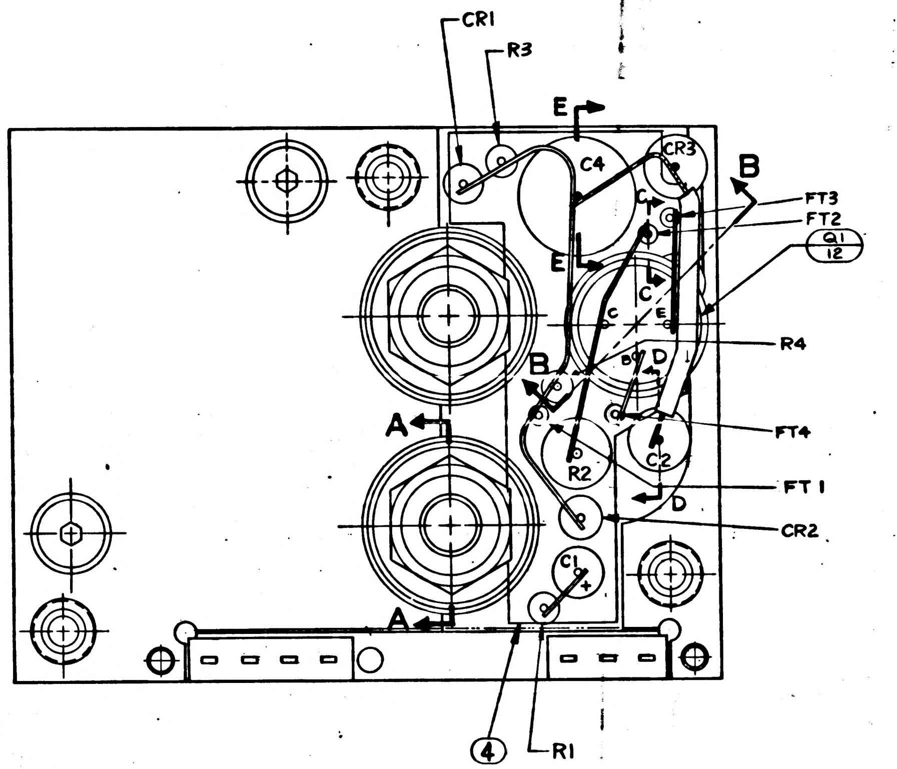
1007545

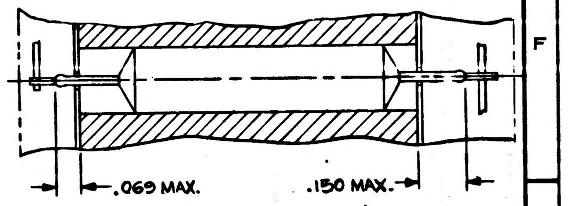
1007545

REVISIONS

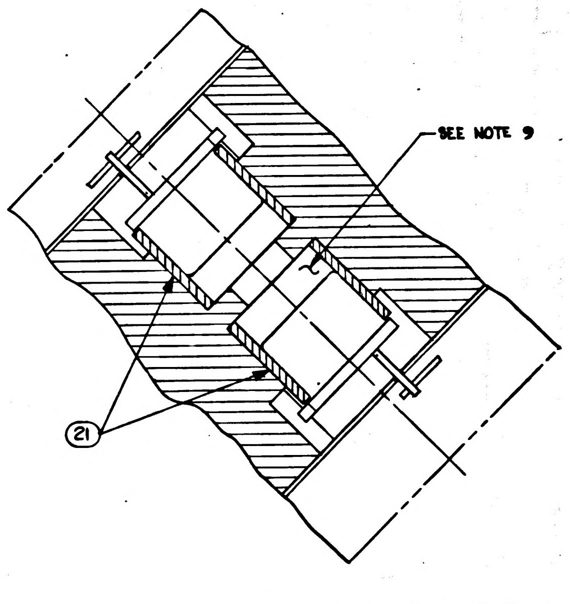
SYM	ZONE	DESCRIPTION	DWG NO.	DATE	APPD.


SEE NOTE 19
.000
.005 SEE NOTE 19
.000
.080
28 SEE NOTE 15
22 2 REQD
25 2 REQD
SEE NOTE 18
SEE NOTE 19
.000 TO .015 SEE NOTE 19
.000
.018
SEE NOTE 19
SEE NOTE 8
.250 MAX
.300
UPPER LEVEL (REF.)
1.550 +.010 -.010

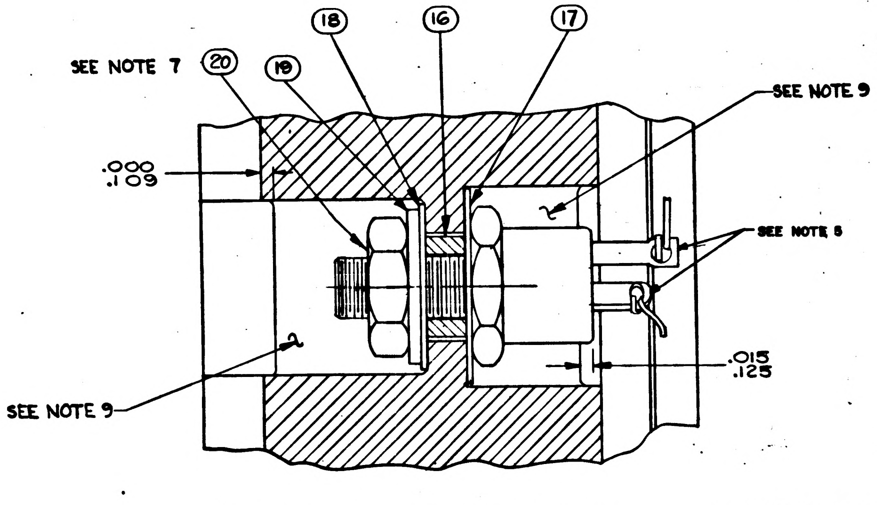

CR1
R3
E
C4
CR3
B
FT3
FT2
Q1
12
R4
B
A
FT4
R2
C2
FT 1
D
CR2
C1
A
4
R1


.069 MAX.
.150 MAX.

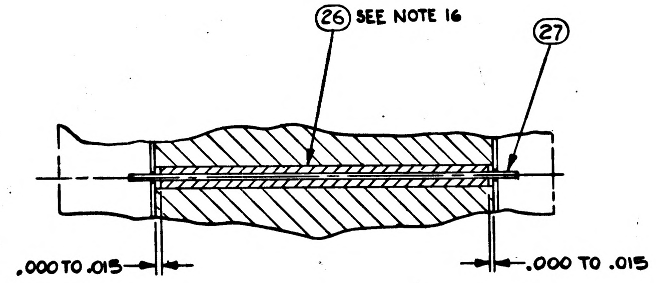
PARTIAL SECTION D-D
C2 & C3 ORIENTATION


SEE NOTE 9
21

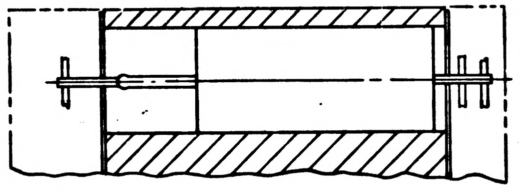
PARTIAL SECTION B-B


SEE NOTE 7
20
19
18
16
17
SEE NOTE 9
.000
.109
SEE NOTE 8
.015
.125
SEE NOTE 9

PARTIAL SECTION A-A (TYPICAL)
2 PLACES


26 SEE NOTE 16
27
.000 TO .015
.000 TO .015

PARTIAL SECTION C-C
(TYPICAL)



PARTIAL SECTION E-E
C4 ORIENTATION

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ — + — + —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] 12 AUG 64
CHECKED R. [illegible] 27 AUG 64
APPROVAL [illegible]
APPROVAL [illegible] 10-5-64
NASA APPROVAL W J [illegible] 10-6-64
KIT APPROVAL [illegible] 6 Oct 64

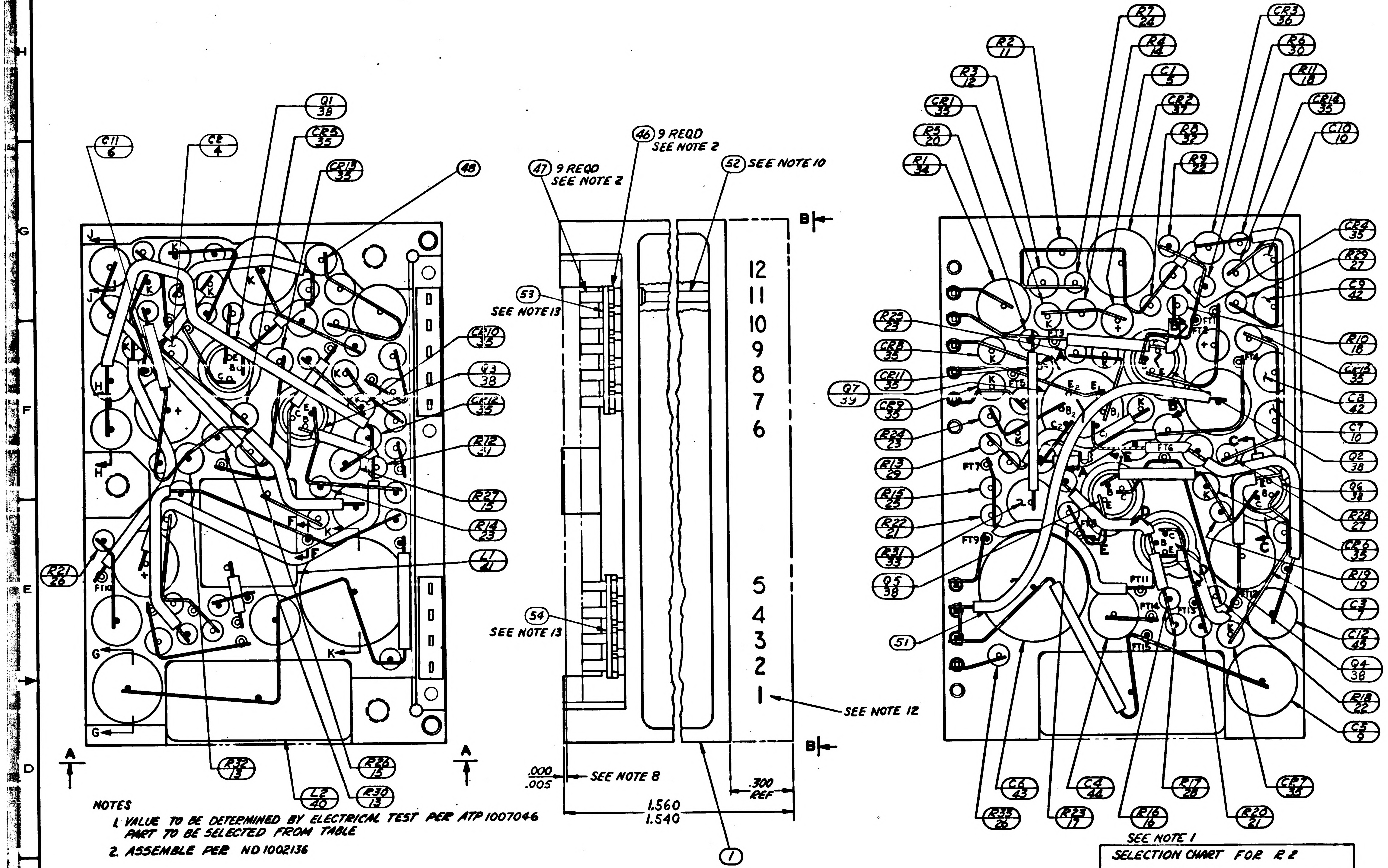
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V.
MODULE ASSY

CODE IDENT NO.
SIZE E
1007545
SCALE 5:1
SHEET 2 OF 2

1007545

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17350		12 MAR 65	RJJ



C11 6
C2 4
Q1 38
CR2 35
CR13 35
48
CR10 35
Q3 38
CR12 35
R12 41
R27 15
R14 23
L1 41
R21 26
R32 13
L2 40
R26 15
R30 13
A
47 9 REQD SEE NOTE 2
46 9 REQD SEE NOTE 2
52 SEE NOTE 10
53 SEE NOTE 13
54 SEE NOTE 13
12 11 10 9 8 7 6
5 4 3 2 1
SEE NOTE 12
B
.000 .005
SEE NOTE 8
1.560 1.540
.300 REF
1
R2 11
R3 12
CR1 35
R5 20
R1 34
R7 24
R4 14
C1 5
CR3 36
R6 30
R11 18
CR14 35
C10 10
CR2 37
R8 32
R9 32
CR4 35
R29 27
C9 42
R10 18
CR15 35
C8 42
C7 10
Q2 38
Q6 38
R28 27
CR6 35
R19 19
C3 7
C12 45
Q4 38
R18 22
C5 9
R22 23
CR8 35
CR11 35
CR9 35
R24 23
R13 29
R15 23
R22 21
R31 33
Q5 38
Q7 39
51
C6 43
C4 44
R17 28
CR7 35
R33 26
R23 17
R16 16
R20 21
FT1 FT2 FT3 FT4 FT5 FT6 FT7 FT8 FT9 FT10 FT11 FT12 FT13 FT14 FT15
J H G F K E B C

NOTES

1. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007046 PART TO BE SELECTED FROM TABLE
2. ASSEMBLE PER ND 1002136
3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.
5. COMPONENTS TO BE CENTRALIZED & CEMENTED IN PLACE PER ND 1002009 METHOD C
6. ON ITEMS 2 & 3:
   - BROKEN PATHS INDICATE INSULATION SLEEVING
   - K INDICATES CATHODE SIDE OF DIODE
   - FT ( ) INDICATES FEED THRU
   - PLUS (+) INDICATES POSITIVE END OF CAPACITOR
   - C: INDICATES COLLECTOR LEAD OF TRANSISTOR
   - B: INDICATES BASE LEAD OF TRANSISTOR
   - E: INDICATES EMITTER LEAD OF TRANSISTOR
   - C_1 & C_2: INDICATES COLLECTOR OF MULTI STAGE TRANSISTOR
   - B_1 & B_2: INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
   - E_1 & E_2: INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR
7. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
8. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
9. AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. USE AS REQUIRED.
11. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
12. MARK PIN NUMBERS .060/.100 HIGH (WHITE) AND ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
13. BOND ITEMS 53 AND 54 TO ITEM 46 PER ND 1002237.
14. TYPICAL SLEEVING FOR R5 THRU R25, R28, R29 & R33 FOR SECTIONS AND AUXILIARY VIEWS SEE SHEET 2.
15. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT15
16. PROCURE PER PS1007046
17. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.

SEE NOTE 1

SELECTION CHART FOR C5

PART NUMBER	VALUE UF
1010264-20	.039
-21	.047
-22	.056
-23	.068
-24	.082
-25	.100
-26	.120
-27	.150

SEE NOTE 1

SELECTION CHART FOR C7 & C10

PART NUMBER	VALUE UF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
-6	.0027
-7	.0033
-8	.0039
-9	.0047

SEE NOTE 1

SELECTION CHART FOR R2

PART NUMBER	VALUE Ω	PART NUMBER	VALUE Ω
1010364-401	6040	1010364-457	11,800
-403	6190	-459	12,100
-405	6340	-461	12,400
-407	6490	-463	12,700
-409	6650	-465	13,000
-411	6810	-467	13,300
-413	6980	-469	13,700
-415	7150	-471	14,000
-417	7320		
-419	7500		
-421	7680		
-423	7870		
-425	8060		
-427	8250		
-429	8450		
-431	8660		
-433	8870		
-435	9090		
-437	9310		
-439	9530		
-441	9760		
-443	10,000		
-445	10,200		
-447	10,500		
-449	10,700		
-451	11,000		
-453	11,300		
-455	11,500		

SEE NOTE 1 (items 9, 10, 11)

QUANTITY REQUIRED			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		X			REF	1010044	SCHEMATIC, ELECTRICAL
		1			54	1008540-4	GASKET, CONNECTOR MINIATURE
		1			53	1008540-5	GASKET, CONNECTOR MINIATURE
		AR			52	1006776-20	INSULATION SLEEVING, ELEC.
		AR			51	1006776-21	INSULATION SLEEVING, ELEC.
		AR			50	1006757-8	WIRE, ELECT .020 DIA
		AR			49	1006776-22	INSULATION SLEEVING, ELEC.
		AR			48	1006757-1	WIRE ELECT .010×.020
		9			47	1006782-5	CONTACT, WRAPOST MALE MIN
		9			46	1006775	INSULATOR, WRAPOST MALE MIN
		1			45	1010375-19	CAPACITOR, FIXED
		1			44	1010375-18	CAPACITOR, FIXED
		1			43	1010264-35	CAPACITOR, FIXED
		2			42	1010264-7	CAPACITOR, FIXED
		1			41	1010277-004	REACTOR
		1			40	1010427	REACTOR
		1			39	1010431	TRANSISTOR
		6			38	1010397-1	TRANSISTOR
		1			37	1010346-1	SEMICONDUCTOR DEVICE DIODE
		1			36	1010372-22	SEMICONDUCTOR DEVICE DIODE
		13			35	1010385	SEMICONDUCTOR DEVICE DIODE
		1			34	1010363-373	RESISTOR, FIXED
		1			33	1010389-49	RESISTOR, FIXED
		1			32	1010369-140	RESISTOR, FIXED
		1			31	1010369-95	RESISTOR, FIXED
		1			30	1010369-94	RESISTOR, FIXED
		1			29	1010369-88	RESISTOR, FIXED
		1			28	1006750-80	RESISTOR, FIXED
		2			27	1006750-76	RESISTOR, FIXED
		2			26	1006750-73	RESISTOR, FIXED
		1			25	1006750-72	RESISTOR, FIXED
		1			24	1006750-60	RESISTOR, FIXED
		3			23	1006750-56	RESISTOR, FIXED
		2			22	1006750-52	RESISTOR, FIXED
		2			21	1006750-48	RESISTOR, FIXED
		1			20	1006750-43	RESISTOR, FIXED
		1			19	1006750-42	RESISTOR, FIXED
		2			18	1006750-40	RESISTOR, FIXED
		1			17	1006750-39	RESISTOR, FIXED
		1			16	1006750-32	RESISTOR, FIXED
		2			15	1010364-693	RESISTOR, FIXED
		1			14	1010364-465	RESISTOR, FIXED
		2			13	1010364-351	RESISTOR, FIXED
		1			12	1010364-387	RESISTOR, FIXED
		1			11	1010364	RESISTOR, FIXED
		2			10	1010264	CAPACITOR, FIXED
		1			9	1010264	CAPACITOR, FIXED
		6			8	1008025-1	INSULATOR, BUSHING
		1			7	1006755-85	CAPACITOR, FIXED
		1			6	1006755-81	CAPACITOR, FIXED
		1			5	1006755-69	CAPACITOR, FIXED
		1			4	1006755-61	CAPACITOR, FIXED
		1			3	1015716	INSULATOR
		1			2	1015715	INSULATOR
		1			1	1015714	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007456		
1007572		
1007576		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ .XX±.02 +
- .XXX±.005 -
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orgel DATE 18 AUG 64
CHECKED A. Vasnich 31 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL W. J. 10-6-64
MIT APPROVAL W. Kupfer 6 Oct 64

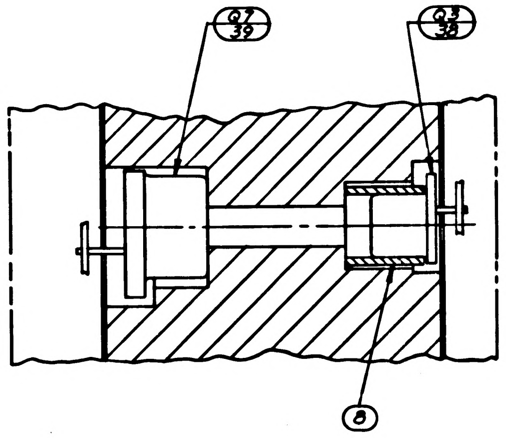
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AAC, FILTER & MULTIVIBRATOR
800 CPS MODULE ASSY

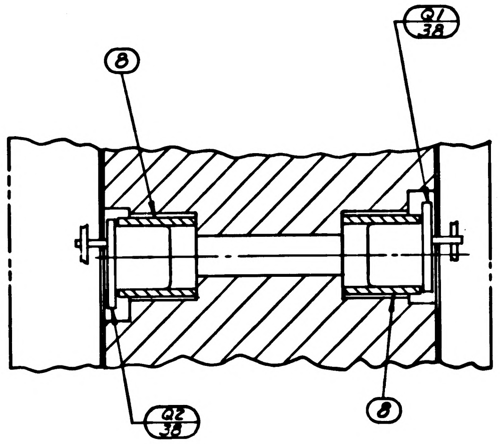
CODE IDENT NO.
SIZE E
1007546
SCALE 5:1
SHEET 1 OF 2

1007546 A

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17350		12 MAR 65	RJS

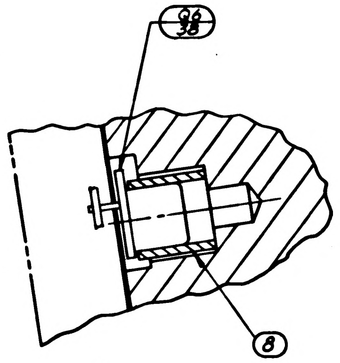


PARTIAL SECTION A-A
(SH 1 ZONE F-4)

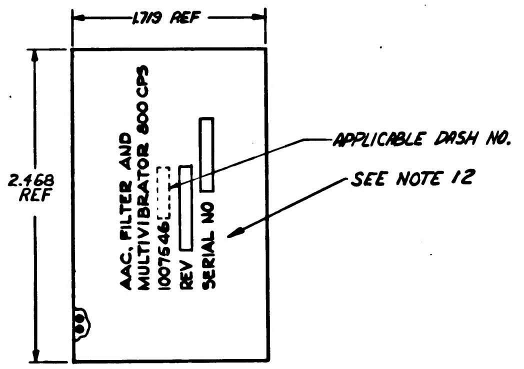


8
Q1 38
Q2 38
8

PARTIAL SECTION B-B
(SH 1 ZONE F-3)

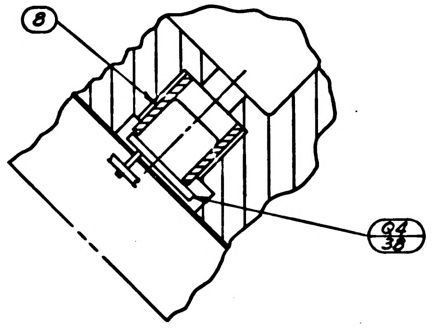


PARTIAL SECTION C-C
(SH 1 ZONE E-3)

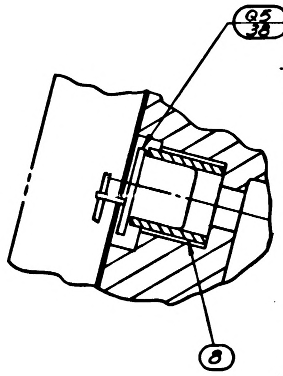


1.719 REF
2.468 REF
AAC. FILTER AND
MULTIVIBRATOR 800 CPS
1007546-
REV
SERIAL NO
APPLICABLE DASH NO.
SEE NOTE 12

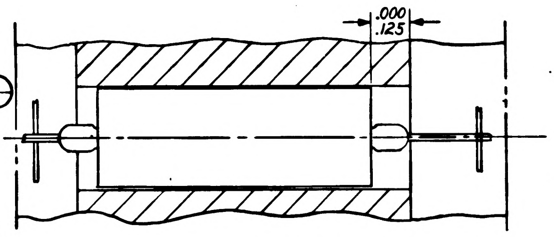
VIEW B-B
SCALE 2:1
(SH 1 ZONE F-5)



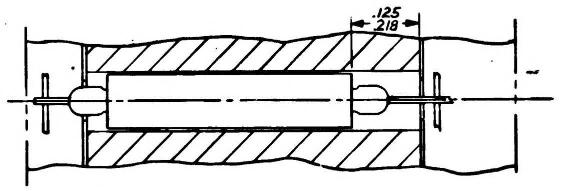
PARTIAL SECTION D-D
(SH 1 ZONE E3)



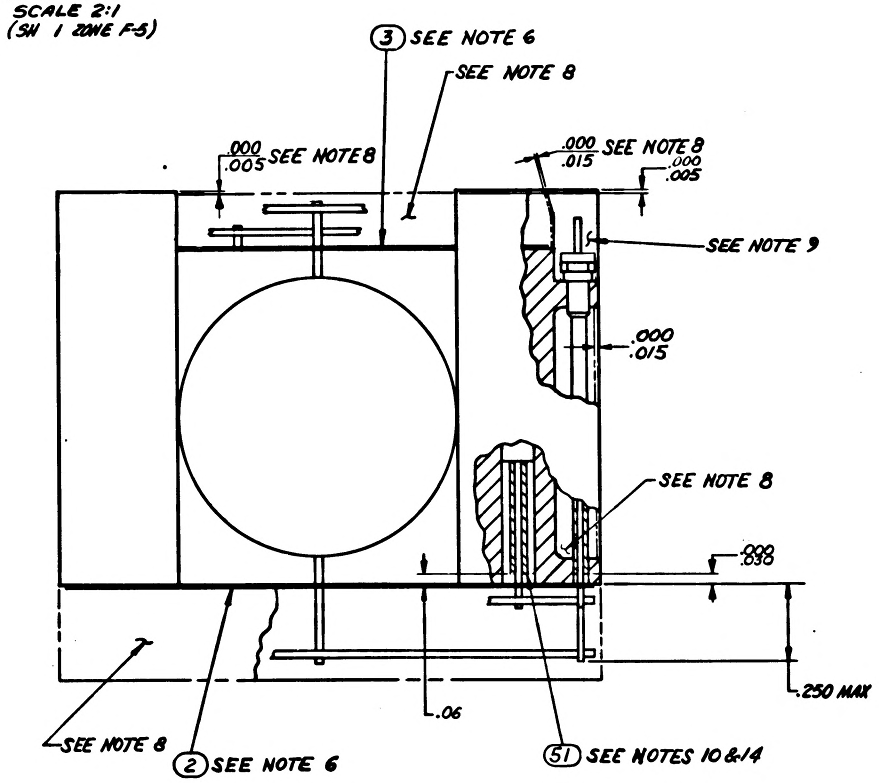
PARTIAL SECTION E-E
(SH 1 ZONE E-4)



PARTIAL SECTION G-G
C5 ORIENTATION
SHEET 1 ZONE D-8

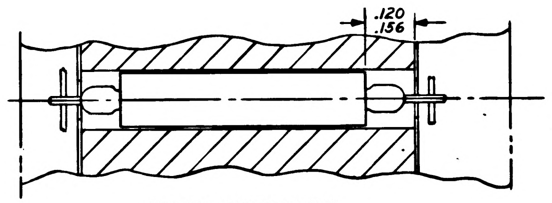


PARTIAL SECTION H-H
C7&C8 ORIENTATION
SHEET 1 ZONE F-8

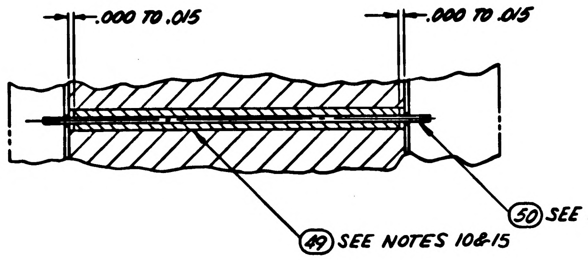


③ SEE NOTE 6
SEE NOTE 8
.000
.005 SEE NOTE 8
.000 SEE NOTE 8
.015
.000
.005
SEE NOTE 9
.000
.015
SEE NOTE 8
.000
.030
.250 MAX
.06
SEE NOTE 8
② SEE NOTE 6
(51) SEE NOTES 10&14

VIEW A-A
(SH 1 ZONE F-6)

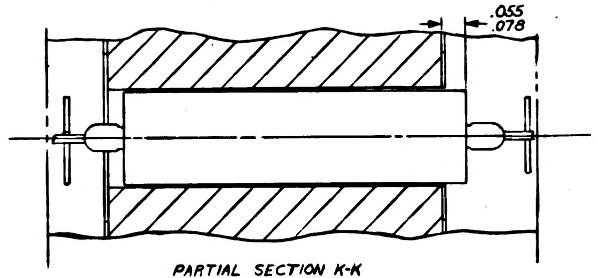


PARTIAL SECTION J-J
C9&C10 ORIENTATION
SHEET 1 ZONE G-8



.000 TO .015
.000 TO .015
㊾ SEE NOTES 10&15
㊿ SEE NOTE 10

PARTIAL SECTION F-F
(SH 1 ZONE E-7)



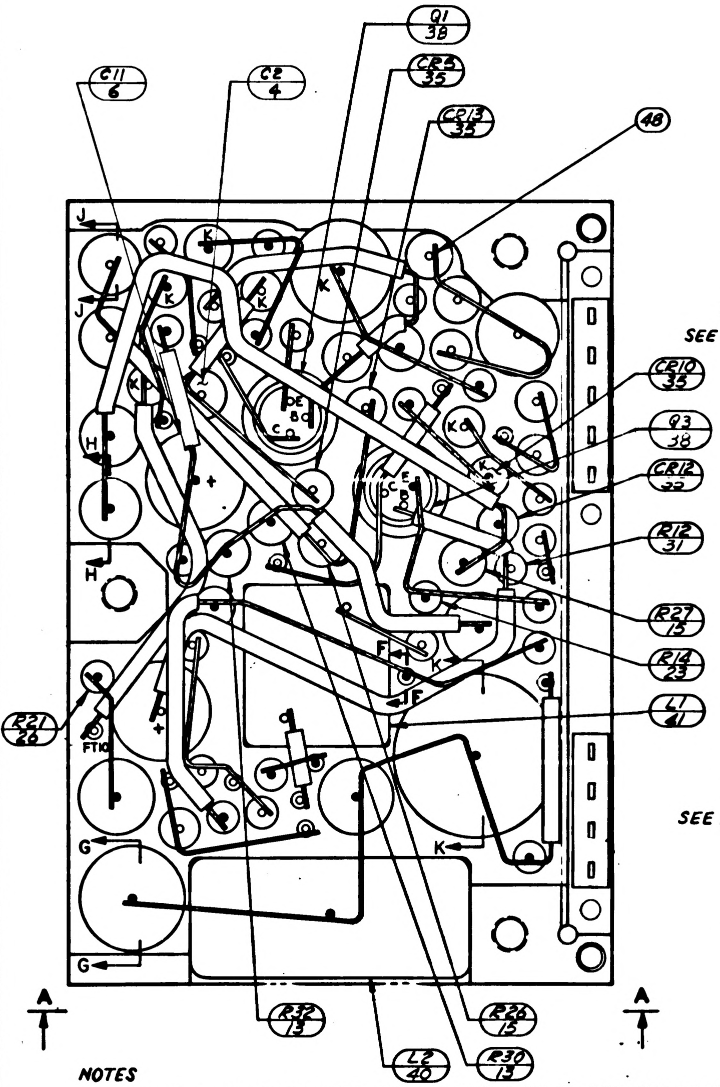
PARTIAL SECTION K-K
C6 ORIENTATION
SHEET 1 ZONE E-7

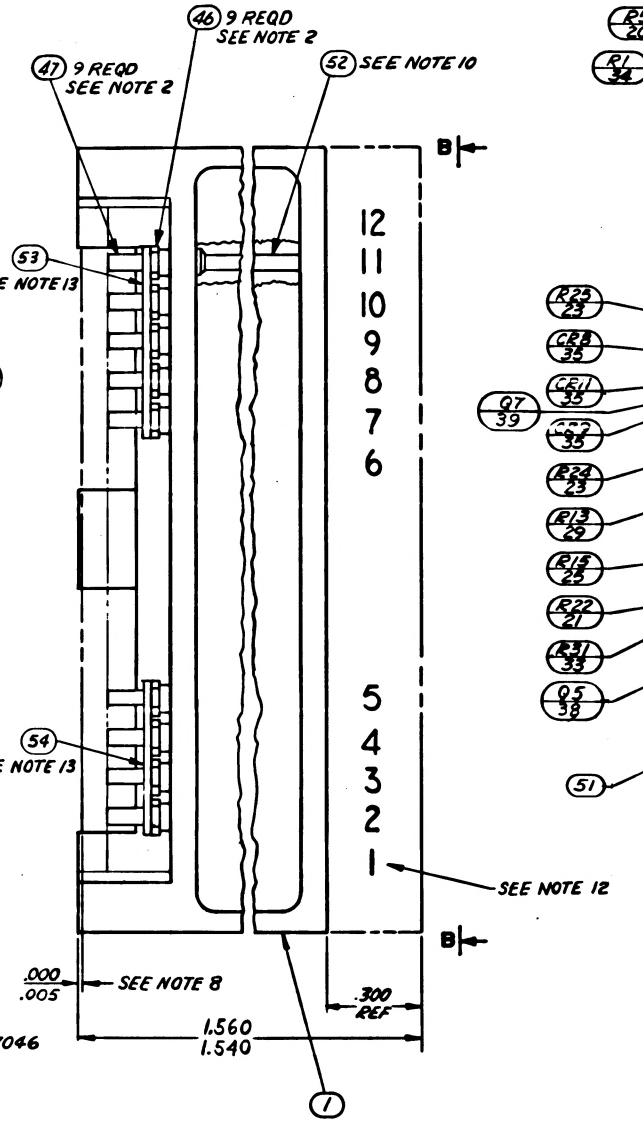
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES + + + − − − − −	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	ACSP PN	
	DRAWN Orgel 18 AUG 64 DATE CHECKED A. Manick 31 AUG 64 APPROVAL APPROVAL 10-5-64	AAC, FILTER AND MULTIVIBRATOR 800 CPS MODULE ASSY
DO NOT SCALE THIS DRAWING		
MATERIAL —	NASA APPROVAL	CODE IDENT NO. SIZE E 1007546
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 5:1 SHEET 2 OF 2

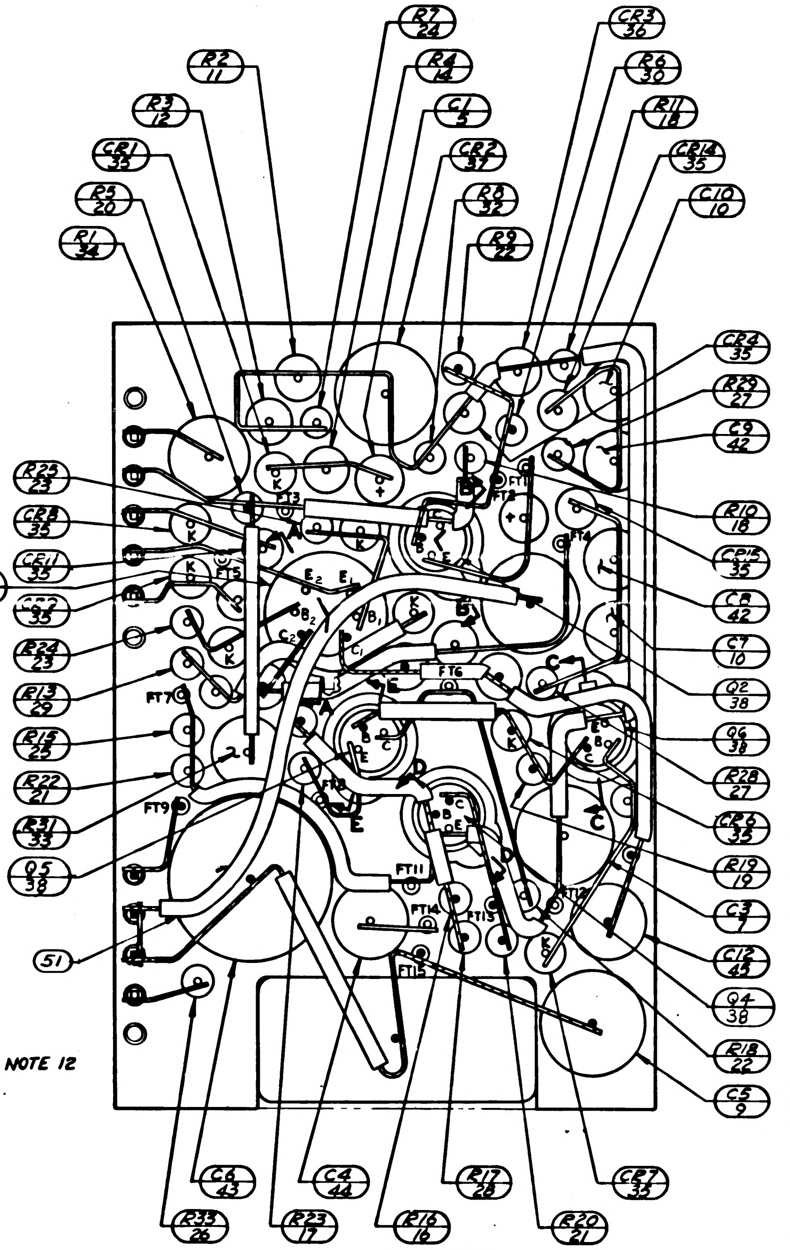
1007546A

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17350		12 MAR 65	EJJ EF
B		REVISED PER TDRR 19405		2 JUN 65	

REVISIONS







NOTES

1. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007046 PART TO BE SELECTED FROM TABLE
2. ASSEMBLE PER ND 1002136
3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.
5. COMPONENTS TO BE CENTRALIZED & CEMENTED IN PLACE PER ND 1002009 METHOD C
6. ON ITEMS 2 & 3:
   - BROKEN PATHS INDICATE INSULATION SLEEVING
   - K INDICATES CATHODE SIDE OF DIODE
   - FT ( ) INDICATES FEED THRU
   - PLUS (+) INDICATES POSITIVE END OF CAPACITOR
   - C: INDICATES COLLECTOR LEAD OF TRANSISTOR
   - B: INDICATES BASE LEAD OF TRANSISTOR
   - E: INDICATES EMITTER LEAD OF TRANSISTOR
   - C_1 & C_2: INDICATES COLLECTOR OF MULTI STAGE TRANSISTOR
   - B_1 & B_2: INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
   - E_1 & E_2: INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR
7. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
8. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
9. AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. USE AS REQUIRED.
11. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
12. MARK PIN NUMBERS .060/.100 HIGH (WHITE) AND ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.

SEE NOTE 1

SELECTION CHART FOR C5	
PART NUMBER	VALUE UF
1010264-20	.039
-21	.047
-22	.056
-23	.068
-24	.082
-25	.100
-26	.120
-27	.150

SEE NOTE 1

SELECTION CHART FOR C7 & C10	
PART NUMBER	VALUE UF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
-6	.0027
-7	.0033
-8	.0039
-9	.0047

18. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF PRIMER BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE I. PRIMER TO CONSIST OF SIX PARTS BY VOLUME OF 1012504-1 AND ONE PART BY VOLUME OF 1012504-2. APPLY MATERIAL AND PRIMER AS INDICATED IN TABLE I.

13. BOND ITEMS 53 AND 54 TO ITEM 46 PER ND 1002237.
14. TYPICAL SLEEVING FOR R5 THRU R25, R28, R29 & R33 FOR SECTIONS AND AUXILIARY VIEWS SEE SHEET 2.
15. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT15
16. PROCURE PER PS1007046
17. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~

SEE NOTE 1

SELECTION CHART FOR R2			
PART NUMBER	VALUE Ω	PART NUMBER	VALUE Ω
1010364-401	6040	1010364-457	11,600
-403	6190	-459	12,100
-405	6340	-461	12,400
-407	6490	-463	12,700
-409	6650	-465	13,000
-411	6810	-467	13,300
-413	6980	-469	13,700
-415	7150	-471	14,000
-417	7320		
-419	7500		
-421	7680		
-423	7870		
-425	8060		
-427	8250		
-429	8450		
-431	8660		
-433	8870		
-435	9090		
-437	9310		
-439	9530		
-441	9760		
-443	10,000		
-445	10,200		
-447	10,500		
-449	10,700		
-451	11,000		
-453	11,300		
-455	11,500		

SEE NOTE 1 (items 9–12)

			011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			X		REF	1010044	SCHEMATIC, ELECTRICAL
			1		54	1008540-4	GASKET, CONNECTOR MINIATURE
			1		53	1008540-5	GASKET, CONNECTOR MINIATURE
			AR		52	1006776-20	INSULATION SLEEVING, ELEC.
			AR		51	1006776-21	INSULATION SLEEVING, ELEC.
			AR		50	1006757-8	WIRE, ELECT .020 DIA
			AR		49	1006776-22	INSULATION SLEEVING, ELEC.
			AR		48	1006757-1	WIRE ELECT .010 × .020
			9		47	1006782-5	CONTACT, WRAPOST MALE MIN
			9		46	1006775	INSULATOR, WRAPOST MALE MIN
			1		45	1010375-19	CAPACITOR, FIXED
			1		44	1010375-18	CAPACITOR, FIXED
			1		43	1010264-35	CAPACITOR, FIXED
			2		42	1010264-7	CAPACITOR, FIXED
			1		41	1010277-004	REACTOR
			1		40	1010427	REACTOR
			1		39	1010431	TRANSISTOR
			6		38	1010397-1	TRANSISTOR
			1		37	1010346-1	SEMICONDUCTOR DEVICE DIODE
			1		36	1010372-22	SEMICONDUCTOR DEVICE DIODE
			13		35	1010385	SEMICONDUCTOR DEVICE DIODE
			1		34	1010363-373	RESISTOR, FIXED
			1		33	1010389-49	RESISTOR, FIXED
			1		32	1010369-140	RESISTOR, FIXED
			1		31	1010369-95	RESISTOR, FIXED
			1		30	1010369-94	RESISTOR, FIXED
			1		29	1010369-88	RESISTOR, FIXED
			1		28	1006750-80	RESISTOR, FIXED
			2		27	1006750-76	RESISTOR, FIXED
			2		26	1006750-73	RESISTOR, FIXED
			1		25	1006750-72	RESISTOR, FIXED
			1		24	1006750-60	RESISTOR, FIXED
			3		23	1006750-56	RESISTOR, FIXED
			2		22	1006750-52	RESISTOR, FIXED
			2		21	1006750-48	RESISTOR, FIXED
			1		20	1006750-43	RESISTOR, FIXED
			1		19	1006750-42	RESISTOR, FIXED
			2		18	1006750-40	RESISTOR, FIXED
			1		17	1006750-39	RESISTOR, FIXED
			1		16	1006750-32	RESISTOR, FIXED
			2		15	1010364-693	RESISTOR, FIXED
			1		14	1010364-465	RESISTOR, FIXED
			2		13	1010364-351	RESISTOR, FIXED
			1		12	1010364-387	RESISTOR, FIXED
			1		11	1010364	RESISTOR, FIXED
			2		10	1010264	CAPACITOR, FIXED
			1		9	1010264	CAPACITOR, FIXED
			6		8	1008025-1	INSULATOR, BUSHING
			1		7	1006755-85	CAPACITOR, FIXED
			1		6	1006755-81	CAPACITOR, FIXED
			1		5	1006755-69	CAPACITOR, FIXED
			1		4	1006755-61	CAPACITOR, FIXED
			1		3	1015716	INSULATOR
			1		2	1015715	INSULATOR
			1		1	1015714	HEATSINK

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007456		
1007572		
1007576		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± .XX ± .02 ±
.XXX ± .005
DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN Orgel 18 AUG 64 DATE
CHECKED 31 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL
MIT APPROVAL

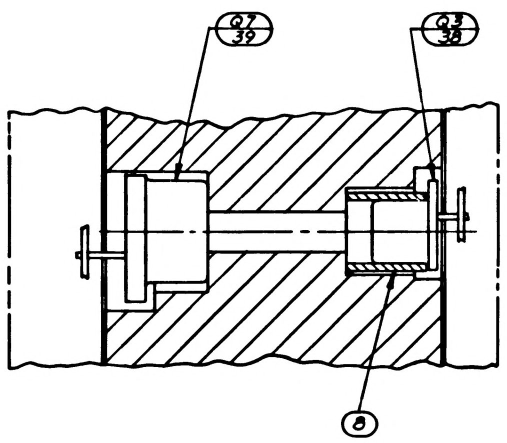
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AAC, FILTER & MULTIVIBRATOR
800 CPS MODULE ASSY

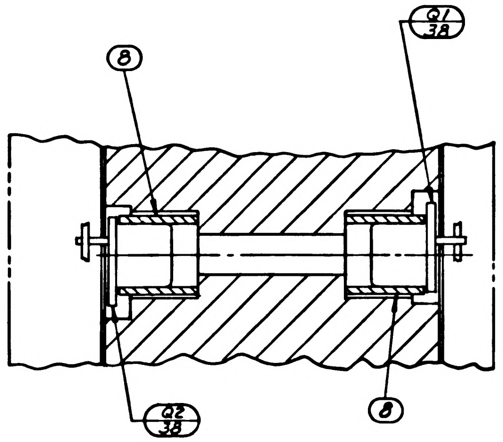
CODE IDENT NO. 80230
SIZE E
1007546
SCALE 5:1
SHEET 1 OF 2

1007546 B

SYM	ZONE	REVISIONS DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17350		12 MAR 65	RJS EF
3		REVISED PER TDRR 19405		1 JUN 65	



PARTIAL SECTION A-A
(SH 1 ZONE F-4)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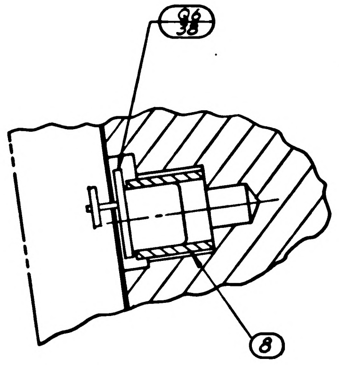
Q1 38
Q2 38
8

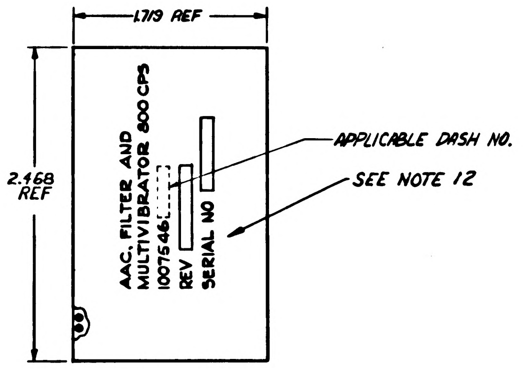
PARTIAL SECTION B-B
(SH 1 ZONE F-3)



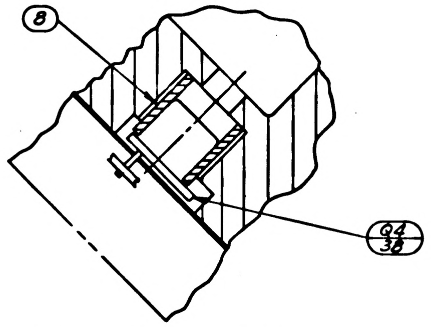
PARTIAL SECTION C-C
(SH 1 ZONE E-3)

TABLE I

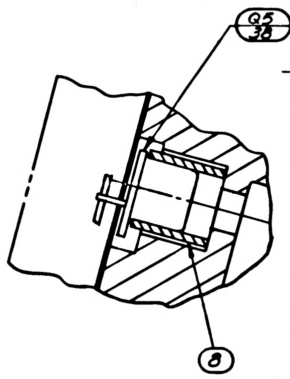
CONFIGURATION	MAT	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER AT PERIMETER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	ADHESIVE	.12 MIN 100% OF PERIMETER .25 MIN 80% OF PERIMETER	.25 MIN 100% OF PERIMETER	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	ADHESIVE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	.25 MIN 100% OF PERIMETER	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	PRIMER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 TO .06 OF EXTERNAL EDGE


1.719 REF
2.468 REF
AAC. FILTER AND MULTIVIBRATOR 800 CPS
1007546-
REV
SERIAL NO
APPLICABLE DASH NO.
SEE NOTE 12

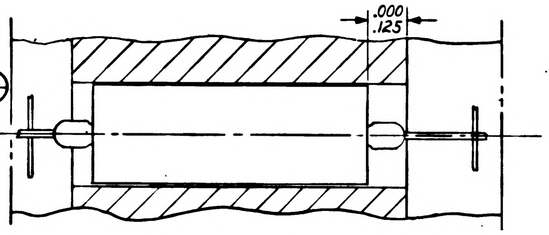
VIEW B-B
SCALE 2:1
(SH 1 ZONE F-5)



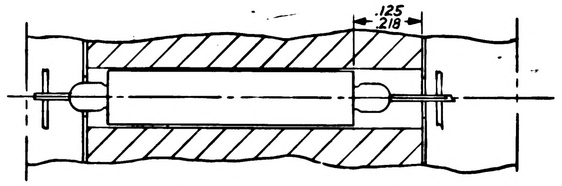
PARTIAL SECTION D-D
(SH 1 ZONE E3)



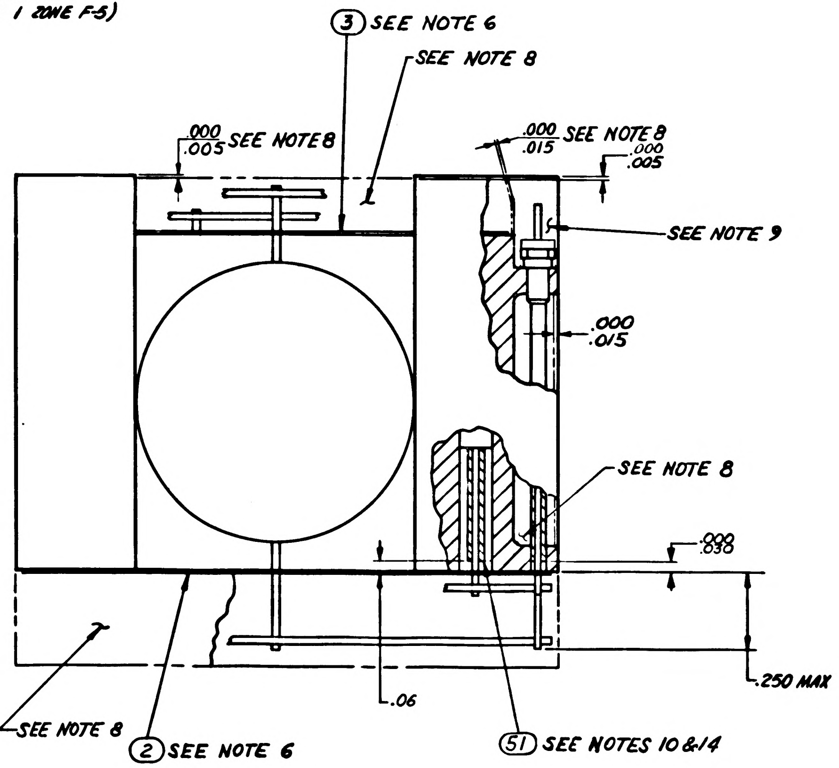
PARTIAL SECTION E-E
(SH 1 ZONE E-4)



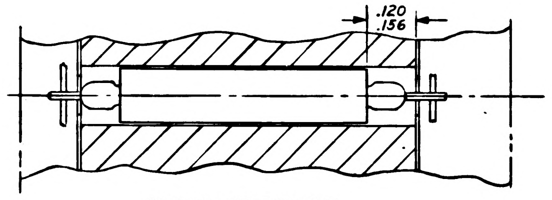
PARTIAL SECTION G-G
C5 ORIENTATION
SHEET 1 ZONE D-8



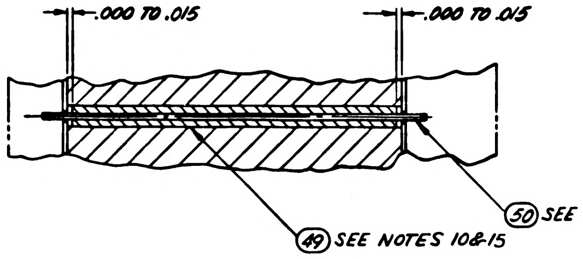
PARTIAL SECTION H-H
C7 & C8 ORIENTATION
SHEET 1 ZONE F-8


3 SEE NOTE 6
SEE NOTE 8
.000
.005 SEE NOTE 8
.000
.015 SEE NOTE 8
.000
.005
SEE NOTE 9
.000
.015
SEE NOTE 8
.000
.030
.250 MAX
.06
SEE NOTE 8
2 SEE NOTE 6
51 SEE NOTES 10 & 14

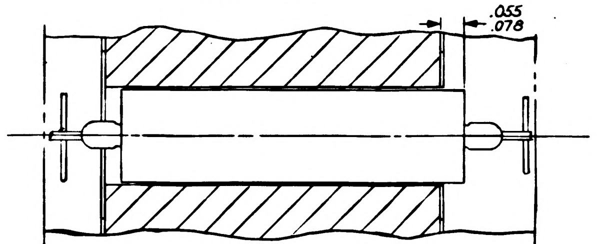
VIEW A-A
(SH 1 ZONE F-6)



PARTIAL SECTION J-J
C9 & C10 ORIENTATION
SHEET 1 ZONE G-8


.000 TO .015
.000 TO .015
49 SEE NOTES 10 & 15
50 SEE NOTE 10

PARTIAL SECTION F-F
(SH 1 ZONE E-7)



PARTIAL SECTION K-K
C6 ORIENTATION
SHEET 1 ZONE E-7

1007546 B

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

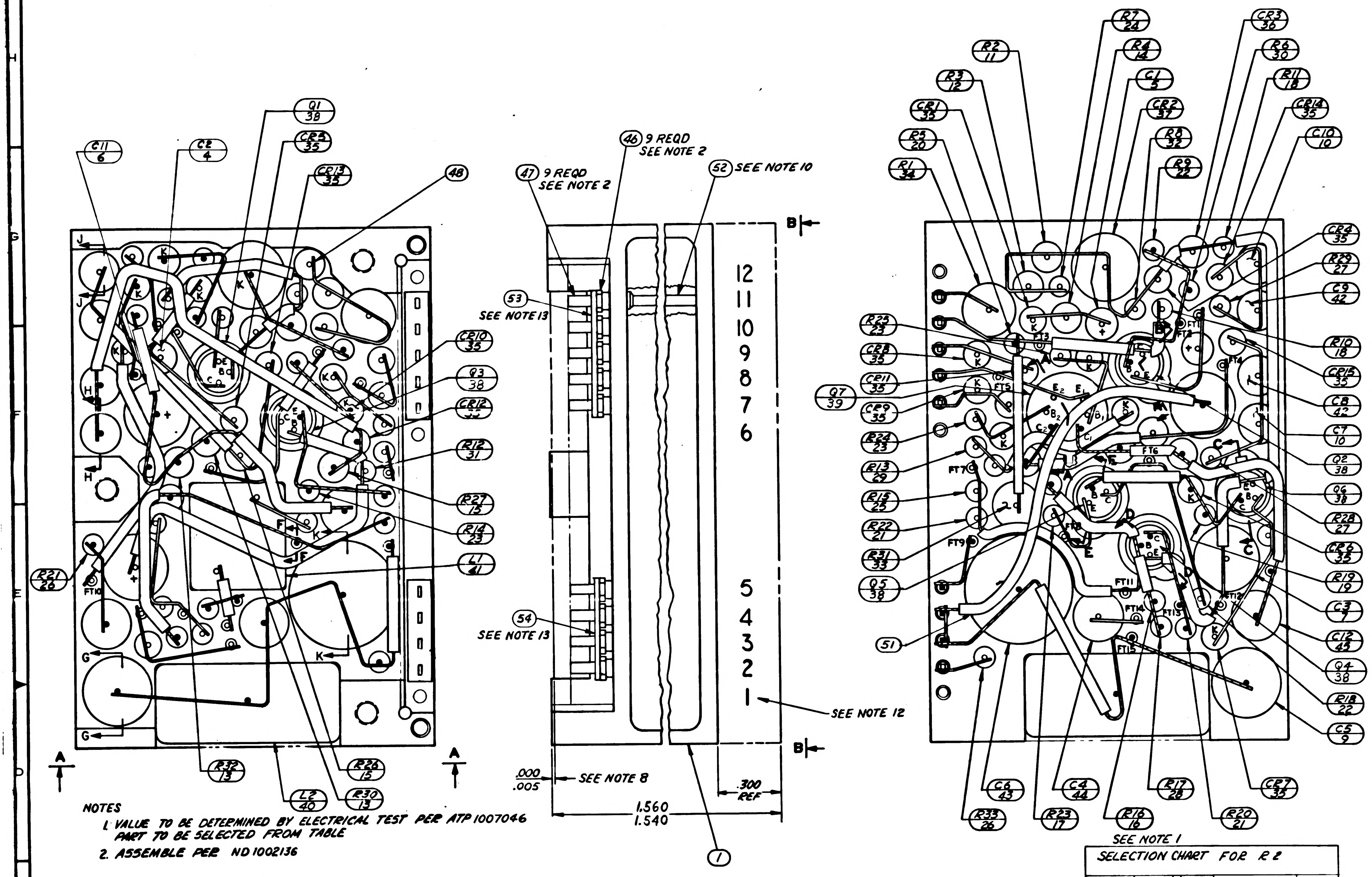
M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orzel DATE 18 AUG 64
CHECKED R. Mervich 31 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AAC, FILTER AND MULTIVIBRATOR
800 CPS MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007546
SCALE 5:1
SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17350		12 MAR 65	RJJ
B		REVISED PER TDRR 19405		2 JUN 65	
C		REVISED PER TDRR 9440		3 JUN 65	



NOTES

1. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007046 PART TO BE SELECTED FROM TABLE
2. ASSEMBLE PER ND 1002136
3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.
5. COMPONENTS TO BE CENTRALIZED & CEMENTED IN PLACE PER ND 1002009 METHOD C
6. ON ITEMS 2 & 3:
   - BROKEN PATHS INDICATE INSULATION SLEEVING
   - K INDICATES CATHODE SIDE OF DIODE
   - FT ( ) INDICATES FEED THRU
   - PLUS (+) INDICATES POSITIVE END OF CAPACITOR
   - C: INDICATES COLLECTOR LEAD OF TRANSISTOR
   - B: INDICATES BASE LEAD OF TRANSISTOR
   - E: INDICATES EMITTER LEAD OF TRANSISTOR
   - C_1 & C_2: INDICATES COLLECTOR OF MULTI STAGE TRANSISTOR
   - B_1 & B_2: INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
   - E_1 & E_2: INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR
7. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
8. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
9. AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. USE AS REQUIRED.
11. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
12. MARK PIN NUMBERS .060/.100 HIGH (WHITE) AND ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
13. BOND ITEMS 53 AND 54 TO ITEM 46 PER ND 1002237.
14. TYPICAL SLEEVING FOR R5 THRU R25, R28, R29 & R33 FOR SECTIONS AND AUXILIARY VIEWS SEE SHEET 2.
15. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT15
16. PROCURE PER PS 1007046
17. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
18. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.

SEE NOTE 1

SELECTION CHART FOR C5

PART NUMBER	VALUE UF
1010264-20	.039
-21	.047
-22	.056
-23	.068
-24	.082
-25	.100
-26	.120
-27	.150

SEE NOTE 1

SELECTION CHART FOR C7 & C10

PART NUMBER	VALUE UF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
-6	.0027
-7	.0033
-8	.0039
-9	.0047

SEE NOTE 1

SELECTION CHART FOR R2

PART NUMBER	VALUE Ω	PART NUMBER	VALUE Ω
1010364-401	6040	1010364-457	11,800
-403	6190	-459	12,100
-405	6340	-461	12,400
-407	6490	-463	12,700
-409	6650	-465	13,000
-411	6810	-467	13,300
-413	6980	-469	13,700
-415	7150	-471	14,000
-417	7320		
-419	7500		
-421	7680		
-423	7870		
-425	8060		
-427	8250		
-429	8450		
-431	8660		
-433	8870		
-435	9090		
-437	9310		
-439	9530		
-441	9760		
-443	10,000		
-445	10,200		
-447	10,500		
-449	10,700		
-451	11,000		
-453	11,300		
-455	11,500		

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED			EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		011				
		X		REF	1010044	SCHEMATIC, ELECTRICAL
		1		54	1008540-4	GASKET, CONNECTOR MINIATURE
		1		53	1008540-5	GASKET, CONNECTOR MINIATURE
		AR		52	1006776-20	INSULATION SLEEVING, ELEC.
		AR		51	1006776-21	INSULATION SLEEVING, ELEC.
		AR		50	1006757-8	WIRE, ELECT .020 DIA
		AR		49	1006776-22	INSULATION SLEEVING, ELEC.
		AR		48	1006757-1	WIRE ELECT .010 × .020
		9		47	1006782-5	CONTACT, WRAPOST MALE MIN
		9		46	1006775	INSULATOR, WRAPOST MALE MIN
		1		45	1010375-19	CAPACITOR, FIXED
		1		44	1010375-18	CAPACITOR, FIXED
		1		43	1010264-35	CAPACITOR, FIXED
		2		42	1010264-7	CAPACITOR, FIXED
		1		41	1010277-004	REACTOR
		1		40	1010427	REACTOR
		1		39	1010431	TRANSISTOR
		6		38	1010397-1	TRANSISTOR
		1		37	1010346-1	SEMICONDUCTOR DEVICE DIODE
		1		36	1010372-22	SEMICONDUCTOR DEVICE DIODE
		13		35	1010385	SEMICONDUCTOR DEVICE DIODE
		1		34	1010363-373	RESISTOR, FIXED
		1		33	1010389-49	RESISTOR, FIXED
		1		32	1010369-140	RESISTOR, FIXED
		1		31	1010369-95	RESISTOR, FIXED
		1		30	1010369-94	RESISTOR, FIXED
		1		29	1010369-88	RESISTOR, FIXED
		1		28	1006750-80	RESISTOR, FIXED
		2		27	1006750-76	RESISTOR, FIXED
		2		26	1006750-73	RESISTOR, FIXED
		1		25	1006750-72	RESISTOR, FIXED
		1		24	1006750-60	RESISTOR, FIXED
		3		23	1006750-56	RESISTOR, FIXED
		2		22	1006750-52	RESISTOR, FIXED
		2		21	1006750-48	RESISTOR, FIXED
		1		20	1006750-43	RESISTOR, FIXED
		1		19	1006750-42	RESISTOR, FIXED
		2		18	1006750-40	RESISTOR, FIXED
		1		17	1006750-39	RESISTOR, FIXED
		1		16	1006750-32	RESISTOR, FIXED
		2		15	1010364-693	RESISTOR, FIXED
		1		14	1010364-465	RESISTOR, FIXED
		2		13	1010364-351	RESISTOR, FIXED
		1		12	1010364-387	RESISTOR, FIXED
		1		11	1010364	RESISTOR, FIXED
		2		10	1010264	CAPACITOR, FIXED
		1		9	1010264	CAPACITOR, FIXED
		6		8	1008025-1	INSULATOR, BUSHING
		1		7	1006755-85	CAPACITOR, FIXED
		1		6	1006755-81	CAPACITOR, FIXED
		1		5	1006755-69	CAPACITOR, FIXED
		1		4	1006755-61	CAPACITOR, FIXED
		1		3	1015716	INSULATOR
		1		2	1015715	INSULATOR
		1		1	1015714	HEATSINK

SEE NOTE 1

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007456		
1007572		
1007576		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS .XX ± .02 .XXX ± .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orgel DATE 18 AUG 64
CHECKED 31 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

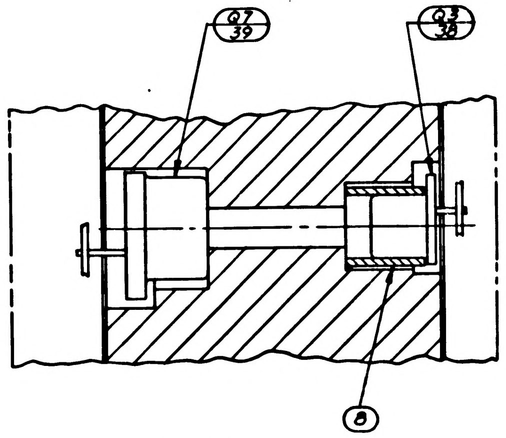
AAC, FILTER & MULTIVIBRATOR
800 CPS MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007546
SCALE 5:1
SHEET 1 OF 2

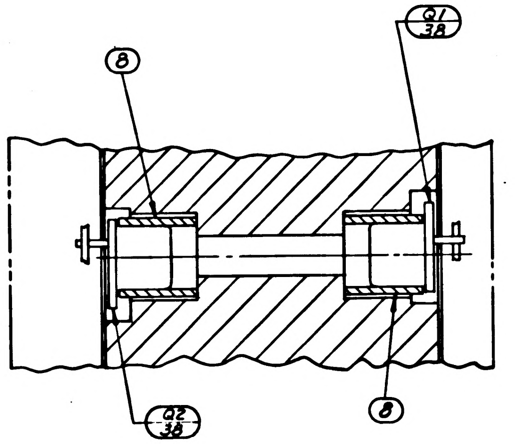
1007546 C

REVISIONS

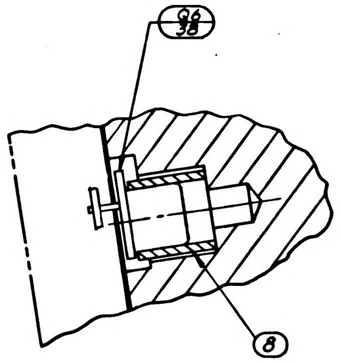
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		Revised Per TDRR 17350		12 MAR 65	RJJ / EF
3		REVISED PER TDRR 19405		1 JUN 66	
C		REVISED PER TDRR 19440		3 JUN 66	



PARTIAL SECTION A-A
(SH 1 ZONE F-4)


8
Q1
38
Q2
38
8

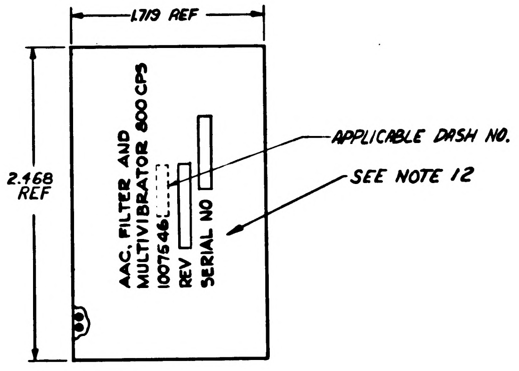
PARTIAL SECTION B-B
(SH 1 ZONE F-3)



PARTIAL SECTION C-C
(SH 1 ZONE E-3)

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE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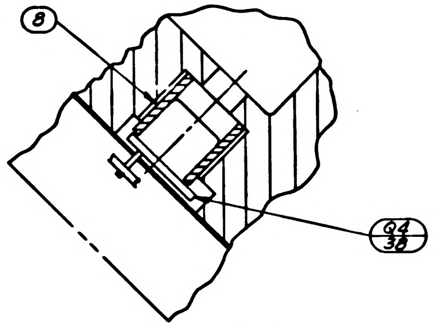
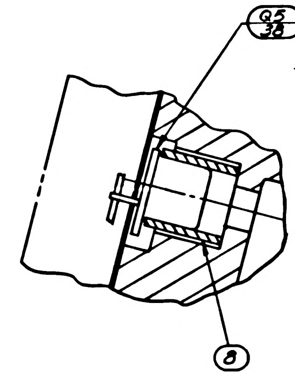
2.468 REF
AAC, FILTER AND
MULTIVIBRATOR 800 CPS
1007546
REV
SERIAL NO
APPLICABLE DASH NO.
SEE NOTE 12

VIEW B-B
SCALE 2:1
(SH 1 ZONE F-5)



PARTIAL SECTION D-D
(SH 1 ZONE E3)



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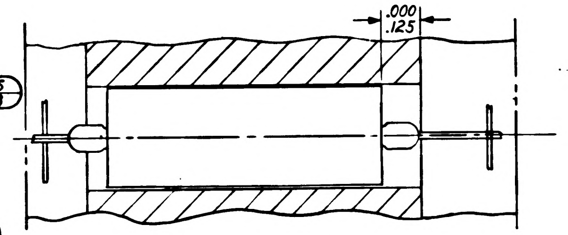
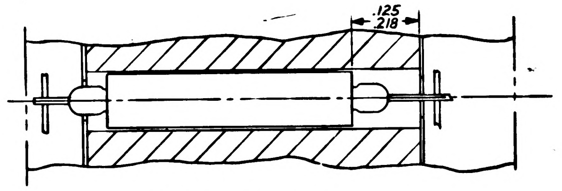
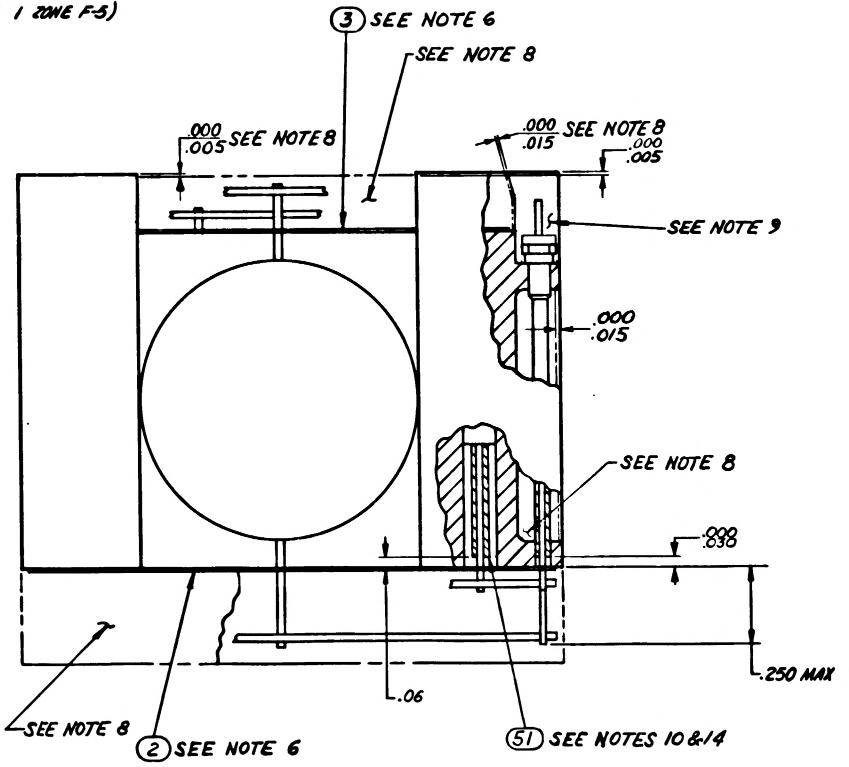


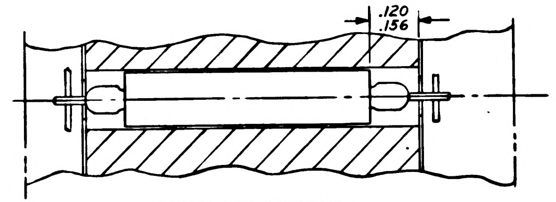
PARTIAL SECTION G-G
C5 ORIENTATION
SHEET 1 ZONE D-8



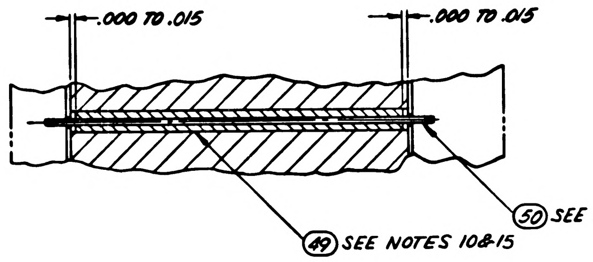
PARTIAL SECTION H-H
C7 & C8 ORIENTATION
SHEET 1 ZONE F-8


3 SEE NOTE 6
SEE NOTE 8
.000
.005 SEE NOTE 8
.000
.015 SEE NOTE 8
.000
.005
SEE NOTE 9
.000
.015
SEE NOTE 8
.000
.030
.250 MAX
.06
SEE NOTE 8
2 SEE NOTE 6
51 SEE NOTES 10 & 14

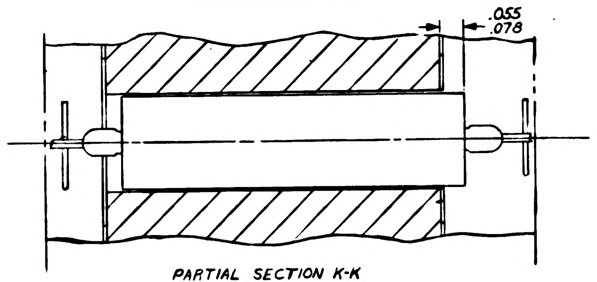
VIEW A-A
(SH 1 ZONE F-6)



PARTIAL SECTION J-J
C9 & C10 ORIENTATION
SHEET 1 ZONE G-8


.000 TO .015
.000 TO .015
50 SEE NOTE 10
49 SEE NOTES 10 & 15

PARTIAL SECTION F-F
(SH 1 ZONE E-7)



PARTIAL SECTION K-K
C6 ORIENTATION
SHEET 1 ZONE E-7

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

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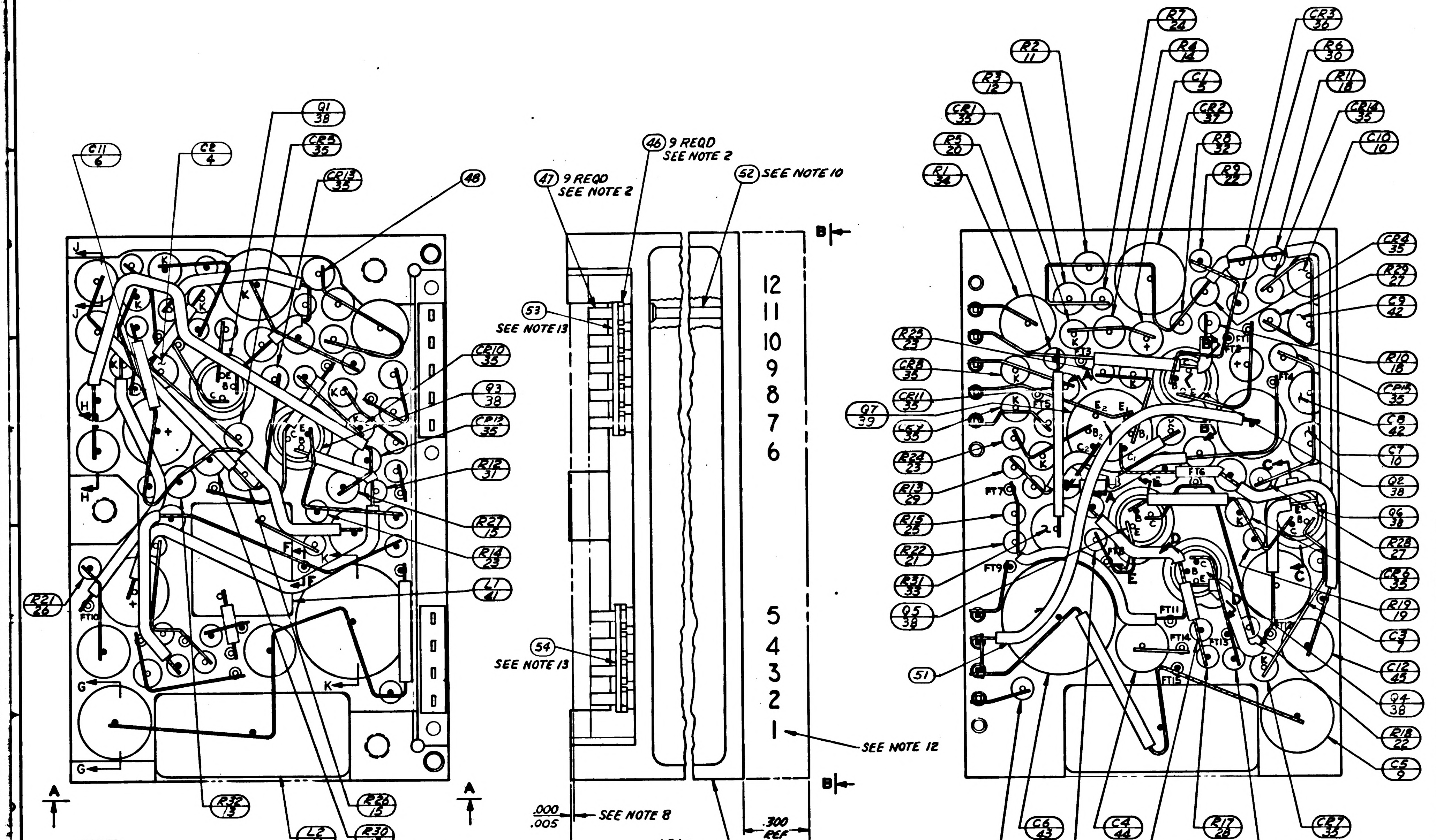
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orgel DATE 18 AUG 64
CHECKED U. Mouveh 31 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AAC, FILTER AND MULTIVIBRATOR
800 CPS MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007546
SCALE 5:1
SHEET 2 OF 2



①

NOTES

1. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007046 PART TO BE SELECTED FROM TABLE

2. ASSEMBLE PER ND 1002136

3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.

5. COMPONENTS TO BE CENTRALIZED & CEMENTED IN PLACE PER ND 1002009 METHOD H.

6. ON ITEMS 2 & 3:
BROKEN PATHS INDICATE INSULATION SLEEVING
K INDICATES CATHODE SIDE OF DIODE
FT ( ) INDICATES FEED THRU
PLUS (+) INDICATES POSITIVE END OF CAPACITOR
C: INDICATES COLLECTOR LEAD OF TRANSISTOR
B: INDICATES BASE LEAD OF TRANSISTOR
E: INDICATES EMITTER LEAD OF TRANSISTOR
C_1 & C_2: INDICATES COLLECTOR OF MULTI STAGE TRANSISTOR
B_1 & B_2: INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
E_1 & E_2: INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR

7. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.

8. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

9. AREA TO BE FREE OF ENCAPSULATING COMPOUND

10. USE AS REQUIRED.

11. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.

12. MARK PIN NUMBERS .060/.100 HIGH (WHITE) AND ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.

20. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNETOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

SEE NOTE 1

SELECTION CHART FOR C5

PART NUMBER	VALUE UF
1010264-20	.039
-21	.047
-22	.056
-23	.068
-24	.082
-25	.100
-26	.120
-27	.150

SEE NOTE 1

SELECTION CHART FOR C7 & C10

PART NUMBER	VALUE UF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
-6	.0027
-7	.0033
-8	.0039
-9	.0047

~~18. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~

19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

13. BOND ITEMS 53 AND 54 TO ITEM 46 PER ND 1002237.

14. TYPICAL SLEEVING FOR R5 THRU R25, R28, R29 & R33 FOR SECTIONS AND AUXILIARY VIEWS SEE SHEET 2.

15. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT15

16. PROCURE PER PS1007046

~~17. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE II.~~

SEE NOTE 1

SELECTION CHART FOR R2

PART NUMBER	VALUE Ω	PART NUMBER	VALUE Ω
1010364-401	6040	1010364-457	11,800
-403	6190	-459	12,100
-405	6340	-461	12,400
-407	6490	-463	12,700
-409	6650	-465	13,000
-411	6810	-467	13,300
-413	6980	-469	13,700
-415	7150	-471	14,000
-417	7320		
-419	7500		
-421	7680		
-423	7870		
-425	8060		
-427	8250		
-429	8450		
-431	8660		
-433	8870		
-435	9090		
-437	9310		
-439	9530		
-441	9760		
-443	10,000		
-445	10,200		
-447	10,500		
-449	10,700		
-451	11,000		
-453	11,300		
-455	11,500		

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17590		12 MAR 65	RJJ
B		REVISED PER TDRR 19405			
C		REVISED PER TDRR 19440			
D		REVISED PER TDRR 19512			

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
X		REF	1010044	SCHEMATIC, ELECTRICAL
1		54	1008540-4	GASKET, CONNECTOR MINIATURE
1		53	1008540-5	GASKET, CONNECTOR MINIATURE
AR		52	1006776-20	INSULATION SLEEVING, ELEC.
AR		51	1006776-21	INSULATION SLEEVING, ELEC.
AR		50	1006757-8	WIRE ELECT .020 DIA
AR		49	1006776-22	INSULATION SLEEVING, ELEC.
AR		48	1006757-1	WIRE ELECT .010×.020
9		47	1006782-5	CONTACT, WRAPOST MALE MIN
9		46	1006775	INSULATOR, WRAPOST MALE MIN
1		45	1010375-19	CAPACITOR, FIXED
1		44	1010375-18	CAPACITOR, FIXED
1		43	1010264-35	CAPACITOR, FIXED
2		42	1010264-7	CAPACITOR, FIXED
1		41	1010277-004	REACTOR
1		40	1010427	REACTOR
1		39	1010431	TRANSISTOR
6		38	1010397-1	TRANSISTOR
1		37	1010346-1	SEMICONDUCTOR DEVICE DIODE
1		36	1010372-22	SEMICONDUCTOR DEVICE DIODE
13		35	1010385	SEMICONDUCTOR DEVICE DIODE
1		34	1010363-373	RESISTOR, FIXED
1		33	1010389-49	RESISTOR, FIXED
1		32	1010369-140	RESISTOR, FIXED
1		31	1010369-95	RESISTOR, FIXED
1		30	1010369-94	RESISTOR, FIXED
1		29	1010369-88	RESISTOR, FIXED
1		28	1006750-80	RESISTOR, FIXED
2		27	1006750-76	RESISTOR, FIXED
2		26	1006750-73	RESISTOR, FIXED
1		25	1006750-72	RESISTOR, FIXED
1		24	1006750-60	RESISTOR, FIXED
3		23	1006750-56	RESISTOR, FIXED
2		22	1006750-52	RESISTOR, FIXED
2		21	1006750-48	RESISTOR, FIXED
1		20	1006750-43	RESISTOR, FIXED
1		19	1006750-42	RESISTOR, FIXED
2		18	1006750-40	RESISTOR, FIXED
1		17	1006750-39	RESISTOR, FIXED
1		16	1006750-32	RESISTOR, FIXED
2		15	1010364-693	RESISTOR, FIXED
1		14	1010364-465	RESISTOR, FIXED
2		13	1010364-351	RESISTOR, FIXED
1		12	1010364-387	RESISTOR, FIXED
1		11	1010364	RESISTOR, FIXED
2		10	1010264	CAPACITOR, FIXED
1		9	1010264	CAPACITOR, FIXED
6		8	1008025-1	INSULATOR, BUSHING
1		7	1006755-85	CAPACITOR, FIXED
1		6	1006755-81	CAPACITOR, FIXED
1		5	1006755-69	CAPACITOR, FIXED
1		4	1006755-61	CAPACITOR, FIXED
1		3	1015716	INSULATOR
1		2	1015715	INSULATOR
1		1	1015714	HEATSINK

SEE NOTE 1 (items 9–11)

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007456		
1007572		
1007576		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± .XX±.02 ±
.XXX±.005
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

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INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orgel DATE 18 AUG 64
CHECKED A. Sarnecki 31 AUG 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

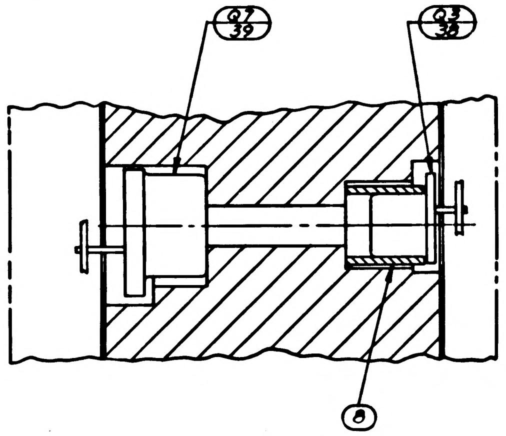
AAC, FILTER & MULTIVIBRATOR
800 CPS MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007546
SCALE 5:1
SHEET 1 OF 2

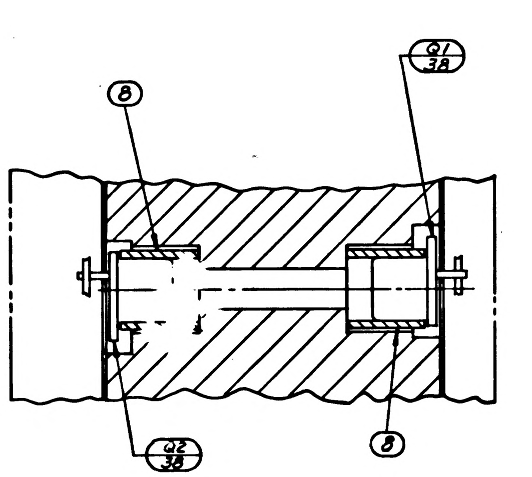
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17350		12 MAR 65	RJJ
B		REVISED PER TDRR 19405		[illegible]	[illegible]
C		REVISED PER TDRR 19440		[illegible]	[illegible]
D		REVISED PER TDRR 9512		[illegible]	[illegible]

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE



PARTIAL SECTION A-A
(SH 1 ZONE F-4)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Q1
38
Q2
38
8

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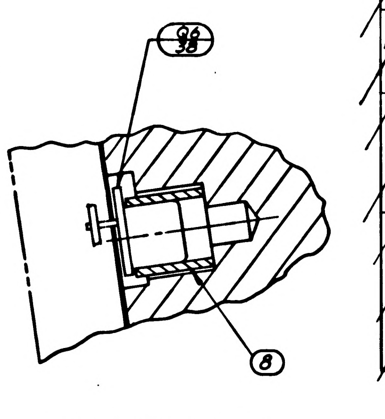
(SH 1 ZONE F-3)



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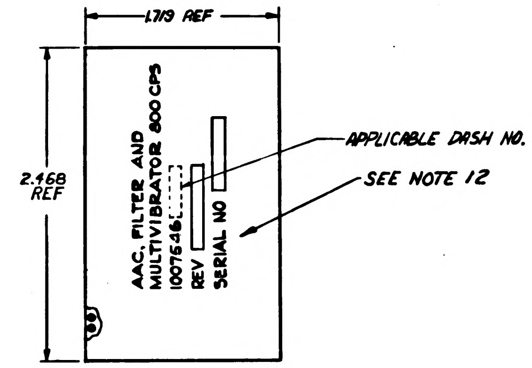
(SH 1 ZONE E-3)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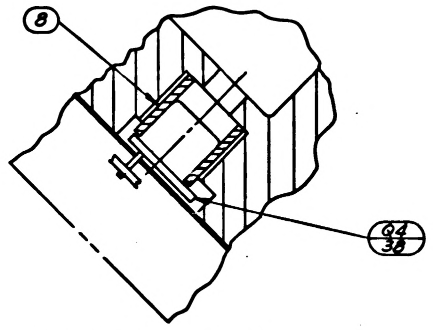
2.468
REF
AAC, FILTER AND
MULTIVIBRATOR 800 CPS
1007546
REV
SERIAL NO
APPLICABLE DASH NO.
SEE NOTE 12

VIEW B-B
SCALE 2:1
(SH 1 ZONE F-5)



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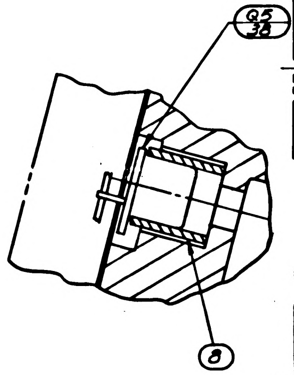
(SH 1 ZONE E3)



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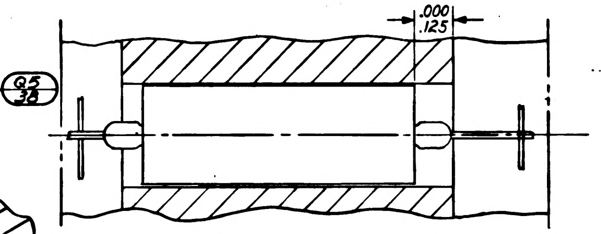
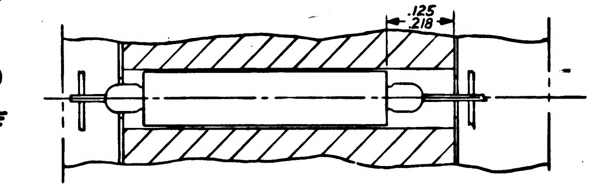
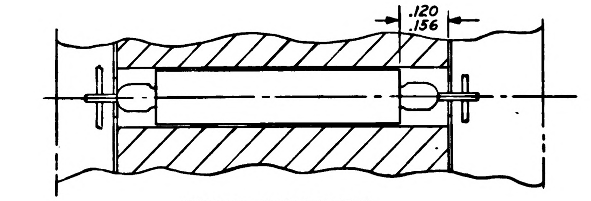


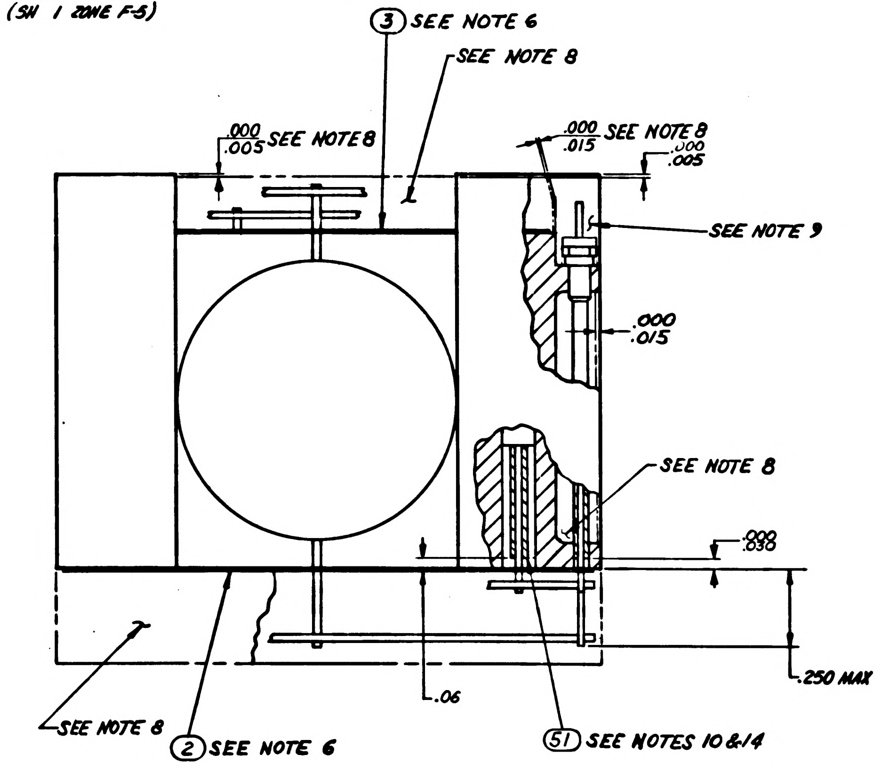
PARTIAL SECTION G-G
C5 ORIENTATION
SHEET 1 ZONE D-8



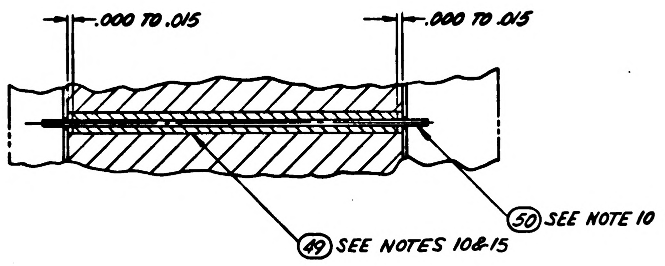
PARTIAL SECTION H-H
C7&C8 ORIENTATION
SHEET 1 ZONE F-8



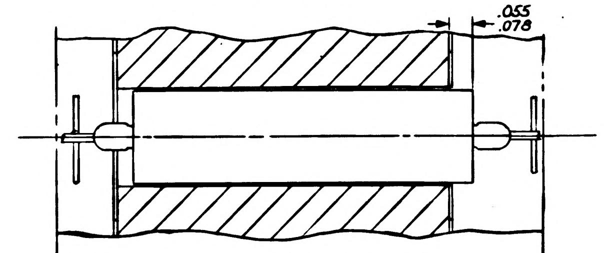
PARTIAL SECTION J-J
C9&C10 ORIENTATION
SHEET 1 ZONE G-8


3 SEE NOTE 6
SEE NOTE 8
.000
.005 SEE NOTE 8
.000 SEE NOTE 8
.015
.000
.005
SEE NOTE 9
.000
.015
SEE NOTE 8
.000
.030
.250 MAX
.06
SEE NOTE 8
2 SEE NOTE 6
51 SEE NOTES 10 & 14

VIEW A-A
(SH 1 ZONE F-6)


.000 TO .015
.000 TO .015
49 SEE NOTES 10 & 15
50 SEE NOTE 10

PARTIAL SECTION F-F
(SH 1 ZONE E-7)



PARTIAL SECTION K-K
C6 ORIENTATION
SHEET 1 ZONE E-7

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	+	+ -
-	-	- -

DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

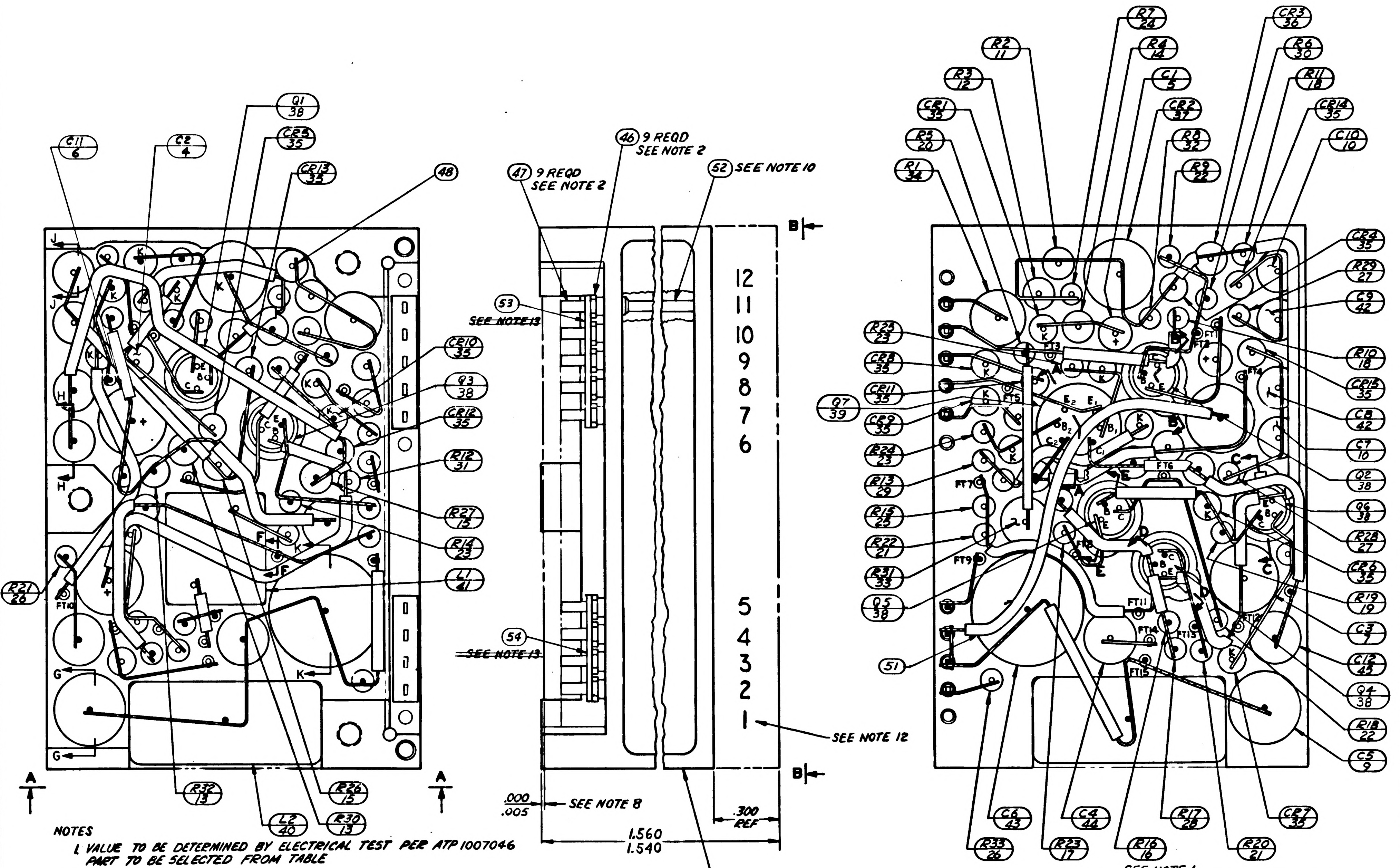
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Vogel 18 AUG 64
CHECKED A. Marick 31 AUG 64
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AAC, FILTER AND MULTIVIBRATOR
800 CPS MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007546
SCALE 5:1
SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 17350		12 MAR 65	EJJ
B		REVISED PER TDRR 19405		[illegible]	[illegible]
C		REVISED PER TDRR 944[illegible]		[illegible]	[illegible]
D		REVISED PER TDRR 95[illegible]		[illegible]	[illegible]
E		REVISED PER TDRR 20143		[illegible]	[illegible]



NOTES

1. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007046 PART TO BE SELECTED FROM TABLE
2. ASSEMBLE PER ND 1002136
3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
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    - FT ( ) INDICATES FEED THRU
    - PLUS (+) INDICATES POSITIVE END OF CAPACITOR
    - C: INDICATES COLLECTOR LEAD OF TRANSISTOR
    - B: INDICATES BASE LEAD OF TRANSISTOR
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    - C_1 & C_2: INDICATES COLLECTOR OF MULTI STAGE TRANSISTOR
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10. USE AS REQUIRED.
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SEE NOTE 1

SELECTION CHART FOR C5

PART NUMBER	VALUE UF
1010264-20	.039
-21	.047
-22	.056
-23	.068
-24	.082
-25	.100
-26	.120
-27	.150

SEE NOTE 1

SELECTION CHART FOR C7 & C10

PART NUMBER	VALUE UF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
-6	.0027
-7	.0033
-8	.0039
-9	.0047

~~18. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~

19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

~~13. BOND ITEMS 53 AND 54 TO ITEM 46 PER ND 1002237.~~

14. TYPICAL SLEEVING FOR R5 THRU R25, R28, R29 & R33 FOR SECTIONS AND AUXILIARY VIEWS SEE SHEET 2.
15. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT15
16. PROCURE PER PS 1007046

~~17. BOND A .25 MIN WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE II.~~

SEE NOTE 1

SELECTION CHART FOR R2

PART NUMBER	VALUE Ω	PART NUMBER	VALUE Ω
1010364-401	6040	1010364-457	11,800
-403	6190	-459	12,100
-405	6340	-461	12,400
-407	6490	-463	12,700
-409	6650	-465	13,000
-411	6810	-467	13,300
-413	6980	-469	13,700
-415	7150	-471	14,000
-417	7320		
-419	7500		
-421	7680		
-423	7870		
-425	8060		
-427	8250		
-429	8450		
-431	8660		
-433	8870		
-435	9090		
-437	9310		
-439	9530		
-441	9760		
-443	10,000		
-445	10,200		
-447	10,500		
-449	10,700		
-451	11,000		
-453	11,300		
-455	11,500		

SEE NOTE 1 (items 9, 10, 11)

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
X		REF	1010044	SCHEMATIC, ELECTRICAL
1		54	1008540-4	GASKET, CONNECTOR MINIATURE
1		53	1008540-5	GASKET, CONNECTOR MINIATURE
AR		52	1006776-20	INSULATION SLEEVING, ELEC.
AR		51	1006776-21	INSULATION SLEEVING, ELEC.
AR		50	1006757-8	WIRE, ELECT .020 DIA
AR		49	1006776-22	INSULATION SLEEVING, ELEC.
AR		48	1006757-1	WIRE ELECT .010 × .020
9		47	1006782-5	CONTACT, WRAPOST MALE MIN
9		46	1006775	INSULATOR, WRAPOST MALE MIN
1		45	1010375-19	CAPACITOR, FIXED
1		44	1010375-18	CAPACITOR, FIXED
1		43	1010264-35	CAPACITOR, FIXED
2		42	1010264-7	CAPACITOR, FIXED
1		41	1010277-004	REACTOR
1		40	1010427	REACTOR
1		39	1010431	TRANSISTOR
6		38	1010397-1	TRANSISTOR
1		37	1010346-1	SEMICONDUCTOR DEVICE DIODE
1		36	1010372-22	SEMICONDUCTOR DEVICE DIODE
13		35	1010385	SEMICONDUCTOR DEVICE DIODE
1		34	1010363-373	RESISTOR, FIXED
1		33	1010389-49	RESISTOR, FIXED
1		32	1010369-140	RESISTOR, FIXED
1		31	1010369-95	RESISTOR, FIXED
1		30	1010369-94	RESISTOR, FIXED
1		29	1010369-88	RESISTOR, FIXED
1		28	1006750-80	RESISTOR, FIXED
2		27	1006750-76	RESISTOR, FIXED
2		26	1006750-73	RESISTOR, FIXED
1		25	1006750-72	RESISTOR, FIXED
1		24	1006750-60	RESISTOR, FIXED
3		23	1006750-56	RESISTOR, FIXED
2		22	1006750-52	RESISTOR, FIXED
2		21	1006750-48	RESISTOR, FIXED
1		20	1006750-43	RESISTOR, FIXED
1		19	1006750-42	RESISTOR, FIXED
2		18	1006750-40	RESISTOR, FIXED
1		17	1006750-39	RESISTOR, FIXED
1		16	1006750-32	RESISTOR, FIXED
2		15	1010364-693	RESISTOR, FIXED
1		14	1010364-465	RESISTOR, FIXED
2		13	1010364-351	RESISTOR, FIXED
1		12	1010364-387	RESISTOR, FIXED
1		11	1010364	RESISTOR, FIXED
2		10	1010264	CAPACITOR, FIXED
1		9	1010264	CAPACITOR, FIXED
6		8	1008025-1	INSULATOR, BUSHING
1		7	1006755-85	CAPACITOR, FIXED
1		6	1006755-81	CAPACITOR, FIXED
1		5	1006755-69	CAPACITOR, FIXED
1		4	1006755-61	CAPACITOR, FIXED
1		3	1015716	INSULATOR
1		2	1015715	INSULATOR
1		1	1015714	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007456		
1007572		
1007576		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS .XX ± .02 .XXX ± .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orgel 18 AUG 64
CHECKED A. Idenich 31 AUG 64
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

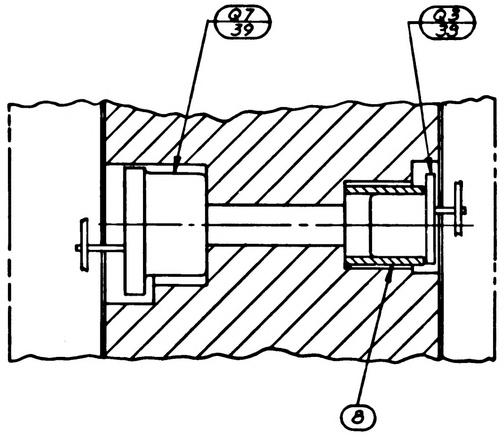
AAC, FILTER & MULTIVIBRATOR
800 CPS MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007546
SCALE 5:1
SHEET 1 OF 2

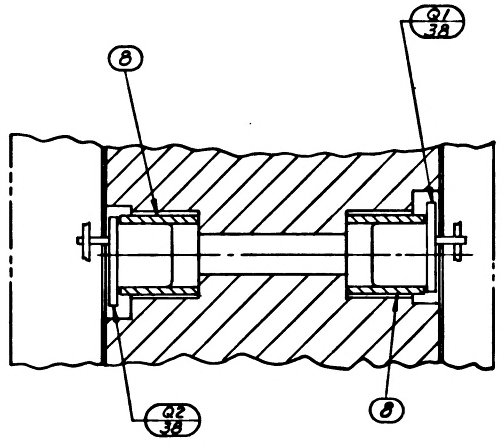
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 17350		12 MAR 65	RJJ
3		REVISED PER TDRR 9-[illegible]		10JUN65	[illegible]
C		REVISED PER TDRR [illegible]		3 [illegible]	[illegible]
D		REVISED PER TDRR 9[illegible]		4 [illegible]	[illegible]
E		REVISION STATUS CHANGE		[illegible] 65	[illegible]

TABLE I

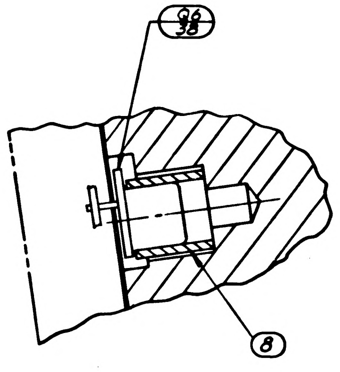
CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE



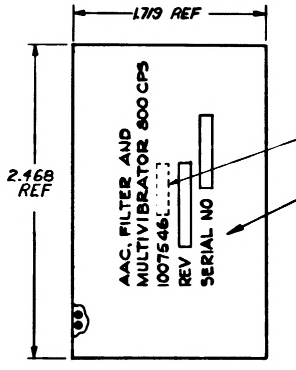
PARTIAL SECTION A-A
(SH 1 ZONE F-4)


8
Q1
38
Q2
38
8

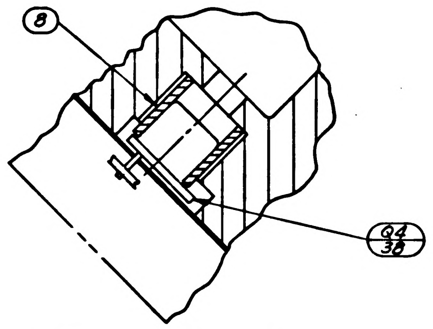
PARTIAL SECTION B-B
(SH 1 ZONE F-3)



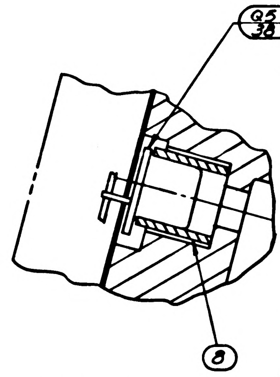
PARTIAL SECTION C-C
(SH 1 ZONE E-3)


1.719 REF
2.468 REF
AAC, FILTER AND MULTIVIBRATOR 800 CPS
1007546[ ]
REV
SERIAL NO
APPLICABLE DASH NO.
SEE NOTE 12

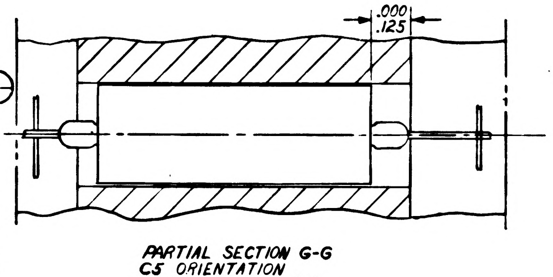
VIEW B-B
SCALE 2:1
(SH 1 ZONE F-5)



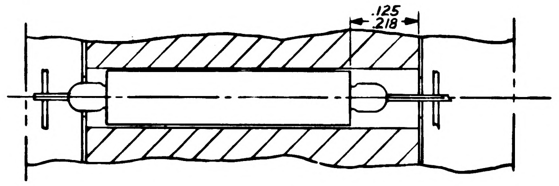
PARTIAL SECTION D-D
(SH 1 ZONE E3)



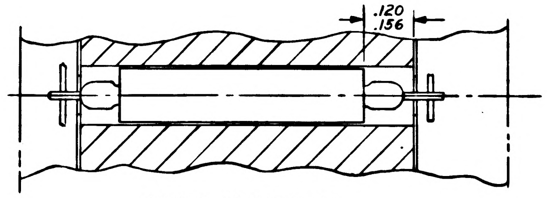
PARTIAL SECTION E-E
(SH 1 ZONE E-4)



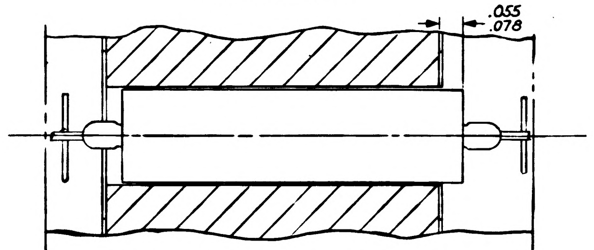
PARTIAL SECTION G-G
C5 ORIENTATION
SHEET 1 ZONE D-8



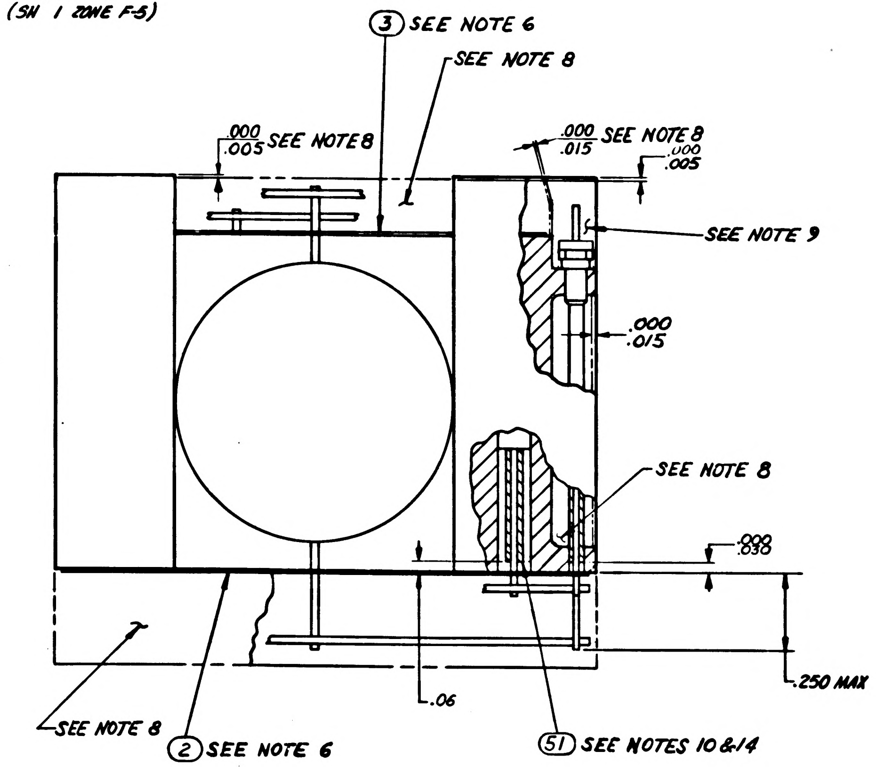
PARTIAL SECTION H-H
C7 & C8 ORIENTATION
SHEET 1 ZONE F-8



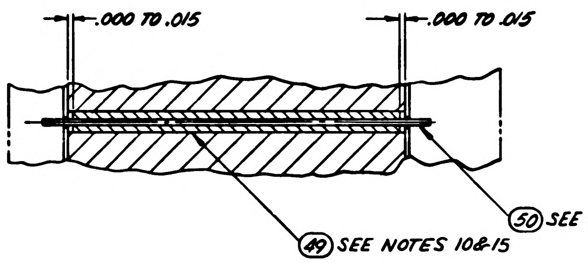
PARTIAL SECTION J-J
C9 & C10 ORIENTATION
SHEET 1 ZONE G-8



PARTIAL SECTION K-K
C6 ORIENTATION
SHEET 1 ZONE E-7


3 SEE NOTE 6
SEE NOTE 8
.000
.005 SEE NOTE 8
.000 SEE NOTE 8
.015
.000
.005
SEE NOTE 9
.000
.015
SEE NOTE 8
.000
.030
.250 MAX
.06
SEE NOTE 8
2 SEE NOTE 6
51 SEE NOTES 10&14

VIEW A-A
(SH 1 ZONE F-6)


.000 TO .015
.000 TO .015
50 SEE NOTE 10
49 SEE NOTES 10&15

PARTIAL SECTION F-F
(SH 1 ZONE E-7)

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

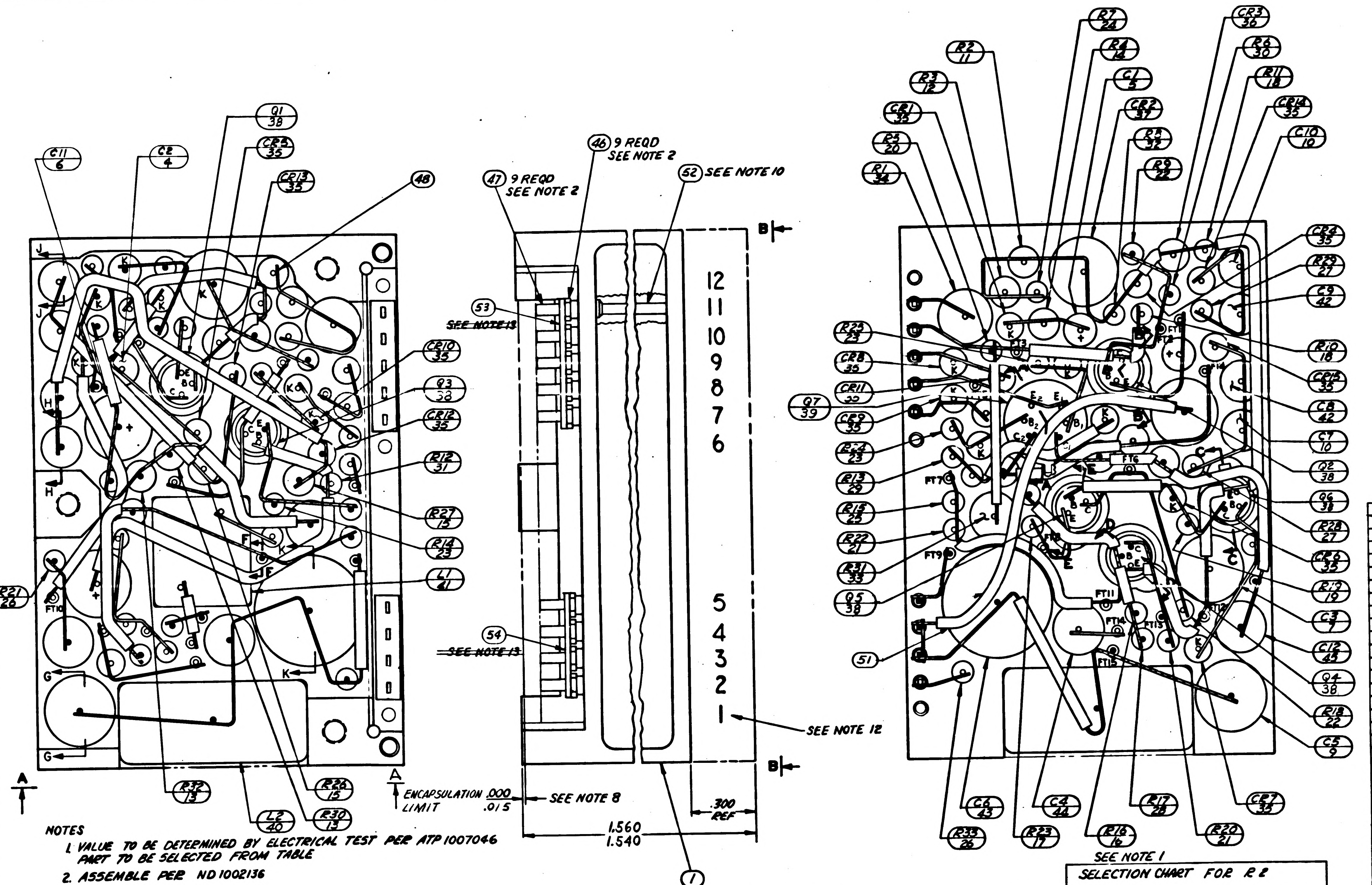
M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orzel 18 AUG 64
CHECKED A. Morvick 31 AUG 64
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AAC, FILTER AND MULTIVIBRATOR
800 CPS MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007546
SCALE 5:1
SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
		REVISIONS			
A		REVISED PER TDRR 17350		12 MAR 65	RJJ
B		REVISED PER TDRR 19405			
C		REVISED PER TDRR 19440			
D		REVISED PER TDRR 19512			
E		REVISED PER TDRR 20143			
F		REVISED PER TDRR 22938			



NOTES

1. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007046 PART TO BE SELECTED FROM TABLE
2. ASSEMBLE PER ND 1002136
3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.
5. COMPONENTS TO BE CENTRALIZED & CEMENTED IN PLACE PER ND 1002009 METHOD J.
6. ON ITEMS 2 & 3:
   BROKEN PATHS INDICATE INSULATION SLEEVING
   K INDICATES CATHODE SIDE OF DIODE
   FT ( ) INDICATES FEED THRU
   PLUS (+) INDICATES POSITIVE END OF CAPACITOR
   C: INDICATES COLLECTOR LEAD OF TRANSISTOR
   B: INDICATES BASE LEAD OF TRANSISTOR
   E: INDICATES EMITTER LEAD OF TRANSISTOR
   C_1 & C_2: INDICATES COLLECTOR OF MULTI STAGE TRANSISTOR
   B_1 & B_2: INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
   E_1 & E_2: INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR
7. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
8. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
9. AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. USE AS REQUIRED.
11. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
12. MARK PIN NUMBERS .060/.100 HIGH (WHITE) AND ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.

20. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

SEE NOTE 1

SELECTION CHART FOR C5	
PART NUMBER	VALUE uF
1010264-20	.039
-21	.047
-22	.056
-23	.068
-24	.082
-25	.100
-26	.120
-27	.150

SEE NOTE 1

SELECTION CHART FOR C7 & C10	
PART NUMBER	VALUE uF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
-6	.0027
-7	.0033
-8	.0039
-9	.0047

~~18. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~

19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

~~13. BOND ITEMS 33 AND 34 TO ITEM 46 PER ND 1002237.~~

14. TYPICAL SLEEVING FOR R5 THRU R25, R28, R29 & R33 FOR SECTIONS AND AUXILIARY VIEWS SEE SHEET 2.

15. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT15

16. PROCURE PER PS1007046

~~17. BOND [illegible] TO THE HEATSINK [illegible] SURFACE OF THE INSULATORS PER ND [illegible]~~

SEE NOTE 1

SELECTION CHART FOR R2			
PART NUMBER	VALUE Ω	PART NUMBER	VALUE Ω
1010364-401	6040	1010364-457	11,600
-403	6190	-459	12,100
-405	6340	-461	12,400
-407	6490	-463	12,700
-409	6650	-465	13,000
-411	6810	-467	13,300
-413	6980	-469	13,700
-415	7150	-471	14,000
-417	7320		
-419	7500		
-421	7680		
-423	7870		
-425	8060		
-427	8250		
-429	8450		
-431	8660		
-433	8870		
-435	9090		
-437	9310		
-439	9530		
-441	9760		
-443	10,000		
-445	10,200		
-447	10,500		
-449	10,700		
-451	11,000		
-453	11,300		
-455	11,500		

SEE NOTE 1 (items 9, 10, 11)

			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			X		REF	1010044	SCHEMATIC, ELECTRICAL
			1		54	1008540-4	GASKET, CONNECTOR MINIATURE
			1		53	1008540-5	GASKET, CONNECTOR MINIATURE
			AR		52	1006776-20	INSULATION SLEEVING, ELEC.
			AR		51	1006776-21	INSULATION SLEEVING, ELEC.
			AR		50	1006757-8	WIRE, ELECT .020 DIA
			AR		49	1006776-22	INSULATION SLEEVING, ELEC.
			AR		48	1006757-1	WIRE ELECT .010 × .020
			9		47	10067[illegible]-5	CONTACT, WRAPOST, MALE MIN
			9		46	1006775	INSULATOR, WRAPOST MALE MIN
			1		45	1010375-19	CAPACITOR, FIXED
			1		44	1010375-18	CAPACITOR, FIXED
			1		43	1010264-35	CAPACITOR, FIXED
			2		42	1010264-7	CAPACITOR, FIXED
			1		41	1010277-004	REACTOR
			1		40	1010427	REACTOR
			1		39	1010431	TRANSISTOR
			6		38	1010397-1	TRANSISTOR
			1		37	1010346-1	SEMICONDUCTOR DEVICE DIODE
			1		36	1010372-22	SEMICONDUCTOR DEVICE DIODE
			13		35	1010365	SEMICONDUCTOR DEVICE DIODE
			1		34	1010363-373	RESISTOR, FIXED
			1		33	1010389-49	RESISTOR, FIXED
			1		32	1010369-140	RESISTOR, FIXED
			1		31	1010369-95	RESISTOR, FIXED
			1		30	1010369-94	RESISTOR, FIXED
			1		29	1010369-88	RESISTOR, FIXED
			1		28	1006750-80	RESISTOR, FIXED
			2		27	1006750-76	RESISTOR, FIXED
			2		26	1006750-73	RESISTOR, FIXED
			1		25	1006750-72	RESISTOR, FIXED
			1		24	1006750-60	RESISTOR, FIXED
			3		23	1006750-56	RESISTOR, FIXED
			2		22	1006750-52	RESISTOR, FIXED
			2		21	1006750-48	RESISTOR, FIXED
			1		20	1006750-43	RESISTOR, FIXED
			1		19	1006750-42	RESISTOR, FIXED
			2		18	1006750-40	RESISTOR, FIXED
			1		17	1006750-39	RESISTOR, FIXED
			1		16	1006750-32	RESISTOR, FIXED
			2		15	1010364-693	RESISTOR, FIXED
			1		14	1010364-465	RESISTOR, FIXED
			2		13	1010364-351	RESISTOR, FIXED
			1		12	1010364-387	RESISTOR, FIXED
			1		11	1010364	RESISTOR, FIXED
			2		10	1010264	CAPACITOR, FIXED
			1		9	1010264	CAPACITOR, FIXED
			6		8	1008025-1	INSULATOR, BUSHING
			1		7	1006755-85	CAPACITOR, FIXED
			1		6	1006755-81	CAPACITOR, FIXED
			1		5	1006755-69	CAPACITOR, FIXED
			1		4	1006755-61	CAPACITOR, FIXED
			1		3	1015716	INSULATOR
			1		2	1015715	INSULATOR
			1		1	1015714	HEATSINK
QUANTITY REQUIRED						LIST OF PARTS AND MATERIALS	

NEXT ASSY	USED ON	APPLICATION	APPLICABLE DASH NO.
1007456			
1007572			
1007576			

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS .XX ± .02 .XXX ± .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Oegel 18 AUG 64
CHECKED A. Ulrich 31 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL 6 Oct 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

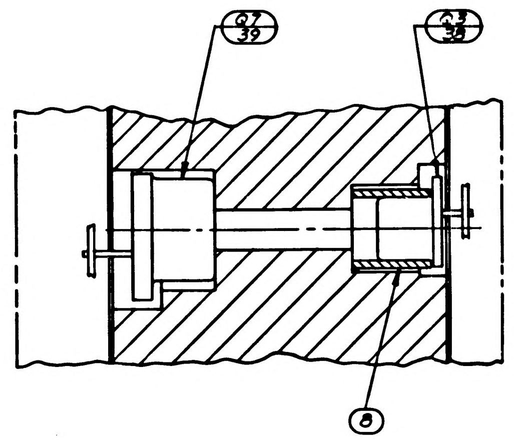
AAC, FILTER & MULTIVIBRATOR
800 CPS MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007546
SCALE 5:1
SHEET 1 OF 2

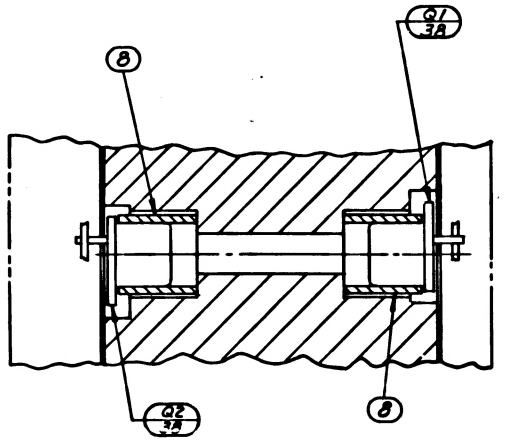
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17350		12 MAR 65	RJS
B		REVISED PER TDRR 19405		[illegible]	[illegible]
C		REVISED PER TDRR 19440		[illegible]	[illegible]
D		REVISED PER TDRR 9512		[illegible]	[illegible]
E		REVISION STATUS CHANGED		[illegible]	[illegible]
F		REVISED PER TDRR 22938		[illegible]	[illegible]

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE



PARTIAL SECTION A-A
(SH 1 ZONE F-4)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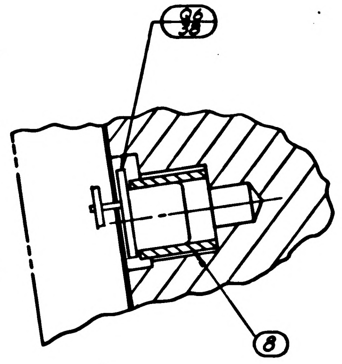
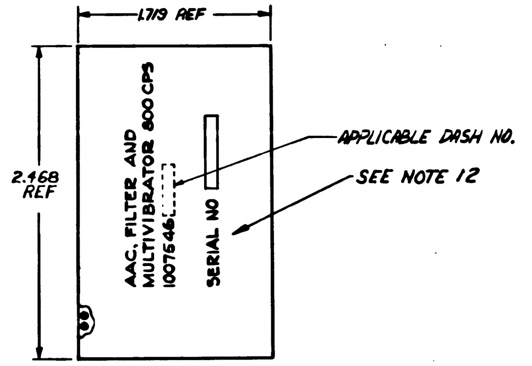
Q1
38
Q2
38
8

PARTIAL SECTION B-B
(SH 1 ZONE F-3)



PARTIAL SECTION C-C
(SH 1 ZONE E-3)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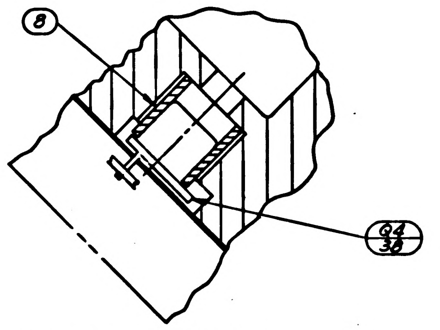
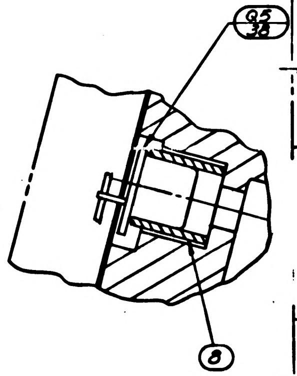
2.468 REF
AAC, FILTER AND MULTIVIBRATOR 800 CPS
1007546-
SERIAL NO
APPLICABLE DASH NO.
SEE NOTE 12

VIEW B-B
SCALE 2:1
(SH 1 ZONE F-5)



PARTIAL SECTION D-D
(SH 1 ZONE E3)



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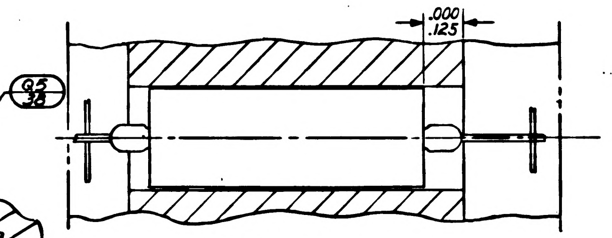
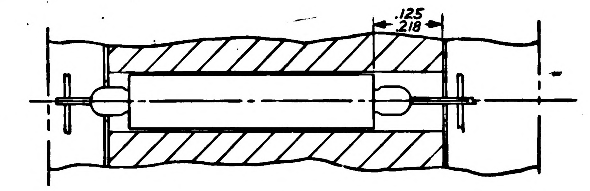
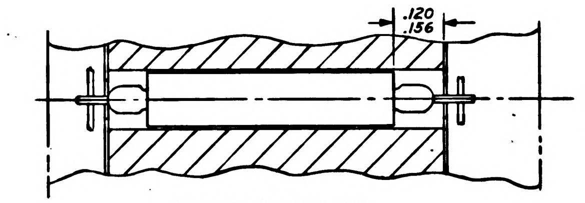
(SH 1 ZONE E-4)



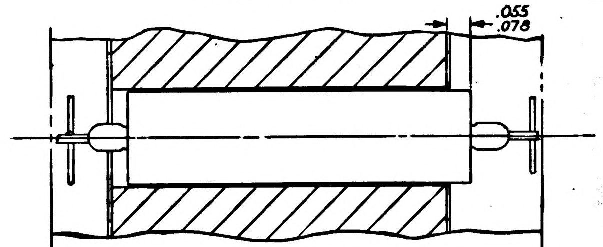
PARTIAL SECTION G-G
C5 ORIENTATION
SHEET 1 ZONE D-8



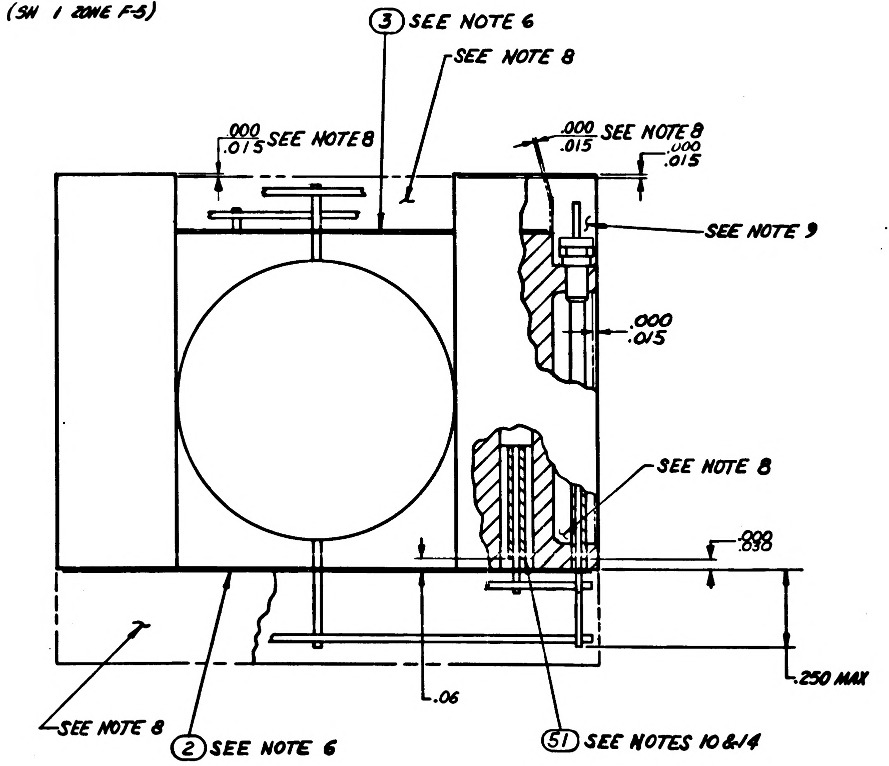
PARTIAL SECTION H-H
C7 & C8 ORIENTATION
SHEET 1 ZONE F-8



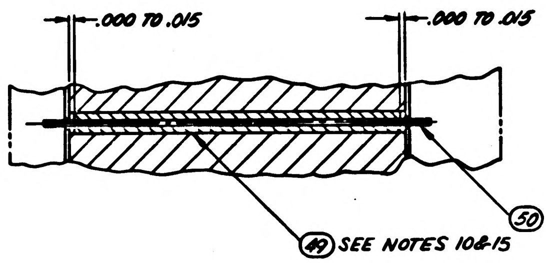
PARTIAL SECTION J-J
C9 & C10 ORIENTATION
SHEET 1 ZONE G-8



PARTIAL SECTION K-K
C6 ORIENTATION
SHEET 1 ZONE E-7


③ SEE NOTE 6
SEE NOTE 8
.000
.015 SEE NOTE 8
.000
.015 SEE NOTE 8
.000
.015
SEE NOTE 9
.000
.015
SEE NOTE 8
.000
.030
.250 MAX
.06
SEE NOTE 8
② SEE NOTE 6
(51) SEE NOTES 10 & 14

VIEW A-A
(SH 1 ZONE F-6)


.000 TO .015
.000 TO .015
(49) SEE NOTES 10 & 15
㊿ SEE NOTE 10

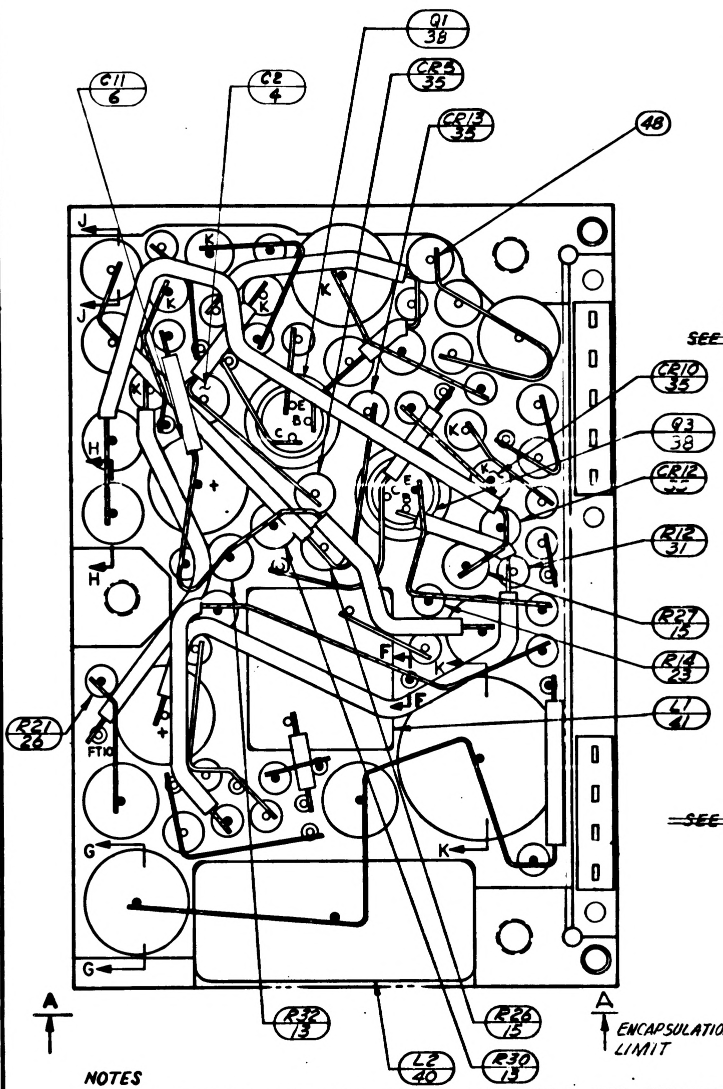
PARTIAL SECTION F-F
(SH 1 ZONE E-7)

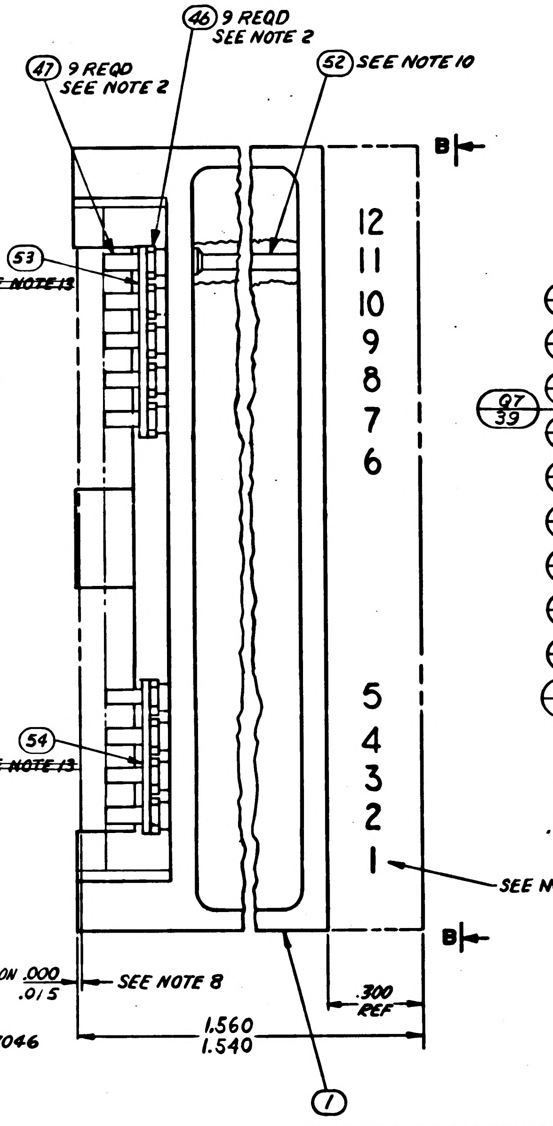
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ±	M I T INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN Vogel 18 AUG 64 DATE CHECKED A. Morrick 31 AUG 64 APPROVAL [illegible] APPROVAL [illegible] 10-5-64	AAC, FILTER AND MULTIVIBRATOR 800 CPS MODULE ASSY
MATERIAL —	NASA APPROVAL [illegible]	CODE IDENT NO. 80230 SIZE E 1007546
CONTRACT NAS 9-497	MIT APPROVAL [illegible]	SCALE 5:1 SHEET 2 OF 2

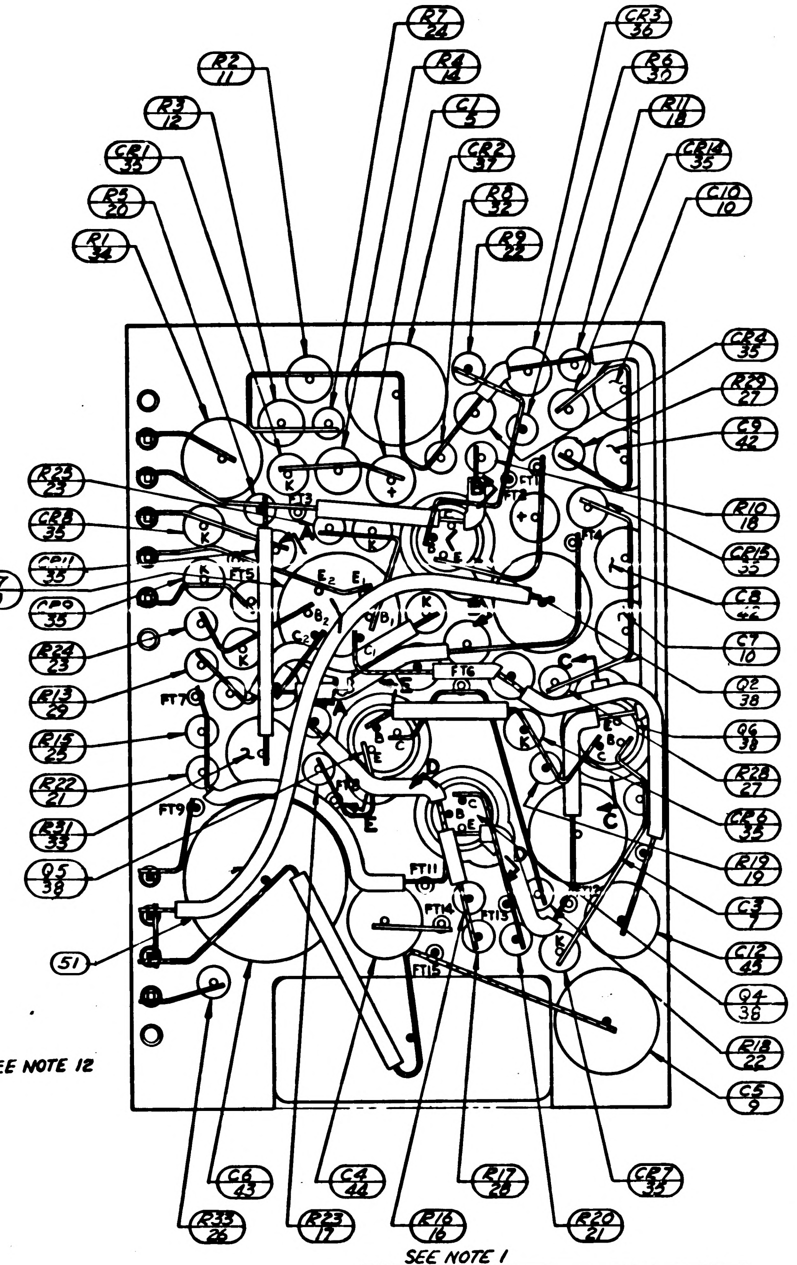
1007546 F

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17350		12 MAR 65	EJJ
B		REVISED PER TDRR 19405			
C		REVISED PER TDRR 9443			
D		REVISED PER TDRR 9512			
E		REVISED PER TDRR 20143			
F		REVISED PER TDRR 22938			
G		REVISED PER TDRR 23888			

REVISIONS







NOTES

1. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007046 PART TO BE SELECTED FROM TABLE
2. ASSEMBLE PER ND 1002136
3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.
5. COMPONENTS TO BE CENTRALIZED & CEMENTED IN PLACE PER ND 1002009 METHOD J.
6. ON ITEMS 2 & 3:
   - BROKEN PATHS INDICATE INSULATION SLEEVING
   - K INDICATES CATHODE SIDE OF DIODE
   - FT ( ) INDICATES FEED THRU
   - PLUS (+) INDICATES POSITIVE END OF CAPACITOR
   - C: INDICATES COLLECTOR LEAD OF TRANSISTOR
   - B: INDICATES BASE LEAD OF TRANSISTOR
   - E: INDICATES EMITTER LEAD OF TRANSISTOR
   - C_1 & C_2: INDICATES COLLECTOR OF MULTI STAGE TRANSISTOR
   - B_1 & B_2: INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
   - E_1 & E_2: INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR
7. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
8. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
9. AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. USE AS REQUIRED.
11. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
12. MARK PIN NUMBERS .060/.100 HIGH (WHITE) AND ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.

20. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.

SEE NOTE 1

SELECTION CHART FOR C5

PART NUMBER	VALUE UF
1010264-20	.039
-21	.047
-22	.056
-23	.068
-24	.082
-25	.100
-26	.120
-27	.150

SEE NOTE 1

SELECTION CHART FOR C7 & C10

PART NUMBER	VALUE UF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
-6	.0027
-7	.0033
-8	.0039
-9	.0047

~~18. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~

19. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.

~~13. BOND ITEMS 53 AND 54 TO ITEM 46 PER ND 1002237.~~

14. TYPICAL SLEEVING FOR R5 THRU R25, R28, R29 & R33 FOR SECTIONS AND AUXILIARY VIEWS SEE SHEET 2.
15. TYPICAL ~~SLEEVING AND~~ WIRE FOR FT1 THRU FT15
16. PROCURE PER PS 1007046

~~17. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE II.~~

SEE NOTE 1

SELECTION CHART FOR R2

PART NUMBER	VALUE Ω	PART NUMBER	VALUE Ω
1010364-401	6040	1010364-457	11,800
-403	6190	-459	12,100
-405	6340	-461	12,400
-407	6490	-463	12,700
-409	6650	-465	13,000
-411	6810	-467	13,300
-413	6980	-469	13,700
-415	7150	-471	14,000
-417	7320		
-419	7500		
-421	7680		
-423	7870		
-425	8060		
-427	8250		
-429	8450		
-431	8660		
-433	8870		
-435	9090		
-437	9310		
-439	9530		
-441	9760		
-443	10,000		
-445	10,200		
-447	10,500		
-449	10,700		
-451	11,000		
-453	11,300		
-455	11,500		

SEE NOTE 1 (items 9, 10, 11)

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
X		REF	1010044	SCHEMATIC, ELECTRICAL
AR		55	1010848-2	WIRE, ELECTRICAL-NICKEL
1		54	1008540-4	GASKET, CONNECTOR MINIATURE
1		53	1008540-5	GASKET, CONNECTOR MINIATURE
AR		52	1006776-20	INSULATION SLEEVING, ELEC.
AR		51	1006776-21	INSULATION SLEEVING, ELEC.
~~AR~~		50	~~1006757-3~~	~~WIRE, ELECT .020 DIA~~
~~AR~~		49	~~1006776-22~~	~~INSULATION SLEEVING, ELEC.~~
AR		48	1006757-1	WIRE ELECT .010×.020
9		47	1006782-5	CONTACT, WRAPOST MALE MIN
9		46	1006775	INSULATOR, WRAPOST MALE MIN
1		45	1010375-19	CAPACITOR, FIXED
1		44	1010375-15	CAPACITOR, FIXED
1		43	1010264-35	CAPACITOR, FIXED
2		42	1010264-7	CAPACITOR, FIXED
1		41	1010277-004	REACTOR
1		40	1010427	REACTOR
1		39	1010431	TRANSISTOR
6		38	1010397-1	TRANSISTOR
1		37	1010346-1	SEMICONDUCTOR DEVICE DIODE
1		36	1010372-22	SEMICONDUCTOR DEVICE DIODE
13		35	1010385	SEMICONDUCTOR DEVICE DIODE
1		34	1010363-373	RESISTOR, FIXED
1		33	1010389-49	RESISTOR, FIXED
1		32	1010369-140	RESISTOR, FIXED
1		31	1010369-95	RESISTOR, FIXED
1		30	1010369-94	RESISTOR, FIXED
1		29	1010369-88	RESISTOR, FIXED
1		28	1006750-80	RESISTOR, FIXED
2		27	1006750-76	RESISTOR, FIXED
2		26	1006750-73	RESISTOR, FIXED
1		25	1006750-72	RESISTOR, FIXED
1		24	1006750-60	RESISTOR, FIXED
3		23	1006750-56	RESISTOR, FIXED
2		22	1006750-52	RESISTOR, FIXED
2		21	1006750-48	RESISTOR, FIXED
1		20	1006750-43	RESISTOR, FIXED
1		19	1006750-42	RESISTOR, FIXED
2		18	1006750-40	RESISTOR, FIXED
1		17	1006750-39	RESISTOR, FIXED
1		16	1006750-32	RESISTOR, FIXED
2		15	1010364-693	RESISTOR, FIXED
1		14	1010364-465	RESISTOR, FIXED
2		13	1010364-351	RESISTOR, FIXED
1		12	1010364-387	RESISTOR, FIXED
1		11	1010364	RESISTOR, FIXED
2		10	1010264	CAPACITOR, FIXED
1		9	1010264	CAPACITOR, FIXED
6		8	1008025-1	INSULATOR, BUSHING
1		7	1006755-85	CAPACITOR, FIXED
1		6	1006755-81	CAPACITOR, FIXED
1		5	1006755-69	CAPACITOR, FIXED
1		4	1006755-61	CAPACITOR, FIXED
1		3	1015716	INSULATOR
1		2	1015715	INSULATOR
1		1	1015714	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007456		
1007572		
1007576		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + - DECIMALS .XX±.02 .XXX±.005 ANGLES + -
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Oegal 18 AUG 64
CHECKED 31 AUG 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL 10-6-64
MIT APPROVAL 6 Oct 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AAC, FILTER & MULTIVIBRATOR
800 CPS MODULE ASSY

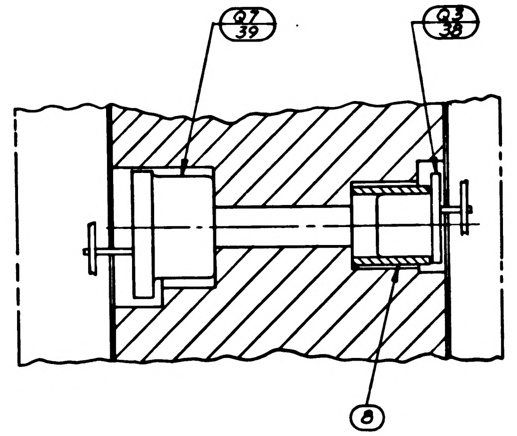
CODE IDENT NO. 80230
SIZE E
1007546
SCALE 5:1
SHEET 1 OF 2

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 17350		12 MAR 65	RJS EF
B		REVISED PER TDRR 19405		[illegible]	[illegible]
C		REVISED PER TDRR 19440		[illegible]	[illegible]
D		REVISED PER TDRR 9512		[illegible]	[illegible]
E		REVISION STATUS CHANGED		[illegible]	[illegible]
F		REVISED PER TDRR 2[illegible]		[illegible]	[illegible]
G		REVISED PER TDRR 23[illegible]		[illegible]	[illegible]

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER AND FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE



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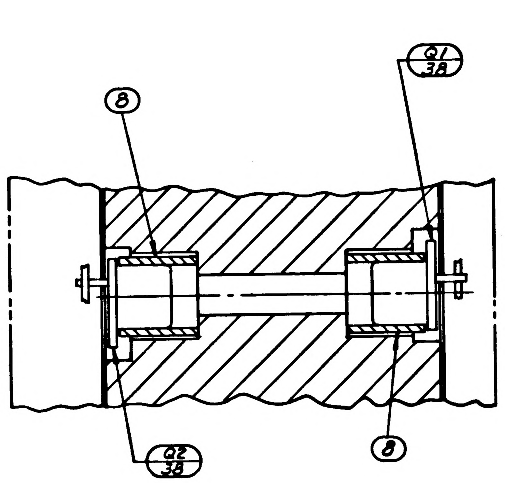
(SH 1 ZONE F-4)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38
Q2
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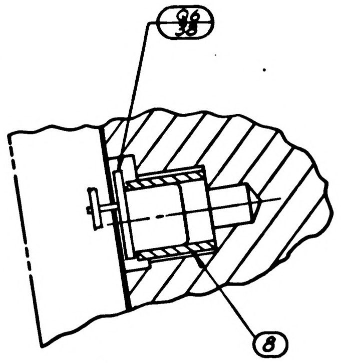
(SH 1 ZONE F-3)



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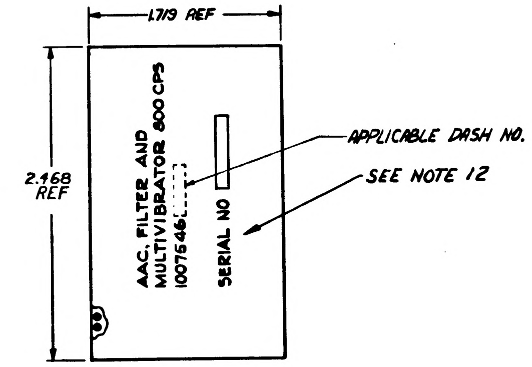
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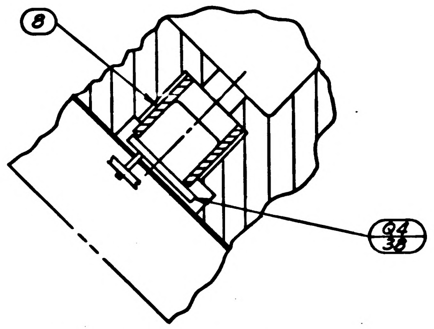
2.468
REF
AAC. FILTER AND
MULTIVIBRATOR 800 CPS
1007546[ ]
SERIAL NO
APPLICABLE DASH NO.
SEE NOTE 12
66

VIEW B-B
SCALE 2:1
(SH 1 ZONE F-5)



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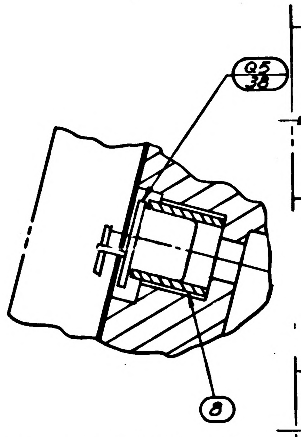

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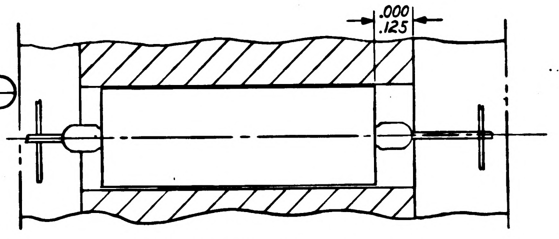
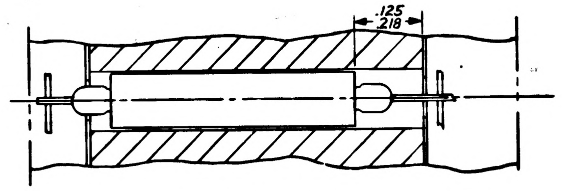
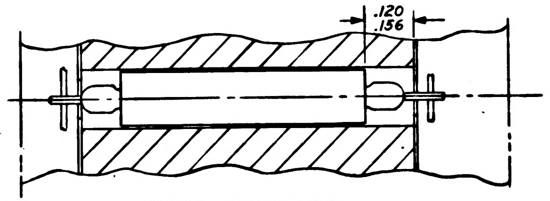
(SH 1 ZONE E-4)



PARTIAL SECTION G-G
C5 ORIENTATION
SHEET 1 ZONE D-8



PARTIAL SECTION H-H
C7 & C8 ORIENTATION
SHEET 1 ZONE F-8



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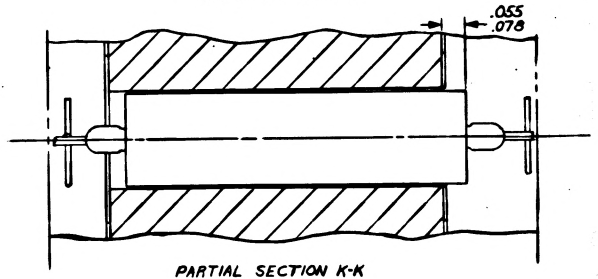
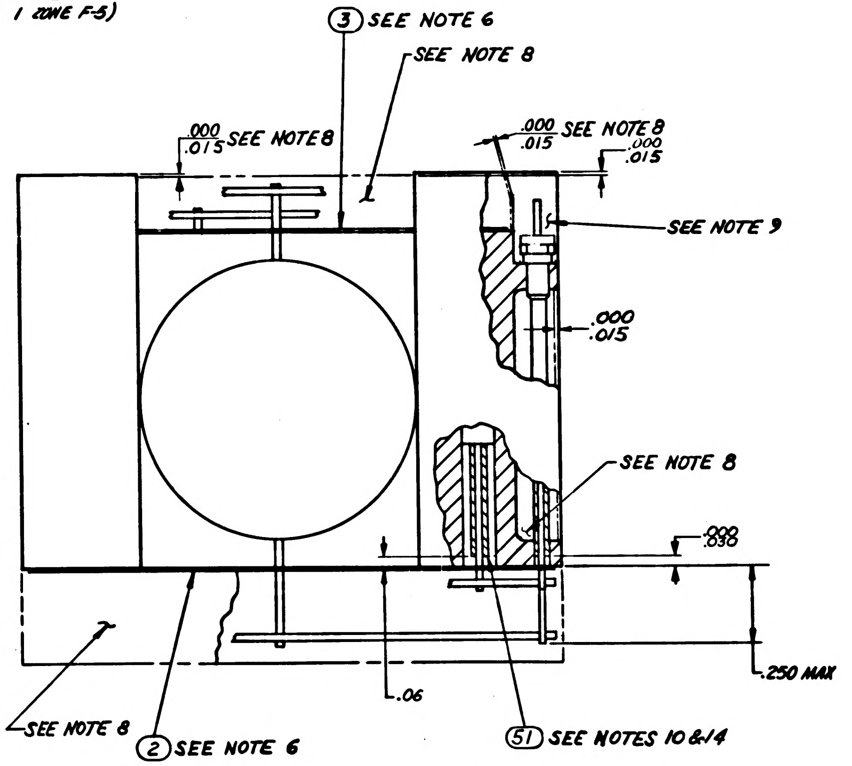
C9 & C10 ORIENTATION
SHEET 1 ZONE G-8



PARTIAL SECTION K-K
C6 ORIENTATION
SHEET 1 ZONE E-7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SEE NOTE 8
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SEE NOTE 9
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SEE NOTE 8
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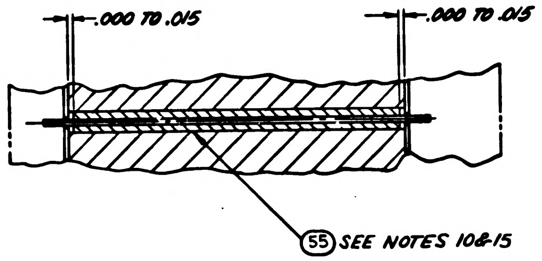
.250 MAX
.06
SEE NOTE 8
2 SEE NOTE 6
51 SEE NOTES 10 & 14

VIEW A-A
(SH 1 ZONE F-6)


.000 TO .015
.000 TO .015
55 SEE NOTES 10 & 15

PARTIAL SECTION F-F
(SH 1 ZONE E-7)

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

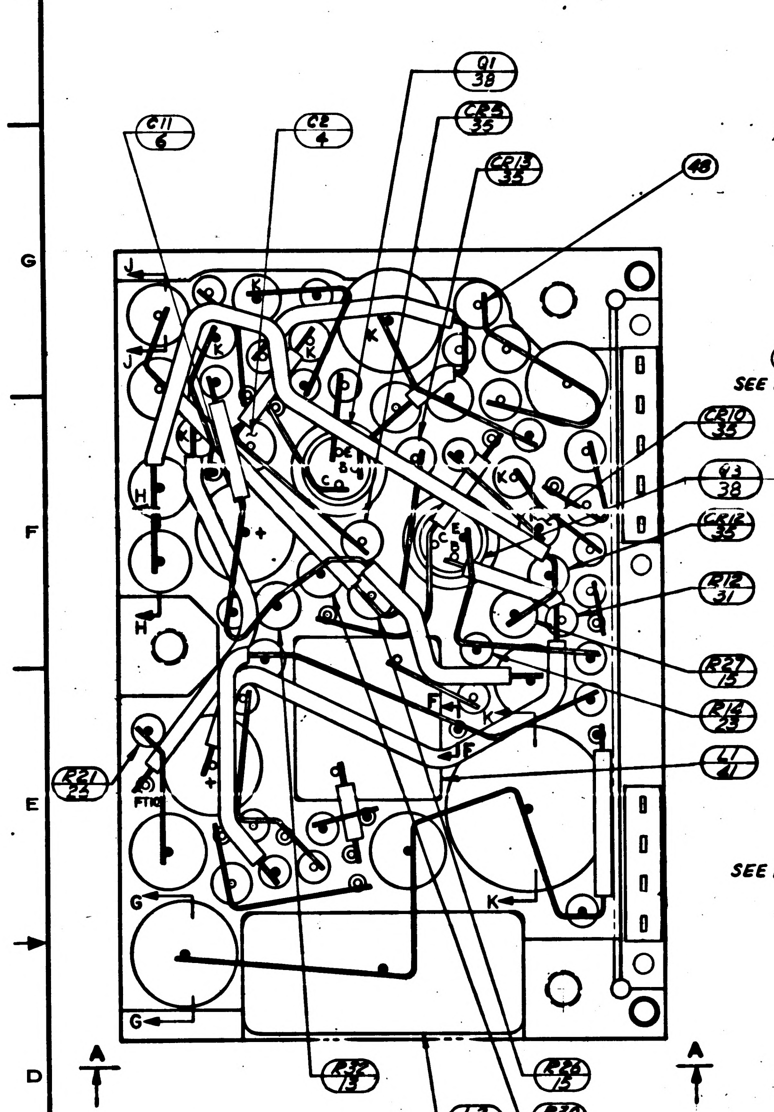
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Ozgel 18 AUG 64
CHECKED A. Marvich 31 AUG 64
APPROVAL [illegible]
APPROVAL [illegible] 10-5-64
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AAC, FILTER AND MULTIVIBRATOR
800 CPS MODULE ASSY

CODE IDENT NO. 80230
SIZE E
1007546
SCALE 5:1
SHEET 2 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.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CR13
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Q3
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CR12
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R27
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R14
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L2
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R26
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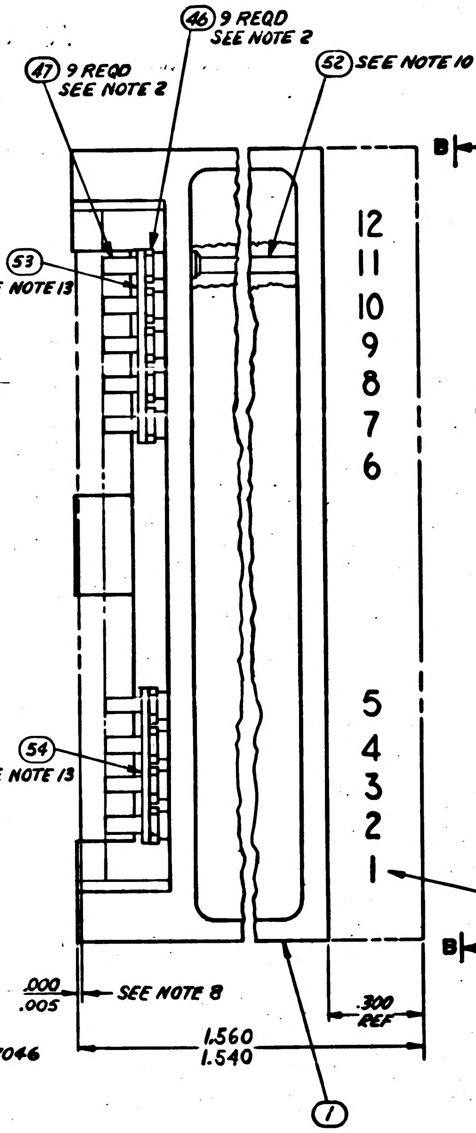
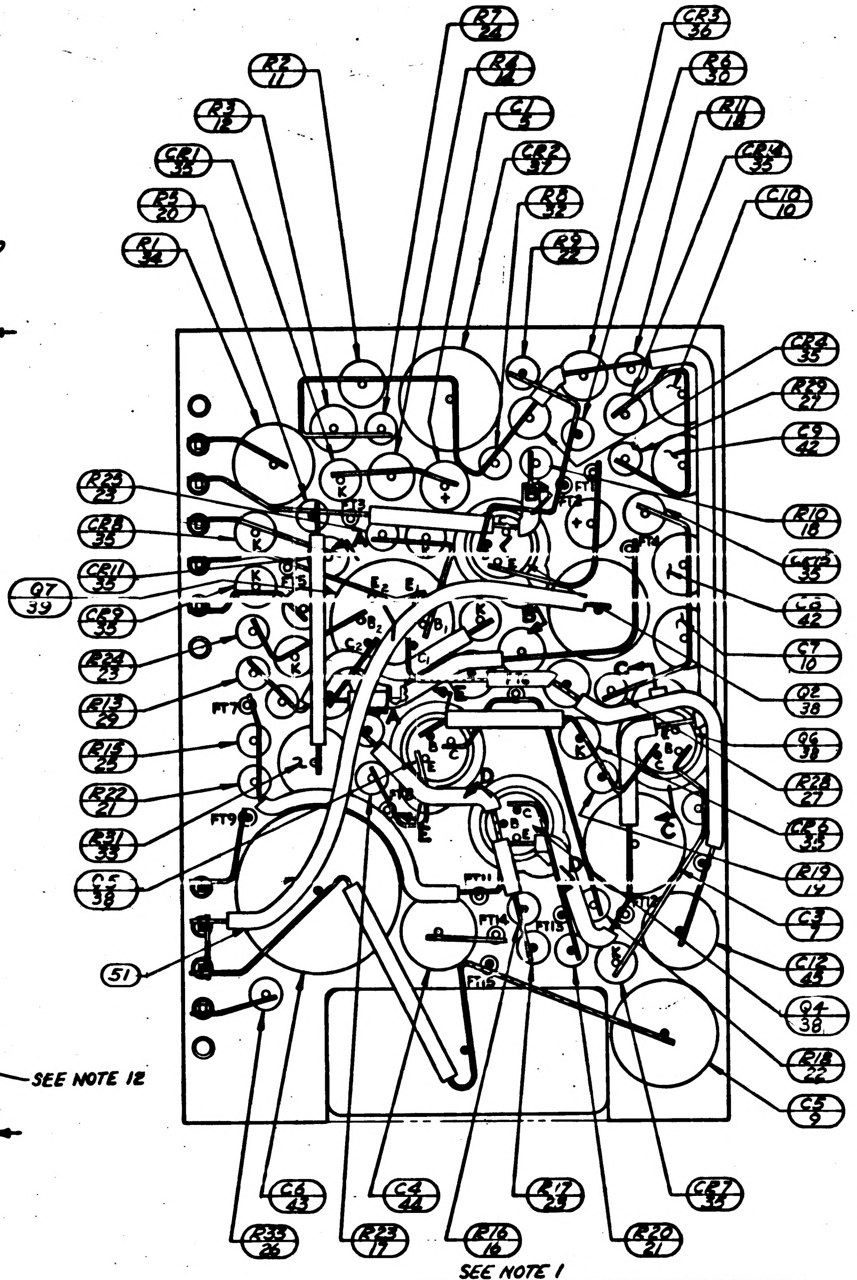
R30
13
J
K
H
F
E
G
FT10
A
A


47 9 REQD
SEE NOTE 2
46 9 REQD
SEE NOTE 2
52 SEE NOTE 10
53
SEE NOTE 13
54
SEE NOTE 13
12
11
10
9
8
7
6
5
4
3
2
1
SEE NOTE 12
B
B
.000
.005
SEE NOTE 8
1.560
1.540
.300
REF
1


R2
11
R7
24
CR3
36
R4
24
R6
30
R3
12
C1
5
R11
18
CR1
35
CR2
37
CR14
35
R5
20
R8
32
C10
10
R9
22
R1
34
CR4
35
R29
27
C9
42
R22
23
R10
18
CR8
35
CR5
35
Q7
39
CR11
35
C8
42
CR9
35
C7
10
R24
23
Q2
38
R13
29
Q6
38
R15
25
R28
27
R22
21
CR6
35
R31
33
R19
14
C6
38
C3
7
51
C12
45
Q4
38
R18
22
C5
9
C2
43
C4
44
R17
23
CR7
35
R33
26
R23
17
R16
16
R20
21
FT7
FT9
FT11
FT14
FT15

NOTES

1. VALUE TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007046 PART TO BE SELECTED FROM TABLE
2. ASSEMBLE PER ND 1002136
3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4. ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.
5. COMPONENTS TO BE CENTRALIZED & CEMENTED IN PLACE PER ND 1002009 METHOD C
6. ON ITEMS 2 & 3:
   BROKEN PATHS INDICATE INSULATION SLEEVING
   K INDICATES CATHODE SIDE OF DIODE
   FT ( ) INDICATES FEED THRU
   PLUS (+) INDICATES POSITIVE END OF CAPACITOR
   C: INDICATES COLLECTOR LEAD OF TRANSISTOR
   B: INDICATES BASE LEAD OF TRANSISTOR
   E: INDICATES EMITTER LEAD OF TRANSISTOR
   C_1 & C_2: INDICATES COLLECTOR OF MULTI STAGE TRANSISTOR
   B_1 & B_2: INDICATES BASE LEAD OF MULTI STAGE TRANSISTOR
   E_1 & E_2: INDICATES EMITTER LEAD OF MULTI STAGE TRANSISTOR
7. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
8. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
9. AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. USE AS REQUIRED.
11. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
12. MARK PIN NUMBERS .060/.100 HIGH (WHITE) AND ALL OTHER CHARACTERS .100/.140 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
13. BOND ITEMS 53 AND 54 TO ITEM 46 PER ND 1002237.
14. TYPICAL SLEEVING FOR R5 THRU R25, R28, R29 & R33 FOR SECTIONS AND AUXILIARY VIEWS SEE SHEET 2.
15. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT15
16. PROCURE PER PS 1007046

SEE NOTE 1

SELECTION CHART FOR C5

PART NUMBER	VALUE uF
1010264-20	.039
-21	.047
-22	.056
-23	.068
-24	.082
-25	.100
-26	.120
-27	.150

SEE NOTE 1

SELECTION CHART FOR C7 & C10

PART NUMBER	VALUE uF
1010264-1	.0010
-2	.0012
-3	.0015
-4	.0018
-5	.0022
-6	.0027
-7	.0033
-8	.0039
-9	.0047

SEE NOTE 1

SELECTION CHART FOR R2

PART NUMBER	VALUE Ω	PART NUMBER	VALUE Ω
1010364-401	6040	1010364-457	11,800
-403	6190	-459	12,100
-405	6340	-461	12,400
-407	6490	-463	12,700
-409	6650	-465	13,000
-411	6810	-467	13,300
-413	6980	-469	13,700
-415	7150	-471	14,000
-417	7320		
-419	7500		
-421	7680		
-423	7870		
-425	8060		
-427	8250		
-429	8450		
-431	8660		
-433	8870		
-435	9090		
-437	9310		
-439	9530		
-441	9760		
-443	10,000		
-445	10,200		
-447	10,500		
-449	10,700		
-451	11,000		
-453	11,300		
-455	11,500		

LIST OF PARTS AND MATERIALS

(SEE NOTE 1: items 9 through 12)

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
X		REF	1010044	SCHEMATIC, ELECTRICAL
1		54	1008540-4	GASKET, CONNECTOR MINIATURE
1		53	1008540-5	GASKET, CONNECTOR MINIATURE
AR		52	1006776-20	INSULATION SLEEVING, ELEC.
AR		51	1006776-21	INSULATION SLEEVING, ELEC.
AR		50	1006757-8	WIRE, ELECT .020 DIA
AR		49	1006776-22	INSULATION SLEEVING, ELEC.
AR		48	1006757-1	WIRE ELECT .010 × .020
9		47	1006782-5	CONTACT, WRAPOST MALE MIN
9		46	1006775	INSULATOR, WRAPOST MALE MIN
1		45	1010375-19	CAPACITOR, FIXED
1		44	1010375-18	CAPACITOR, FIXED
1		43	1010264-35	CAPACITOR, FIXED
2		42	1010264-7	CAPACITOR, FIXED
1		41	1010277-004	REACTOR
1		40	1010427	REACTOR
1		39	1010431	TRANSISTOR
6		38	1010397-1	TRANSISTOR
1		37	1010346-1	SEMICONDUCTOR DEVICE DIODE
1		36	1010372-22	SEMICONDUCTOR DEVICE DIODE
13		35	[illegible]	SEMICONDUCTOR DEVICE DIODE
1		34	1010363-373	RESISTOR, FIXED
1		33	1010389-49	RESISTOR, FIXED
1		32	1010369-140	RESISTOR, FIXED
1		31	1010369-95	RESISTOR, FIXED
1		30	1010369-94	RESISTOR, FIXED
1		29	1010369-88	RESISTOR, FIXED
1		28	1006750-80	RESISTOR, FIXED
2		27	1006750-76	RESISTOR, FIXED
2		26	1006750-73	RESISTOR, FIXED
1		25	1006750-72	RESISTOR, FIXED
1		24	1006750-60	RESISTOR, FIXED
3		23	1006750-56	RESISTOR, FIXED
2		22	1006750-52	RESISTOR, FIXED
2		21	1006750-48	RESISTOR, FIXED
1		20	1006750-43	RESISTOR, FIXED
1		19	1006750-42	RESISTOR, FIXED
2		18	1006750-40	RESISTOR, FIXED
1		17	1006750-39	RESISTOR, FIXED
1		16	1006750-32	RESISTOR, FIXED
2		15	1010364-693	RESISTOR, FIXED
1		14	1010364-465	RESISTOR, FIXED
2		13	1010364-351	RESISTOR, FIXED
1		12	1010364-387	RESISTOR, FIXED
1		11	1010364	RESISTOR, FIXED
2		10	1010264	CAPACITOR, FIXED
1		9	1010264	CAPACITOR, FIXED
6		8	1008025-1	INSULATOR, BUSHING
1		7	1006755-85	CAPACITOR, FIXED
1		6	1006755-81	CAPACITOR, FIXED
1		5	1006755-69	CAPACITOR, FIXED
1		4	1006755-61	CAPACITOR, FIXED
1		3	1015716	INSULATOR
1		2	1015715	INSULATOR
1		1	1015714	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007456		
1007572		
1007576		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± .XX ± .02 ±
.XXX ± .005
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Chapel DATE 18 AUG 64
CHECKED A. Ulrich 31 Aug 64
APPROVAL
APPROVAL 10-5-64
NASA APPROVAL W. G. Rhine 10-6-64
MIT APPROVAL 6 Oct 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

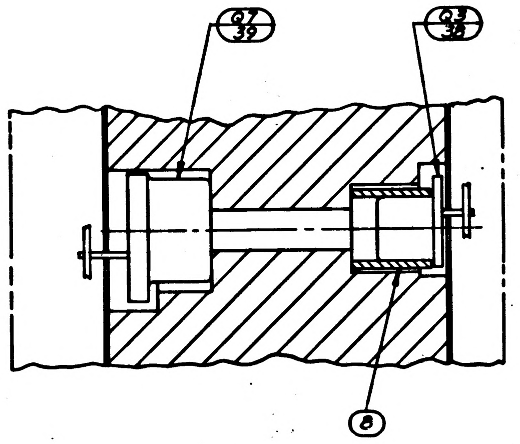
AAC, FILTER & MULTIVIBRATOR 800 CPS MODULE ASSY

CODE IDENT NO.
SIZE E
1007546
SCALE 5:1
SHEET 1 OF 2

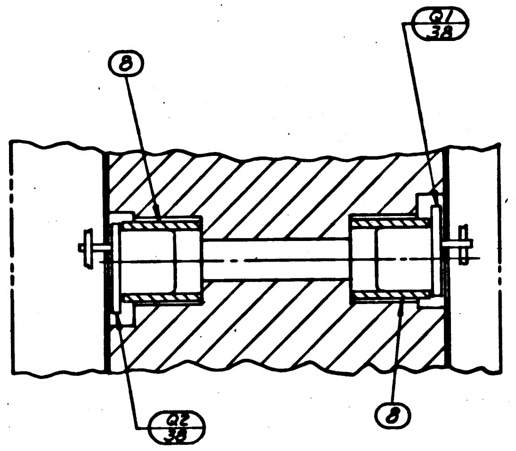
1007546

1007546

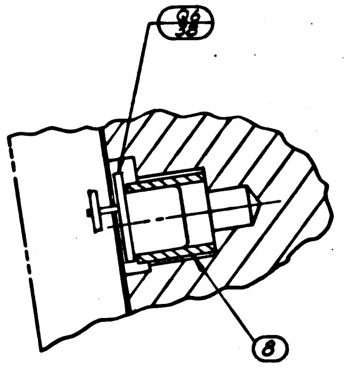
SYM	ZONE	REVISIONS DESCRIPTION	CHG NO.	DATE	APPD.



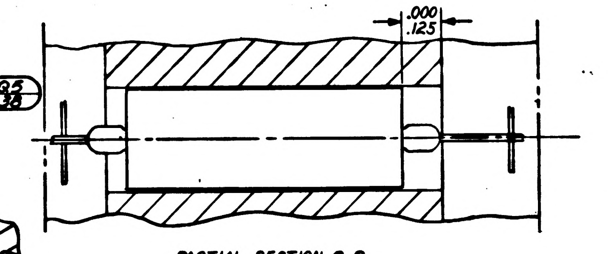
PARTIAL SECTION A-A
(SH 1 ZONE F-4)


8
Q1
38
Q2
38
8

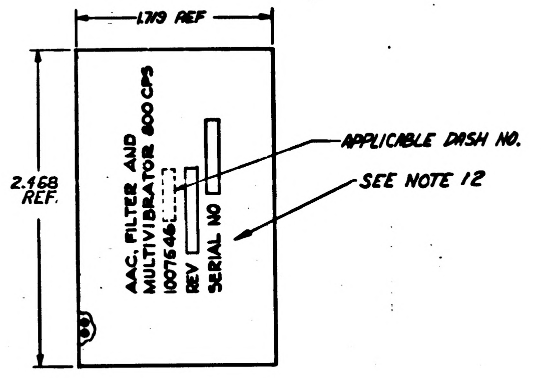
PARTIAL SECTION B-B
(SH 1 ZONE F-3)



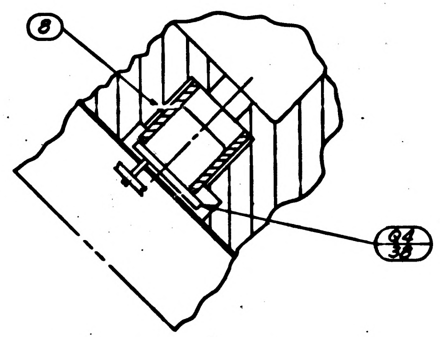
PARTIAL SECTION C-C
(SH 1 ZONE E-3)



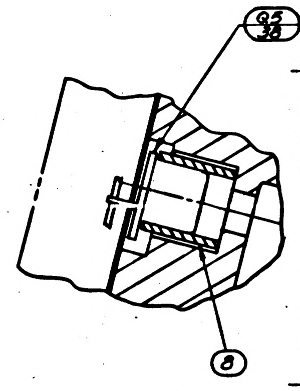
PARTIAL SECTION G-G
C5 ORIENTATION
SHEET 1 ZONE D-8


1.79 REF
2.468 REF.
AAC FILTER AND MULTIVIBRATOR 800 CPS
1007546-
REV
SERIAL NO
APPLICABLE DASH NO.
SEE NOTE 12

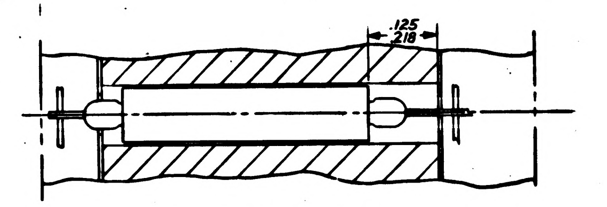
VIEW B-B
SCALE 2:1
(SH 1 ZONE F-5)



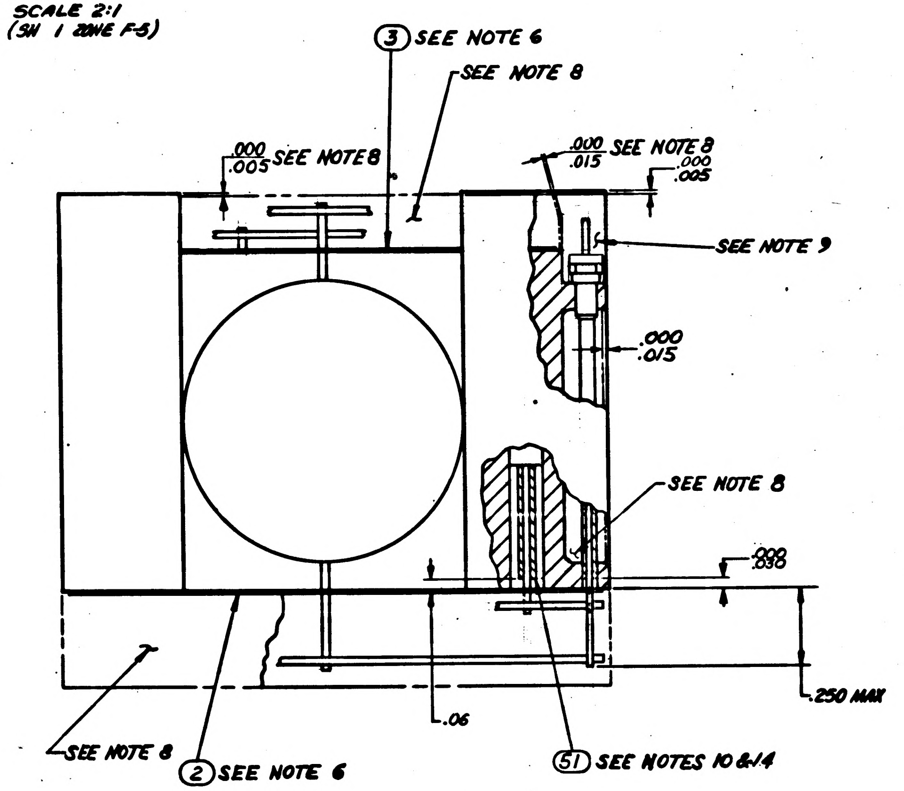
PARTIAL SECTION D-D
(SH 1 ZONE E3)



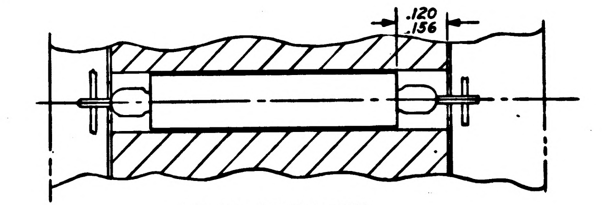
PARTIAL SECTION E-E
(SH 1 ZONE E-4)



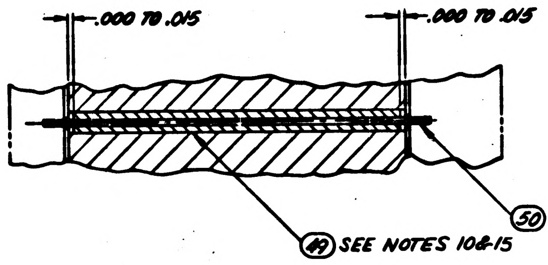
PARTIAL SECTION H-H
C7 & C8 ORIENTATION
SHEET 1 ZONE F-8


3 SEE NOTE 6
SEE NOTE 8
.000
.005 SEE NOTE 8
.000 SEE NOTE 8
.015
.000
.005
SEE NOTE 9
.000
.015
SEE NOTE 8
.000
.030
.250 MAX
.06
SEE NOTE 8
2 SEE NOTE 6
51 SEE NOTES 10 & 14

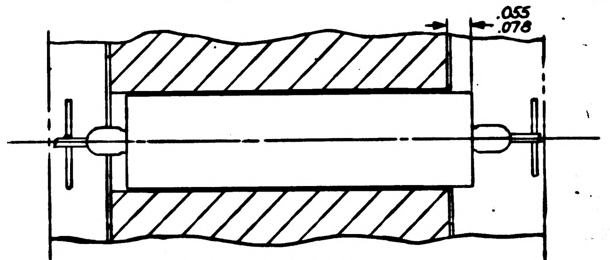
VIEW A-A
(SH 1 ZONE F-6)



PARTIAL SECTION J-J
C9 & C10 ORIENTATION
SHEET 1 ZONE G-8


.000 TO .015
.000 TO .015
50 SEE NOTE 10
49 SEE NOTES 10 & 15

PARTIAL SECTION F-F
(SH 1 ZONE E-7)



PARTIAL SECTION K-K
C6 ORIENTATION
SHEET 1 ZONE E-7

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	ACSP PN	
DO NOT SCALE THIS DRAWING	DRAWN Vogel DATE 18 AUG 64 CHECKED O. Mrazek 31 AUG 64 APPROVAL [illegible] APPROVAL D. G. Best 10-5-64	AAC, FILTER AND MULTIVIBRATOR 800 CPS MODULE ASSY
MATERIAL —	NASA APPROVAL W. J. Rhine 10-[illegible]-64	CODE IDENT NO. SIZE E 1007546
CONTRACT NAS 9-497	MIT APPROVAL [illegible]	SCALE 5:1 SHEET 2 OF 2

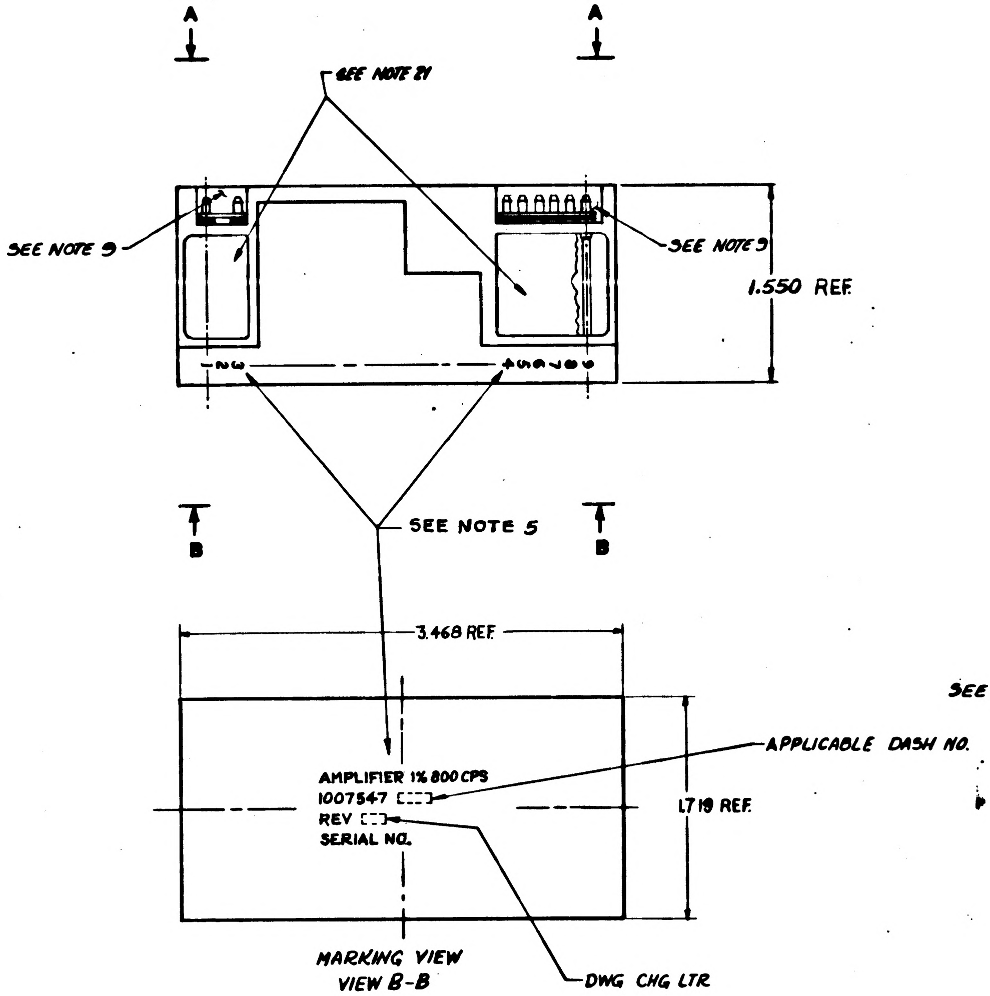
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 15496		FEB 65	EF

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009 METHOD C
3. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
4. ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005.
5. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. COAT THREADS AND ITEM 32 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
7. MOUNTING TORQUE FOR ITEM 8 24 IN-LBS ± 2 IN-LBS.
8. SOLDER PER ND 1002071
9. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. BOND ITEM NUMBERS 42 AND 43 TO ITEM 1 PER ND1002237.
11. AR DENOTES AS REQUIRED
12. ON ITEMS 3 AND 4:

    K INDICATES CATHODE END.
    FT ( ) INDICATES FEED THRU.
    PLUS (+) INDICATES POSITVE END OF CAPACITOR.
    C - INDICATES COLLECTOR LEAD OF TRANSISTOR.
    B - BASE
    E - EMITTER
    C_A COLLECTOR
    B_A BASE
    E_A EMITTER
    C_B COLLECTOR
    B_B BASE
    E_B EMITTER
    MULTI STAGE TRANSISTOR.

13. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
14. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
15. TYPICAL SLEEVING FOR R3, R5, R6, R8 R9, R12, R13, R14, R15 AND R16
16. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT 10.
17. VALUE OF R11 AND R17 TO BE DETERMINED BY ELECTRICAL TEST PER ATP1007547 PARTS TO BE SELECTED FROM CHARTS, VALUE IS IN OHMS.
18. ASSEMBLE PER ND 1002136.
19. BOND ITEM NO.35 TO ITEM NO.29. CURE AT AIR TEMPERATURE BEFORE ASSEMBLY TO ITEM NO.1
20. PROCURE PER PS 1007047.
21. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE, SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT 2.5, ½ WIDE
23. FILL PER ND 1002117



SELECTION CHART FOR R11

PART NUMBER	VALUE
1010364 -325	2430
329	2550
337	2800
343	3010
351	3320
355	3480
361	3740
367	4020
371	4220
375	4420
377	4530
381	4750
385	4990
387	5110
391	5360
395	5620
399	5900
403	6190
405	6340
409	6650

SELECTION CHART FOR R17

PART NUMBER	VALUE
1006750-84	150K
-56	10K
-49	5.1K
-44	3.3K
-41	2.4K
-38	1.8K
-36	1.5K
-34	1.2K
-32	1.0K
-30	820
-29	750
-27	620
-25	510
-23	430
-22	390
-20	330
-18	270
-16	220

	QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	☒		REF	1009525	SCHEMATIC DIAGRAM ELECTRICAL
SEE NOTE 17	1		44	1006750-	RESISTOR, FIXED
	1		43	1008540-3	GASKET, CONNECTOR, MINAT.
	1		42	1008540-6	GASKET, CONNECTOR, MINAT.
	AR		41	1006757-8	WIRE, ELECTRICAL .020 DIA
	AR		40	1006757-1	WIRE, ELECTRICAL .010 × .020
	AR		39	1006757-9	WIRE, ELECTRICAL .032 DIA
	AR		38	↑ -22	INSULATION SLEEVING, ELECTRICAL
	AR		37	-21	INSULATION SLEEVING, ELECTRICAL
	AR		36	1006776-20	INSULATION SLEEVING, ELECTRICAL
	AR		35	SEE NOTE 22	INSULATION TAPE, ELECTRICAL
	1		34	1010273-2	TRANSISTOR (MATCHED PAIR)
	1		33	1010324	TRANSFORMER
	1		32	1010307	TRANSFORMER
	1		31	1010431	TRANSISTOR
	1		30	1010345-2	TRANSISTOR (MATCHED PAIR)
	1		29	1010265-2	SEMICONDUCTOR DEVICE, DIODE
	1		28	1010372-15	SEMICONDUCTOR DEVICE, DIODE
	2		27	1010264-9	CAPACITOR, FIXED
	2		26	1010264-37	CAPACITOR, FIXED
	1		25	↑ -57	↑
	1		24	-56	
	2		23	-25	
	2		22	-12	
	4		21	1006750-1	
	~~2~~		~~20~~	~~1010369-1~~	
SEE NOTE 17	1		19	1010364-	
	1		18	↑ -573	
	2		17	-327	
	1		16	-309	
	1		15	1010364-273	RESISTOR, FIXED
	2		14	1008025-2	INSULATOR, BUSHING
	2		13	1000093-13	SCREW
	2		12	1008024-4	WASHER, INSULATOR
	2		11	1008024-3	WASHER, INSULATOR
	2		10	1008021-2	BUSHING, INSULATOR
	2		9	1008071-5	WASHER, FLAT
	2		8	MS20341-416B	NUT
	8		7	1006775	INSULATOR
	8		6	1006182-5	CONTACT, WRAPOST-MALE
			5		
	1		4	1015712	↑
	1		3	1015711	INSULATOR
			2		
	1		1	1015709	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007572		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± .XX ±.02 ±
.XXX ±.005
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Oyel DATE 26 SEP 64
CHECKED E. Wood 3 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

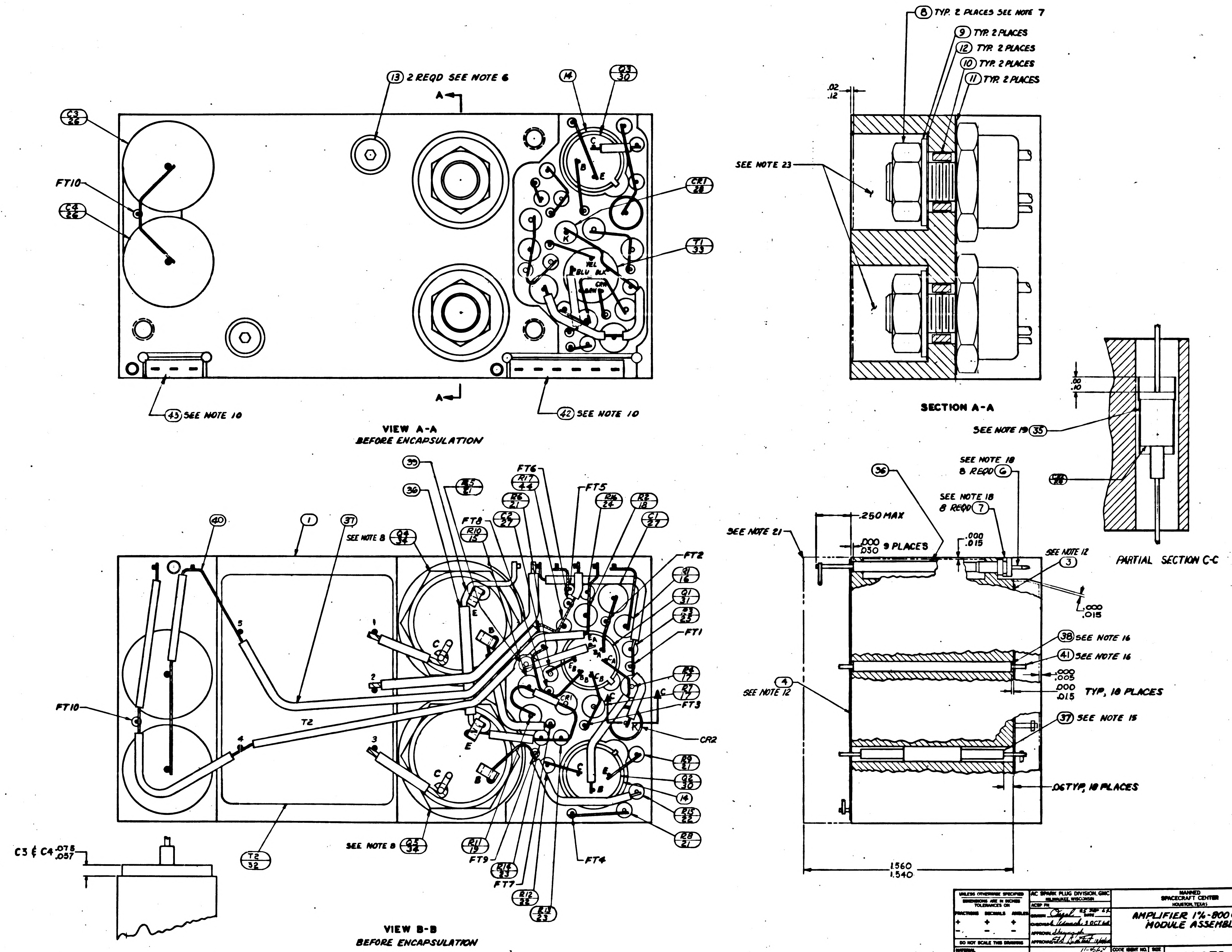
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1% - 800 CPS
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1007547
SCALE 2/1
SHEET 1 OF 2

1007547 A

REVISIONS 1391					
SYM	ZONE	DESCRIPTION		DATE	APPD.
A		REVISED PER TDRR 15496	CHG NO.	1 FEB 65	JJJ / EF



13 2 REQD SEE NOTE 6
14
Q3 30
C3 26
FT10
C4 26
CR1 28
T1 33
C
B
E
K
YEL
BLU
BLK
GRN
A
43 SEE NOTE 10
42 SEE NOTE 10
VIEW A-A
BEFORE ENCAPSULATION
8 TYP. 2 PLACES SEE NOTE 7
9 TYP. 2 PLACES
12 TYP. 2 PLACES
10 TYP. 2 PLACES
11 TYP. 2 PLACES
.02 .12
SEE NOTE 23
SECTION A-A
.00 .10
SEE NOTE 19 35
C2 26
PARTIAL SECTION C-C
39
36
R5 21
FT6
R17 44
FT5
R16 24
R2 18
R6 21
C2 27
C1 27
FT8
R10 15
40
1
37
SEE NOTE 8
Q4 34
FT2
Q1 16
Q1 31
R3 25
FT1
R4 17
R1 17
FT3
CR2
R9 21
Q2 30
14
R15 22
R8 21
FT4
R11 19
FT9
R14 23
FT7
R12 22
R13 23
SEE NOTE 8
Q5 32
T2
T2 32
FT10
1
2
3
4
5
C
E
B
EA
EB
CA
CB
BA
BB
CR1
C3 & C4
.075 .057
VIEW B-B
BEFORE ENCAPSULATION
36
SEE NOTE 18
8 REQD 6
SEE NOTE 18
8 REQD 7
.250 MAX
SEE NOTE 21
.000 .030 9 PLACES
.000 .015
SEE NOTE 12
3
.000 .015
38 SEE NOTE 16
41 SEE NOTE 16
.000 .005
.000 .015 TYP, 18 PLACES
4
SEE NOTE 12
37 SEE NOTE 15
.06 TYP, 18 PLACES
1.560 1.540

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES + + + - - -	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	ACSP PN	AMPLIFIER 1%-800 CPS MODULE ASSEMBLY
MATERIAL	DRAWN Orgel DATE 25 SEP 62 CHECKED [illegible] 3 OCT 62 APPROVAL [illegible] APPROVAL [illegible]	
CONTRACT NAS 9-497	NASA APPROVAL W. J. [illegible] 11-2-62 MIT APPROVAL [illegible]	CODE IDENT NO. — SIZE E — 1007547 SCALE 5/1 — SHEET 2 OF 2

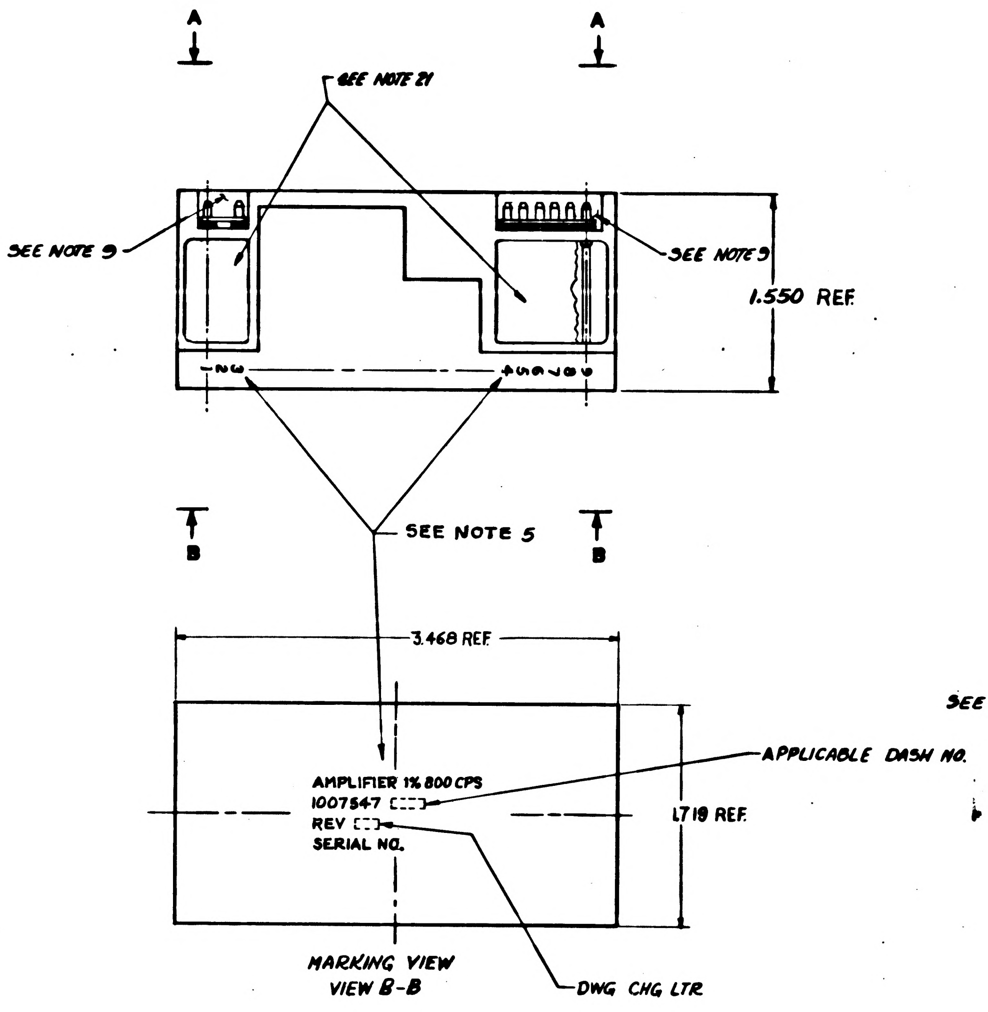
1007547 A

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 15496		FEB 65	JJ
B		REVISED PER TDRR 16638		24FEB 65	JWP

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009 METHOD C
3. UNLESS OTHERWISE SPECIFIED:
   WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
4. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005.
5. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. COAT THREADS AND ITEM 32 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
7. MOUNTING TORQUE FOR ITEM 8 24 IN-LBS ± 2 IN-LBS.
8. SOLDER PER ND1002071
9. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. BOND ITEM NUMBERS 42 AND 43 TO ITEM 1 PER ND1002237.
11. AR DENOTES AS REQUIRED
12. ON ITEMS 3 AND 4:

    K INDICATES CATHODE END.
    FT () INDICATES FEED THRU.
    PLUS (+) INDICATES POSITVE END OF CAPACITOR.
    C - INDICATES COLLECTOR LEAD OF TRANSISTOR.
    B - BASE
    E - EMITTER
    C_A COLLECTOR MULTI STAGE TRANSISTOR.
    B_A BASE
    E_A EMITTER
    C_B COLLECTOR
    B_B BASE
    E_B EMITTER
13. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
14. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
15. TYPICAL SLEEVING FOR R3, R5, R6, R8 R9, R12, R13, R14, R15 AND R16
16. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT10.
17. VALUE OF R11 AND R17 TO BE DETERMINED BY ELECTRICAL TEST PER ATP1007547 PARTS TO BE SELECTED FROM CHARTS, VALUE IS IN OHMS.
18. ASSEMBLE PER ND1002136.
19. BOND ITEM NO.35 TO ITEM NO.29. CURE AT AIR TEMPERATURE BEFORE ASSEMBLY TO ITEM NO.1
20. PROCURE PER PS1007047.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE, SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT 2.5, ½ WIDE
23. FILL PER ND1002117



MARKING VIEW
VIEW B-B

SELECTION CHART FOR R11	
PART NUMBER	VALUE
1010364-325	2430
329	2550
337	2800
343	3010
351	3320
355	3480
361	3740
367	4020
371	4220
375	4420
377	4530
381	4750
385	4990
387	5110
391	5360
395	5620
399	5900
403	6190
405	6340
409	6650

SELECTION CHART FOR R17	
PART NUMBER	VALUE
1006750-84	150K
-56	10K
-49	5.1K
-44	3.3K
-41	2.4K
-38	1.8K
-36	1.5K
-34	1.2K
-32	1.0K
-30	820
-29	750
-27	620
-25	510
-23	430
-22	390
-20	330
-18	270
-16	220

SEE NOTE 17 (item 44)

SEE NOTE 17 (item 19)

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			011				
			☒		REF	1009525	SCHEMATIC DIAGRAM ELECTRICAL
			1		44	1006750-	RESISTOR, FIXED
			1		43	1008540-3	GASKET, CONNECTOR, MINAT.
			1		42	1008540-6	GASKET, CONNECTOR, MINAT.
			AR		41	1006757-8	WIRE, ELECTRICAL .020 DIA
			AR		40	1006757-1	WIRE, ELECTRICAL .010 × .020
			AR		39	1006757-9	WIRE, ELECTRICAL .032 DIA
			AR		38	-22	INSULATION SLEEVING, ELECTRICAL
			AR		37	-21	INSULATION SLEEVING, ELECTRICAL
			AR		36	1006776-20	INSULATION SLEEVING, ELECTRICAL
			AR		35	SEE NOTE 22	INSULATION TAPE, ELECTRICAL
			1		34	1010273-3	TRANSISTOR (MATCHED PAIR)
			1		33	1010324	TRANSFORMER
			1		32	1010307	TRANSFORMER
			1		31	1010431	TRANSISTOR
			1		30	1010345-2	TRANSISTOR (MATCHED PAIR)
			1		29	1010265-2	SEMICONDUCTOR DEVICE, DIODE
			1		28	1010372-15	SEMICONDUCTOR DEVICE, DIODE
			2		27	1010264-9	CAPACITOR, FIXED
			2		26	1010264-37	CAPACITOR, FIXED
			1		25	-57	
			1		24	-56	
			2		23	-25	
			2		22	-12	
			4		21	1006750-1	
			~~2~~		~~20~~	~~1010369-1~~	
			1		19	1010364-	
			1		18	-573	
			2		17	-327	
			1		16	-309	
			1		15	1010364-273	RESISTOR, FIXED
			2		14	1008025-2	INSULATOR, BUSHING
			2		13	1000093-13	SCREW
			2		12	1008024-4	WASHER, INSULATOR
			2		11	1008024-3	WASHER, INSULATOR
			2		10	1008021-2	BUSHING, INSULATOR
			2		9	1008071-5	WASHER, FLAT
			2		8	MS20341-416B	NUT
			8		7	1006775	INSULATOR
			8		6	1006782-5	CONTACT, WRAPOST-MALE
					5		
			1		4	1015712	
			1		3	1015711	INSULATOR
					2		
			1		1	1015709	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007572		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± .XX ±.02 ±
.XXX ±.005
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

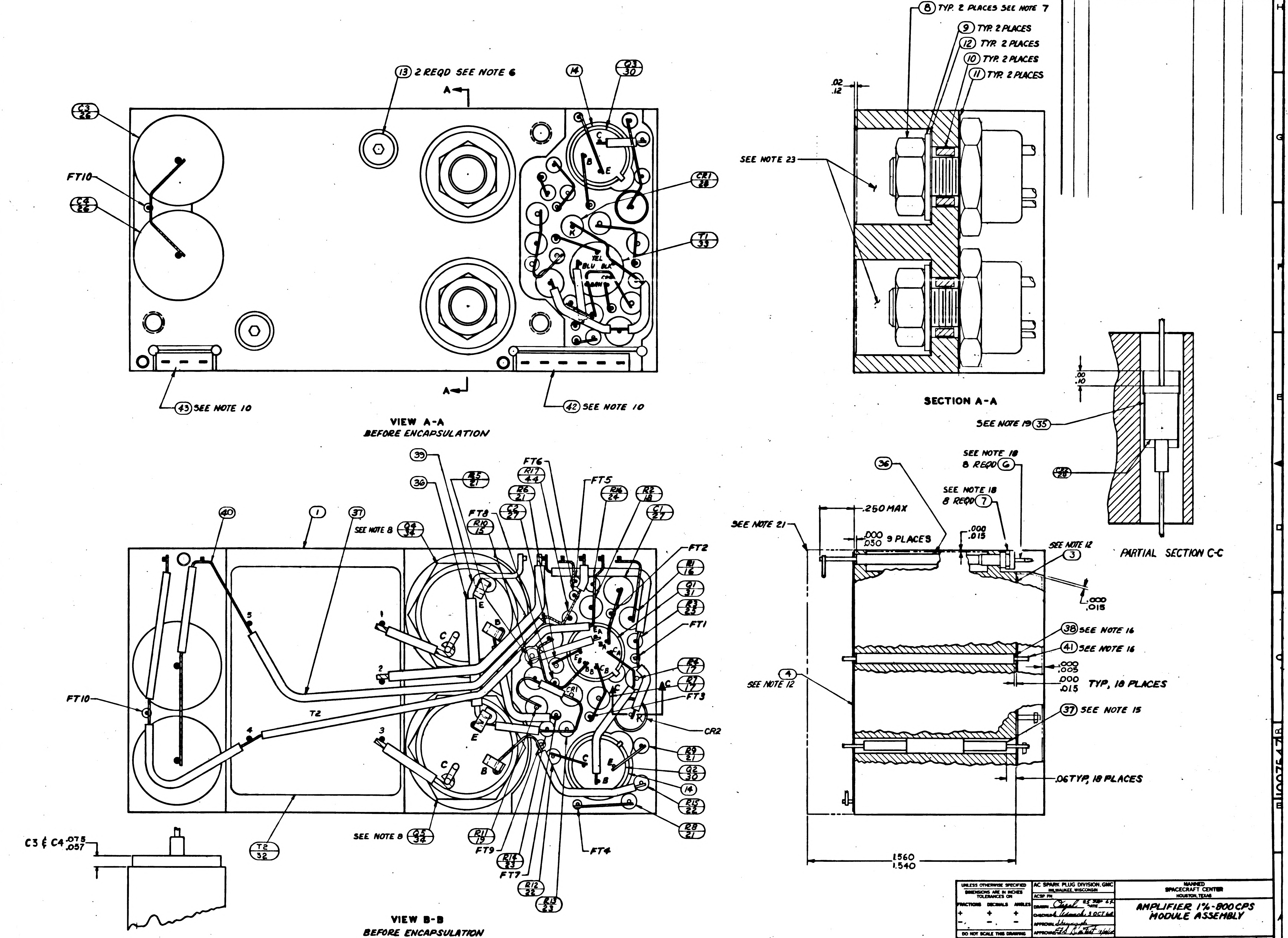
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Ougel DATE 26 SEP 64
CHECKED 3 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1007547
SCALE 2/1
SHEET 1 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 15496		1 FEB 65	JJJ
B		REVISED PER TDRR 16638		24 FEB 65	JUP



13 2 REQD SEE NOTE 6
14
Q3 30
C3 26
FT10
C4 26
CR1 28
T1 33
YEL
BLU
BLK
A
43 SEE NOTE 10
42 SEE NOTE 10
VIEW A-A
BEFORE ENCAPSULATION
8 TYP. 2 PLACES SEE NOTE 7
9 TYP. 2 PLACES
12 TYP. 2 PLACES
10 TYP. 2 PLACES
11 TYP. 2 PLACES
.02
.12
SEE NOTE 23
SECTION A-A
.00
.10
SEE NOTE 19 35
C2 28
PARTIAL SECTION C-C
39
36
R5 21
FT6
R17 44
FT5
R16 24
R2 18
C1 27
40
1
37
SEE NOTE 8 Q4 34
R10 15
FT8
C2 27
R6 21
FT2
R1 16
Q1 31
R3 23
FT1
R4 17
R7 17
FT3
CR2
CR1
T2
R9 21
Q2 30
14
R15 22
R8 21
FT4
R13 23
R12 22
FT7
R14 23
FT9
R11 19
SEE NOTE 8 Q5 34
T2 32
C3 & C4 .075 .057
VIEW B-B
BEFORE ENCAPSULATION
36
SEE NOTE 18 8 REQD 6
SEE NOTE 18 8 REQD 7
.250 MAX
SEE NOTE 21
.000 .030 9 PLACES
.000 .015
SEE NOTE 12 3
.000 .015
38 SEE NOTE 16
41 SEE NOTE 16
.000 .005
.000 .015 TYP, 18 PLACES
4 SEE NOTE 12
37 SEE NOTE 15
.06 TYP, 18 PLACES
1.560 1.540

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orgel DATE 25 SEP 64
CHECKED [illegible] 30 OCT 64
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL W. J. [illegible] 11-4-64
MIT APPROVAL W. [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1% - 800 CPS
MODULE ASSEMBLY

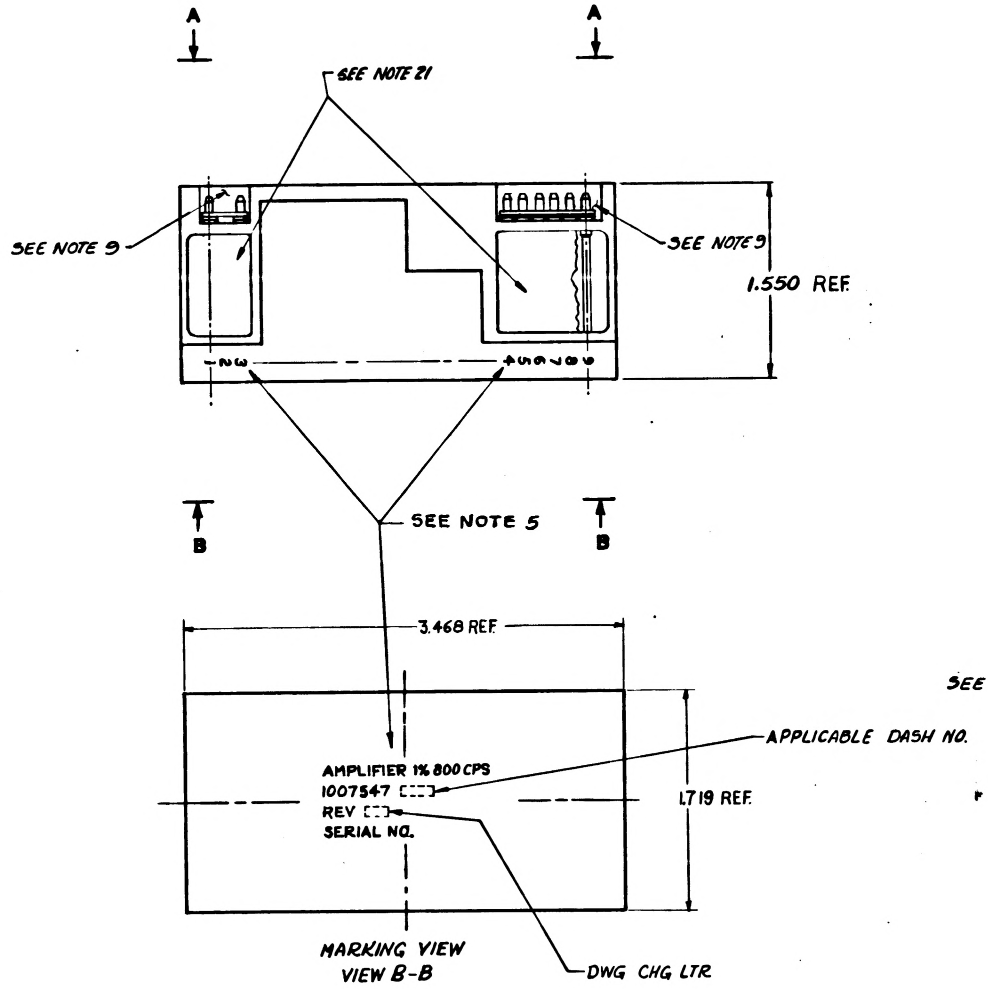
CODE IDENT NO.
SIZE E
1007547
SCALE 5/1
SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ A		REVISED PER TDRR 15496		FEB 65	
Ⓜ B		REVISED PER TDRR 16638		24 FEB 65	JWP
C		REVISED PER TDRR-17313		2 MAR 68	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND 1002009 METHOD C
3. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
4. ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005.
5. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
6. COAT THREADS AND ITEM 32 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
7. MOUNTING TORQUE FOR ITEM 8 24 IN-LBS ± 2 IN-LBS.
8. SOLDER PER ND 1002071
9. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. BOND ITEM NUMBERS 42 AND 43 TO ITEM 1 PER ND 1002237.
11. AR DENOTES AS REQUIRED
12. ON ITEMS 3 AND 4:

    K INDICATES CATHODE END.
    FT ( ) INDICATES FEED THRU.
    PLUS (+) INDICATES POSITVE END OF CAPACITOR.
    C - INDICATES COLLECTOR LEAD OF TRANSISTOR.
    B - BASE
    E - EMITTER
    C_A COLLECTOR
    B_A BASE
    E_A EMITTER
    C_B COLLECTOR
    B_B BASE
    E_B EMITTER
    MULTI STAGE TRANSISTOR.
13. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
14. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
15. TYPICAL SLEEVING FOR R3, R5, R6, R8 R9, R12, R13, R14, R15 AND R16
16. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT 10.
17. VALUE OF R11 AND R17 TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007547 PARTS TO BE SELECTED FROM CHARTS, VALUE IS IN OHMS.
18. ASSEMBLE PER ND 1002136.
19. BOND ITEM NO. 35 TO ITEM NO. 29. CURE AT AIR TEMPERATURE BEFORE ASSEMBLY TO ITEM NO. 1
20. PROCURE PER PS 1007047.
21. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE, SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT 2.5, ½ WIDE
23. FILL PER ND 1002117
24. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.



SEE NOTE 17

SEE NOTE 17

			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			☒		REF	1009525	SCHEMATIC DIAGRAM ELECTRICAL
			1		44	1006750-	RESISTOR, FIXED
			1		43	1008540-3	GASKET, CONNECTOR, MINAT.
			1		42	1008540-6	GASKET, CONNECTOR, MINAT.
			AR		41	1006757-8	WIRE, ELECTRICAL .020 DIA
			AR		40	1006757-1	WIRE, ELECTRICAL .010 × .020
			AR		39	1006757-9	WIRE, ELECTRICAL .032 DIA
			AR		38	-22	INSULATION SLEEVING, ELECTRICAL
			AR		37	-21	INSULATION SLEEVING, ELECTRICAL
			AR		36	1006776-20	INSULATION SLEEVING, ELECTRICAL
			AR		35	SEE NOTE 22	INSULATION TAPE, ELECTRICAL
			1		34	1010273-3	TRANSISTOR (MATCHED PAIR)
			1		33	1010324	TRANSFORMER
			1		32	1010307	TRANSFORMER
			1		31	1010431	TRANSISTOR
			1		30	1010345-2	TRANSISTOR (MATCHED PAIR)
			1		29	1010265-2	SEMICONDUCTOR DEVICE, DIODE
			1		28	1010372-15	SEMICONDUCTOR DEVICE, DIODE
			2		27	1010264-9	CAPACITOR, FIXED
			2		26	1010264-37	CAPACITOR, FIXED
			1		25	-57	
			1		24	-56	
			2		23	-25	
			2		22	-12	
			4		21	1006750-1	
			~~2~~		~~20~~	~~1010369-1~~	
			1		19	1010364-	
			1		18	-573	
			2		17	-327	
			1		16	-309	
			1		15	1010364-273	RESISTOR, FIXED
			2		14	1008025-2	INSULATOR, BUSHING
			2		13	1000093-13	SCREW
			2		12	1008024-4	WASHER, INSULATOR
			2		11	1008024-3	WASHER, INSULATOR
			2		10	1008021-2	BUSHING, INSULATOR
			2		9	1008071-5	WASHER, FLAT
			2		8	MS20341-416B	NUT
			8		7	1006775	INSULATOR
			8		6	1006782-5	CONTACT, WRAPOST-MALE
					5		
			1		4	1015712	
			1		3	1015711	INSULATOR
					2		
			1		1	1015709	HEATSINK

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

SELECTION CHART FOR R11

PART NUMBER	VALUE
1010364-325	2430
329	2550
337	2800
343	3010
351	3320
355	3480
361	3740
367	4020
371	4220
375	4420
377	4530
381	4750
385	4990
387	5110
391	5360
395	5620
399	5900
403	6190
405	6340
409	6650

SELECTION CHART FOR R17

PART NUMBER	VALUE
1006750-84	150K
-56	10K
-49	5.1K
-44	3.3K
-41	2.4K
-38	1.8K
-36	1.5K
-34	1.2K
-32	1.0K
-30	820
-29	750
-27	620
-25	510
-23	430
-22	390
-20	330
-18	270
-16	220

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007572		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± .XX ±.02 ±
.XXX ±.005
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

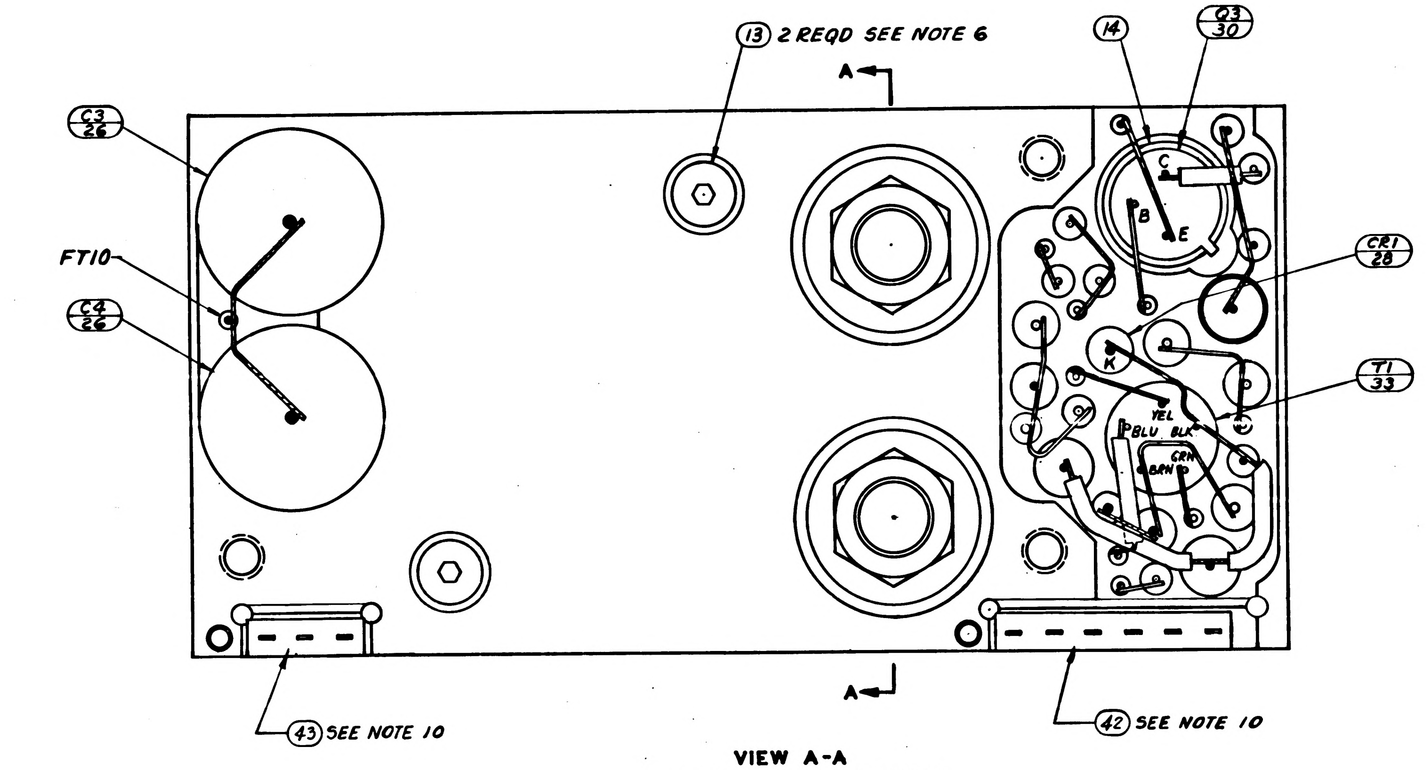
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Ozgel DATE 26 SEP 64
CHECKED A. Unrock 3 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

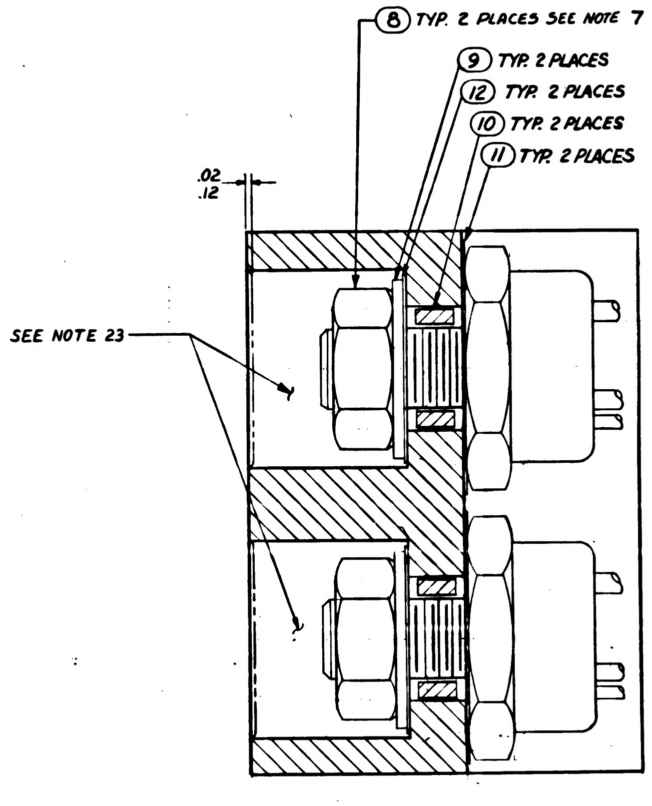
CODE IDENT NO.
SIZE E
1007547
SCALE 2/1
SHEET 1 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 15496		1 FEB 65	
B		REVISED PER TDRR 16638		24 FEB 65	JWP
C		REVISED PER TDRR-17313		12 MAR 65	B



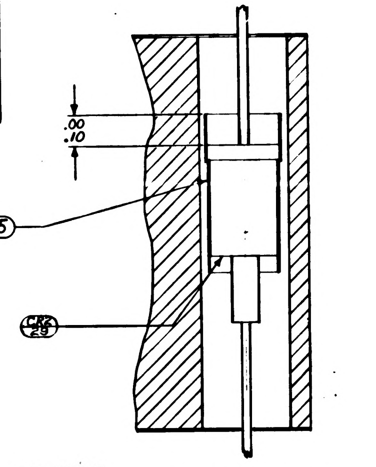
13 2 REQD SEE NOTE 6
A
14
Q3 30
C3 26
FT10
C4 26
CR1 28
T1 33
C
B
E
K
YEL
BLU
BLK
GRN
BRN
43 SEE NOTE 10
42 SEE NOTE 10
A

VIEW A-A
BEFORE ENCAPSULATION



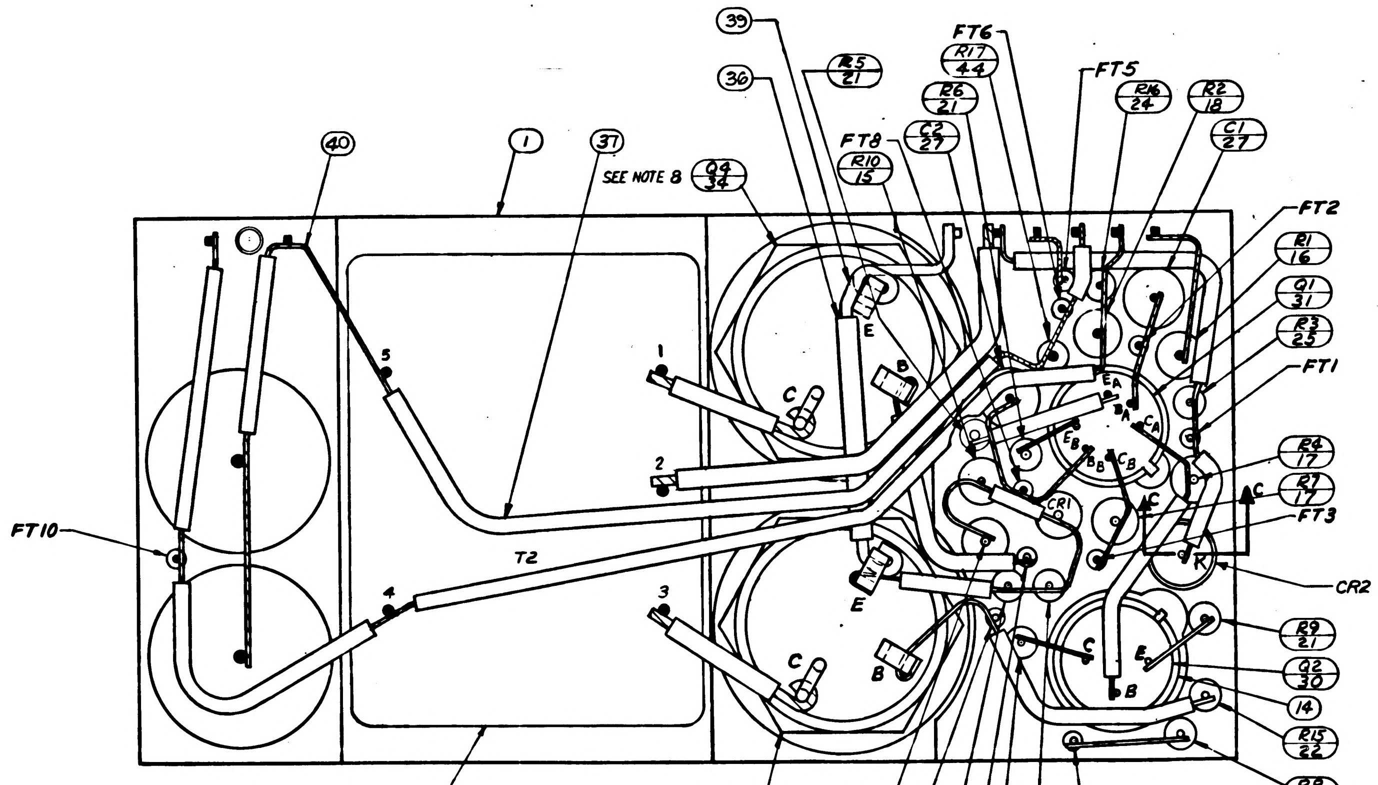
8 TYP. 2 PLACES SEE NOTE 7
9 TYP. 2 PLACES
12 TYP. 2 PLACES
10 TYP. 2 PLACES
11 TYP. 2 PLACES
.02
.12
SEE NOTE 23

SECTION A-A



.00
.10
SEE NOTE 19 35
CR2 28

PARTIAL SECTION C-C



39
36
R5 21
FT6
R17 44
FT5
R6 21
R16 24
R2 18
C2 27
C1 27
FT8
R10 15
40
1
37
SEE NOTE 8 Q4 34
FT2
R1 16
Q1 31
R3 23
FT1
R4 17
R7 17
FT3
CR2
R9 21
Q2 30
14
R15 22
R8 21
FT10
T2
1
2
3
4
5
E
B
C
CR1
K

T2 32

SEE NOTE 8 Q5 34

R11 19

FT9

R14 23

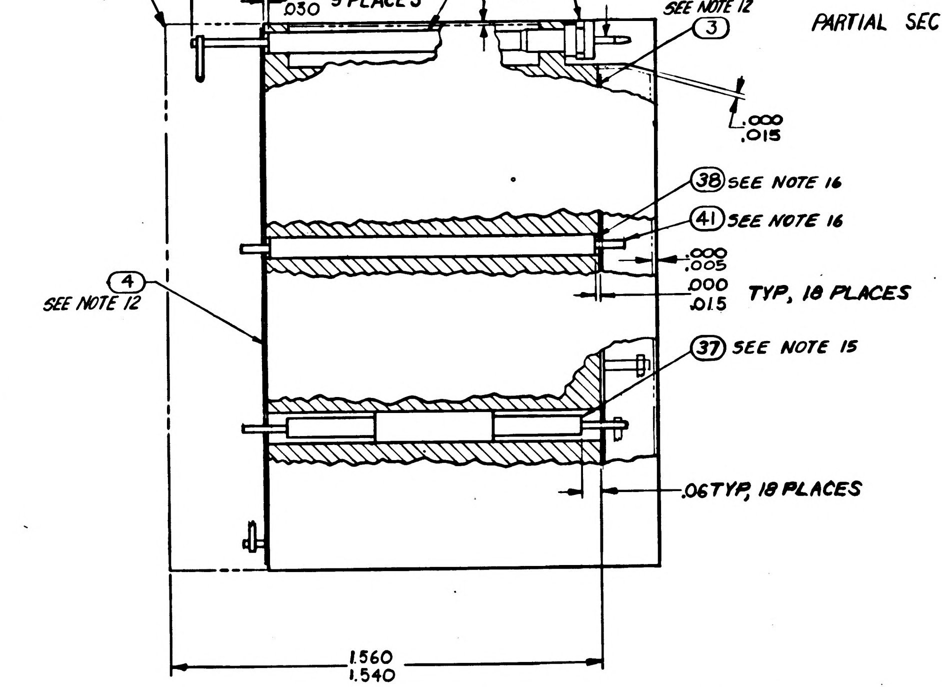
FT7

R12 22

R13 23

FT4

VIEW B-B
BEFORE ENCAPSULATION



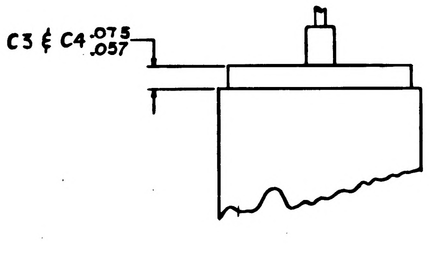
SEE NOTE 21
.000
.030 9 PLACES
.000
.015
SEE NOTE 12 3
.000
.015
38 SEE NOTE 16
41 SEE NOTE 16
.000
.005
.000
.015
TYP. 18 PLACES
4 SEE NOTE 12
37 SEE NOTE 15
.06 TYP. 18 PLACES
1.560
1.540

36

SEE NOTE 18
8 REQD 6

SEE NOTE 18
8 REQD 7

.250 MAX



C3 & C4 .075
.057

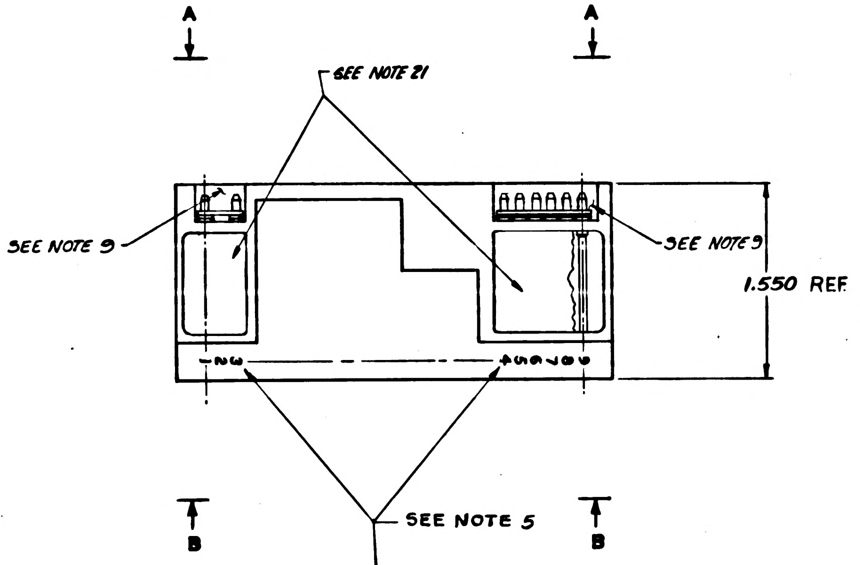
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + − DECIMALS + − ANGLES + −	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
	ACSP PN		
	DRAWN Orzel DATE 25 SEP 64	AMPLIFIER 1%-800CPS MODULE ASSEMBLY	
	CHECKED Urbanch 30 OCT 64		
	APPROVAL		
DO NOT SCALE THIS DRAWING	APPROVAL		
MATERIAL	NASA APPROVAL W. J. Rhine 11-2-64	CODE IDENT NO.	SIZE E 1007547
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 5/1	SHEET 2 OF 2

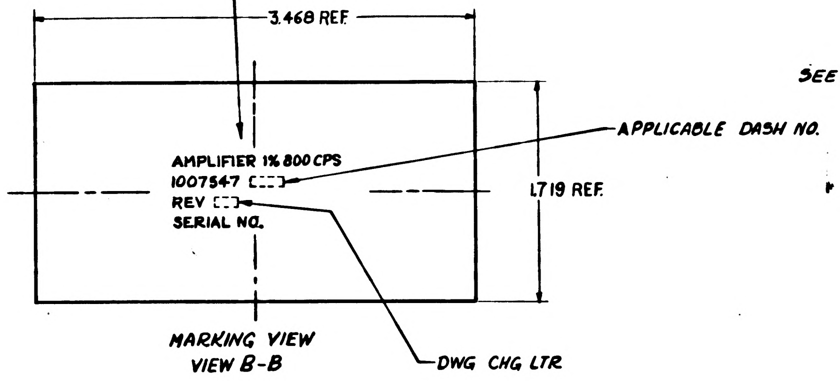
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ A		REVISED PER TDRR 15496		1 FEB 65	JJ
Ⓜ B		REVISED PER TDRR 16638		24 FEB 65	JP
Ⓜ C		REVISED PER TDRR-17313		12 MAR 65	
D		REVISED PER TDRR 17610		24 MAR 65	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009 METHOD C
3. UNLESS OTHERWISE SPECIFIED:
   WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
4. ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005.
5. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. COAT THREADS AND ITEM 32 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
7. MOUNTING TORQUE FOR ITEM 8 24 IN-LBS ± 2 IN-LBS.
8. SOLDER PER ND 1002071
9. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. BOND ITEM NUMBERS 42 AND 43 TO ITEM 1 PER ND1002237.
11. AR DENOTES AS REQUIRED
12. ON ITEMS 3 AND 4:

    K INDICATES CATHODE END.
    FT ( ) INDICATES FEED THRU.
    PLUS (+) INDICATES POSITVE END OF CAPACITOR.
    C - INDICATES COLLECTOR LEAD OF TRANSISTOR.
    B - BASE
    E - EMITTER
    C_A COLLECTOR
    B_A BASE
    E_A EMITTER
    C_B COLLECTOR
    B_B BASE
    E_B EMITTER
    MULTI STAGE TRANSISTOR.
13. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
14. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
15. TYPICAL SLEEVING FOR R3, R5, R6, R8 R9, R12, R13, R14, R15 AND R16
16. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT 10.
17. VALUE OF R11 AND R17 TO BE DETERMINED BY ELECTRICAL TEST PER ATP1007547 PARTS TO BE SELECTED FROM CHARTS, VALUE IS IN OHMS.
18. ASSEMBLE PER ND 1002136.
19. BOND ITEM NO. 35 TO ITEM NO. 29. CURE AT AIR TEMPERATURE BEFORE ASSEMBLY TO ITEM NO. 1
20. PROCURE PER PS 1007047.
21. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE, SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT 2.5, ½ WIDE
23. FILL PER ND 1002117
24. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.





MARKING VIEW
VIEW B-B

SELECTION CHART FOR R11

PART NUMBER	VALUE
1010364-325	2430
329	2550
337	2800
343	3010
351	3320
355	3480
361	3740
367	4020
371	4220
375	4420
377	4530
381	4750
385	4990
387	5110
391	5360
395	5620
399	5900
403	6190
405	6340
409	6650

SELECTION CHART FOR R17

PART NUMBER	VALUE
1006750-84	150K
-56	10K
-49	5.1K
-44	3.3K
-41	2.4K
-38	1.8K
-36	1.5K
-34	1.2K
-32	1.0K
-30	820
-29	750
-27	620
-25	510
-23	430
-22	390
-20	330
-18	270
-16	220

SEE NOTE 17

SEE NOTE 17

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
☒		REF	1009525	SCHEMATIC DIAGRAM ELECTRICAL
1		45	1010829-2	DIODE
1		44	1006750-	RESISTOR, FIXED
1		43	1008540-3	GASKET, CONNECTOR, MINAT.
1		42	1008540-6	GASKET, CONNECTOR, MINAT.
AR		41	1006757-8	WIRE, ELECTRICAL .020 DIA
AR		40	1006757-1	WIRE, ELECTRICAL .010 × .020
AR		39	1006757-9	WIRE, ELECTRICAL .032 DIA
AR		38	-22	INSULATION SLEEVING, ELECTRICAL
AR		37	-21	INSULATION SLEEVING, ELECTRICAL
AR		36	1006776-20	INSULATION SLEEVING, ELECTRICAL
AR		35	SEE NOTE 22	INSULATION TAPE ELECTRICAL
1		34	1010273-3	TRANSISTOR (MATCHED PAIR)
1		33	1010324	TRANSFORMER
1		32	1010307	TRANSFORMER
1		31	1010431	TRANSISTOR
1		30	1010345-2	TRANSISTOR (MATCHED PAIR)
~~1~~		29	~~1010265-2~~	~~SEMICONDUCTOR DEVICE, DIODE~~
1		28	1010372-15	SEMICONDUCTOR DEVICE, DIODE
2		27	1010264-9	CAPACITOR, FIXED
2		26	1010264-37	CAPACITOR, FIXED
1		25	-57	
1		24	-56	
2		23	-25	
2		22	-12	
4		21	1006750-1	
~~2~~		~~20~~	~~1010369-1~~	
1		19	1010364-	
1		18	-573	
2		17	-327	
1		16	-309	
1		15	1010364-273	RESISTOR, FIXED
2		14	1008025-2	INSULATOR, BUSHING
2		13	1000093-13	SCREW
2		12	1008024-4	WASHER, INSULATOR
2		11	1008024-3	WASHER, INSULATOR
2		10	1008021-2	BUSHING, INSULATOR
2		9	1008071-5	WASHER, FLAT
2		8	MS20341-416B	NUT
8		7	1006775	INSULATOR
8		6	1006782-5	CONTACT, WRAPOST-MALE
		5		
1		4	1015712	
1		3	1015711	INSULATOR
		2		
1		1	1015709	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007572		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ .XX ±.02 +
- .XXX ±.005 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

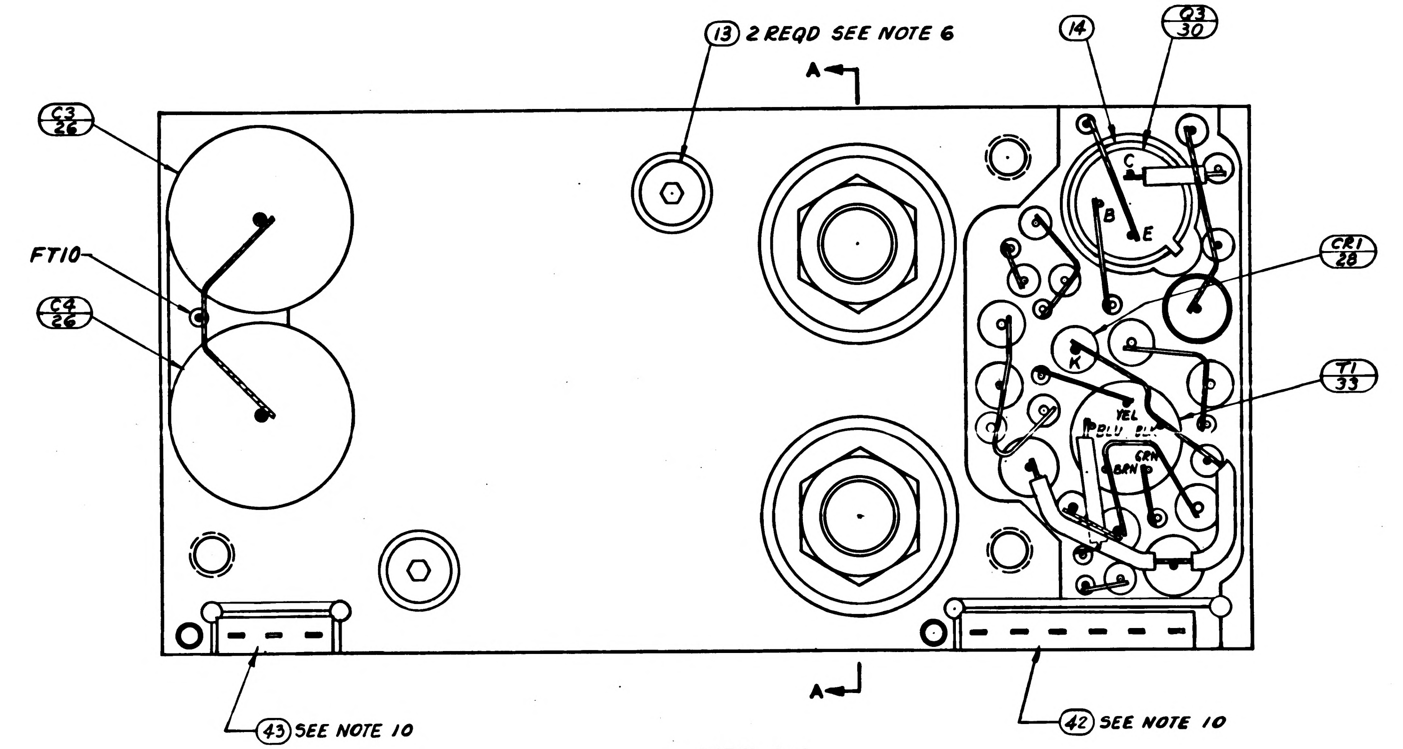
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Oesel DATE 26 SEP 64
CHECKED A. Udvardi 3 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

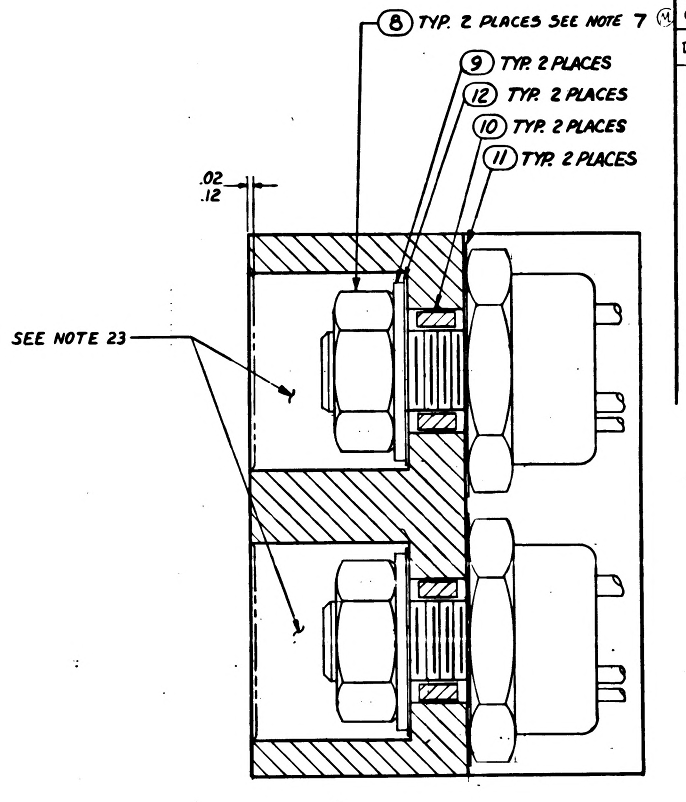
AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1007547
SCALE 2/1
SHEET 1 OF 2

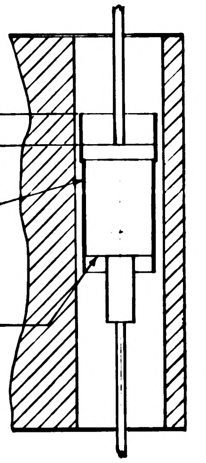
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 15496		1 FEB 65	
B		REVISED PER TDRR 16638		24 FEB 65	JWP
C		REVISED PER TDRR-17313		12-MAR-65	B.
D		REVISED PER TDRR 17610		24 MAR 65	TO / CFC


13 2 REQD SEE NOTE 6
A
C3 26
FT10
C4 26
14
Q3 30
C
B
E
CR1 28
T1 33
K
YEL
BLU
BLK
BRN
GRN
A
43 SEE NOTE 10
42 SEE NOTE 10

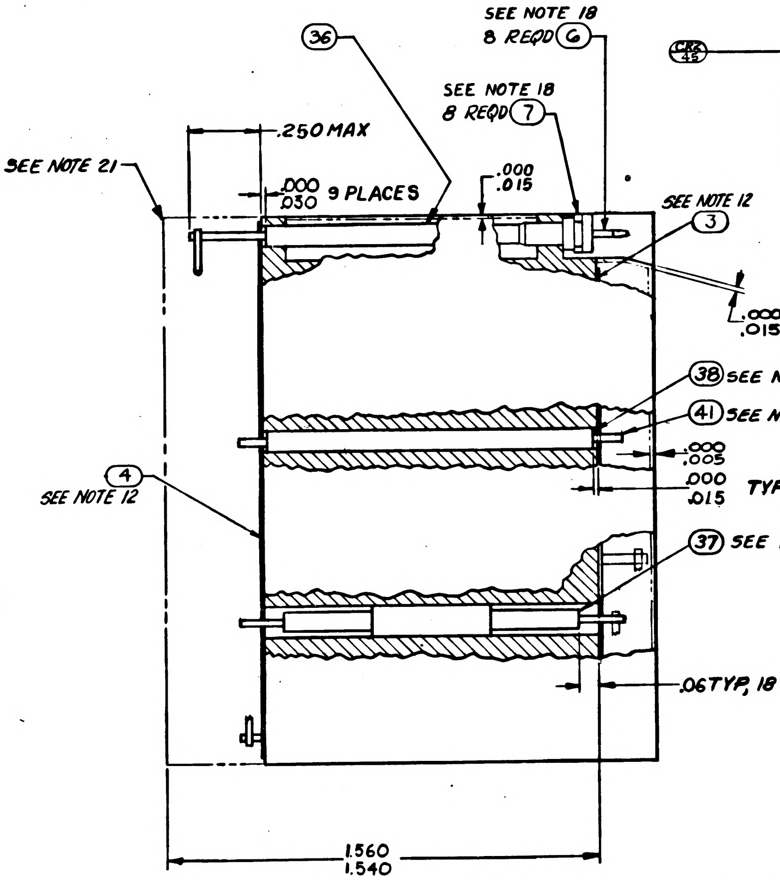
VIEW A-A
BEFORE ENCAPSULATION

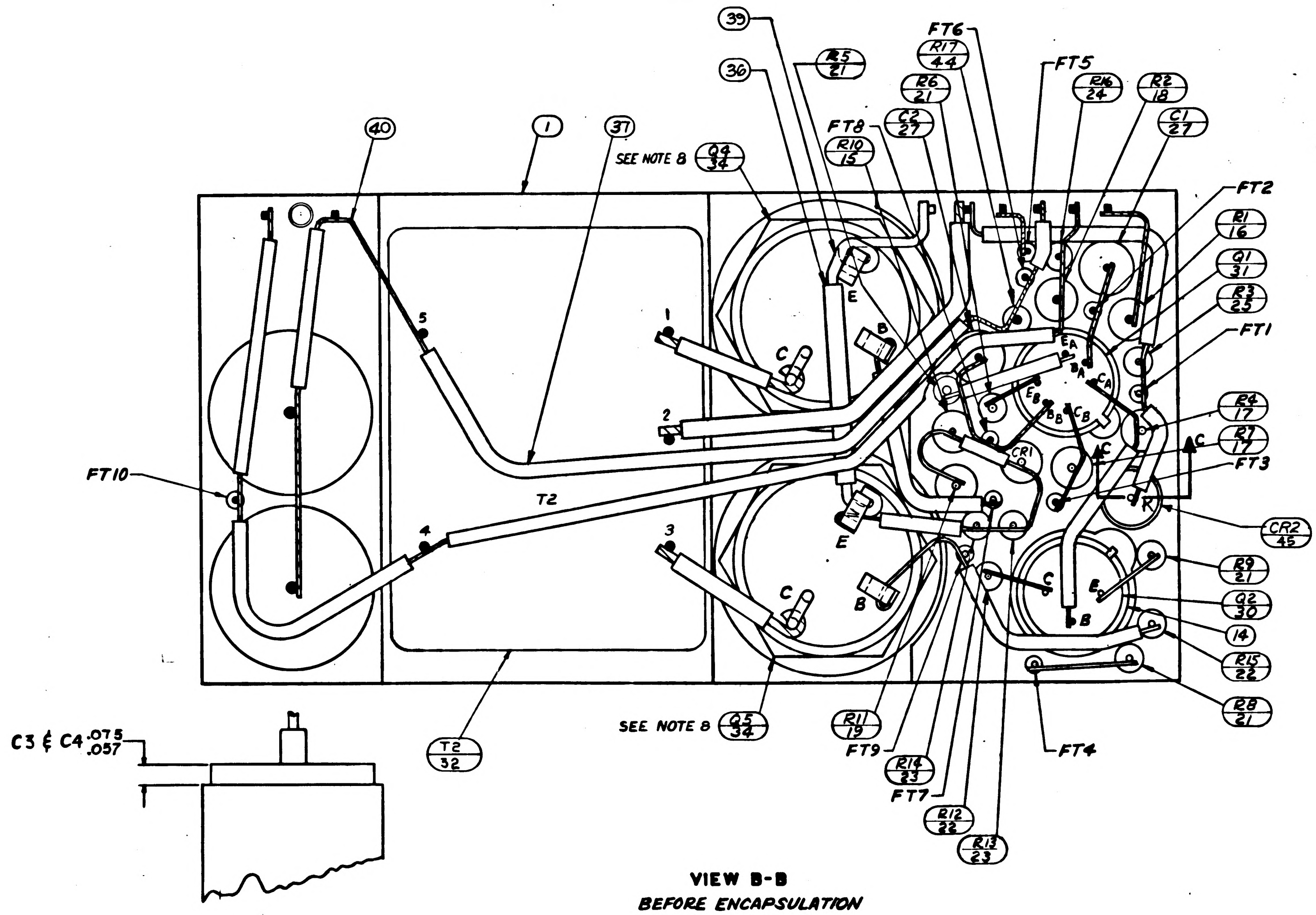

8 TYP. 2 PLACES SEE NOTE 7
9 TYP. 2 PLACES
12 TYP. 2 PLACES
10 TYP. 2 PLACES
11 TYP. 2 PLACES
.02
.12
SEE NOTE 23

SECTION A-A


.00
.10
SEE NOTE 19 35
CR3 45

PARTIAL SECTION C-C


36
SEE NOTE 18
8 REQD 6
SEE NOTE 18
8 REQD 7
.250 MAX
SEE NOTE 21
.000
.030 9 PLACES
.000
.015
SEE NOTE 12
3
.000
.015
38 SEE NOTE 16
41 SEE NOTE 16
.000
.005
.000
.015
TYP, 18 PLACES
4
SEE NOTE 12
37 SEE NOTE 15
.06 TYP, 18 PLACES
1.560
1.540


39
36
R5 21
FT6
R17 44
FT5
R6 21
R16 24
R2 18
C2 27
C1 27
FT8
R10 15
40
1
37
SEE NOTE 8
Q4 34
FT2
R1 16
Q1 31
R3 25
FT1
1
2
3
4
5
E
C
B
EA
BA
CA
EB
BB
CB
CR1
K
T2
FT10
R4 17
R7 17
C
FT3
CR2 45
R9 21
Q2 30
14
R15 22
R8 21
FT4
R13 23
R12 22
FT7
R14 23
FT9
R11 19
SEE NOTE 8
Q5 34
T2 32
C3 & C4 .075
.057

VIEW B-B
BEFORE ENCAPSULATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ \+ \+
- \- \-
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Ozgal DATE 25 Sep 64
CHECKED L. Wlorach 3 OCT 64
APPROVAL Shuryagh
APPROVAL E.S. Bradford 10/6/64
NASA APPROVAL W. J. Rhine 11-4-64
MIT APPROVAL W. Haffer

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1007547
SCALE 5/1
SHEET 2 OF 2

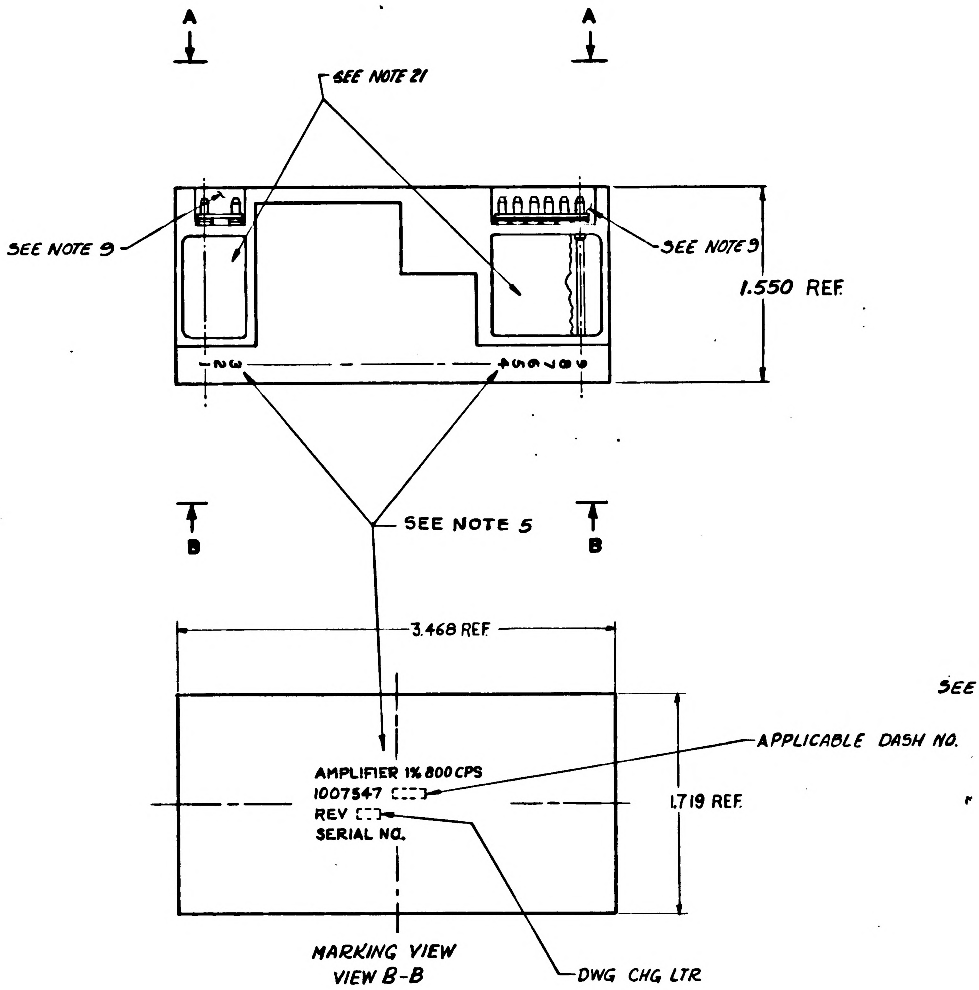
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ A		REVISED PER TDRR 15496		[illegible]	J
Ⓜ B		REVISED PER TDRR 16638		24 FEB 65	JP
Ⓜ C		REVISED PER TDRR-17313		12 MAR 65	[illegible]
Ⓜ D		REVISED PER TDRR 17610		24 MAR [illegible]	CH
E		REVISED PER TDRR 17965		6 APR [illegible]	JJ

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009 METHOD C
3. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
4. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005.
5. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. COAT THREADS AND ITEM 32 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
7. MOUNTING TORQUE FOR ITEM 8 24 IN-LBS ± 2 IN-LBS.
8. SOLDER PER ND 1002071
9. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. BOND ITEM NUMBERS 42 AND 43 TO ITEM 1 PER ND1002237.
11. AR DENOTES AS REQUIRED
12. ON ITEMS 3 AND 4:

    K INDICATES CATHODE END.
    FT ( ) INDICATES FEED THRU.
    PLUS (+) INDICATES POSITVE END OF CAPACITOR.
    C - INDICATES COLLECTOR LEAD OF TRANSISTOR.
    B - BASE
    E - EMITTER
    C_A COLLECTOR
    B_A BASE
    E_A EMITTER
    C_B COLLECTOR
    B_B BASE
    E_B EMITTER
    MULTI STAGE TRANSISTOR.
13. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
14. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
15. TYPICAL SLEEVING FOR R3, R5, R6, R8 R9, R12, R13, R14, R15 AND R16
16. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT10.
17. VALUE OF R11 AND R17 TO BE DETERMINED BY ELECTRICAL TEST PER ATP1007547 PARTS TO BE SELECTED FROM CHARTS, VALUE IS IN OHMS.
18. ASSEMBLE PER ND 1002136.
19. BOND ITEM NO.35 TO ITEM NO.29. CURE AT AIR TEMPERATURE BEFORE ASSEMBLY TO ITEM NO.1
20. PROCURE PER PS 1007047.

21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE, SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT 2.5, ½ WIDE
23. FILL PER ND 1002117
24. BOND A .25 MIN WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.



MARKING VIEW
VIEW B-B

SEE NOTE 17

SEE NOTE 17

			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			☒		REF	1009525	SCHEMATIC DIAGRAM, ELECTRICAL
			1		45	1010829-2	DIODE
			1		44	1006750-	RESISTOR, FIXED
			1		43	1008540-3	GASKET, CONNECTOR, MINAT.
			1		42	1008540-6	GASKET, CONNECTOR, MINAT.
			AR		41	1006757-8	WIRE, ELECTRICAL .020 DIA
			AR		40	1006757-1	WIRE, ELECTRICAL .010 × .020
			AR		39	1006757-9	WIRE, ELECTRICAL .032 DIA
			AR		38	-22	INSULATION SLEEVING, ELECTRICAL
			AR		37	-21	INSULATION SLEEVING, ELECTRICAL
			AR		36	1006776-20	INSULATION SLEEVING, ELECTRICAL
			AR		35	SEE NOTE 22	INSULATION TAPE, ELECTRICAL
			1		34	1010273-3	TRANSISTOR (MATCHED PAIR)
			1		33	1010324	TRANSFORMER
			1		32	1010307	TRANSFORMER
			1		31	1010431	TRANSISTOR
			1		30	1010345-2	TRANSISTOR (MATCHED PAIR)
			~~1~~		29	~~1010265-2~~	~~SEMICONDUCTOR DEVICE, DIODE~~
			1		28	1010372-15	SEMICONDUCTOR DEVICE, DIODE
			2		27	1010264-9	CAPACITOR, FIXED
			2		26	1010264-37	CAPACITOR, FIXED
			1		25	-57	
			1		24	-56	
			2		23	-25	
			2		22	-12	
			4		21	1006750-1	
			~~2~~		~~20~~	~~1010369-1~~	
			1		19	1010364-	
			1		18	-573	
			2		17	-327	
			1		16	-309	
			1		15	1010364-273	RESISTOR, FIXED
			2		14	1008025-2	INSULATOR, BUSHING
			2		13	1000093-13	SCREW
			2		12	1008024-4	WASHER, INSULATOR
			2		11	1008024-3	WASHER, INSULATOR
			2		10	1008021-2	BUSHING, INSULATOR
			2		9	1008071-5	WASHER, FLAT
			2		8	MS20341-416B	NUT
			8		7	1006775	INSULATOR
			8		6	1006782-5	CONTACT, WRAPOST-MALE
					5		
			1		4	1008308	
			1		3	1008307	INSULATOR
					2		
			1		1	1008306	HEATSINK

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

SELECTION CHART FOR R11	
PART NUMBER	VALUE
1010364-325	2430
329	2550
337	2800
343	3010
351	3320
355	3480
361	3740
367	4020
371	4220
375	4420
377	4530
381	4750
385	4990
387	5110
391	5360
395	5620
399	5900
403	6190
405	6340
409	6650

SELECTION CHART FOR R17	
PART NUMBER	VALUE
1006750-84	150K
-56	10K
-49	5.1K
-44	3.3K
-41	2.4K
-38	1.8K
-36	1.5K
-34	1.2K
-32	1.0K
-30	820
-29	750
-27	620
-25	510
-23	430
-22	390
-20	330
-18	270
-16	220

1007572		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS .XX ±.02 .XXX ±.005 ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Ozel DATE 26 SEP 64
CHECKED A. Udvarch 3 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

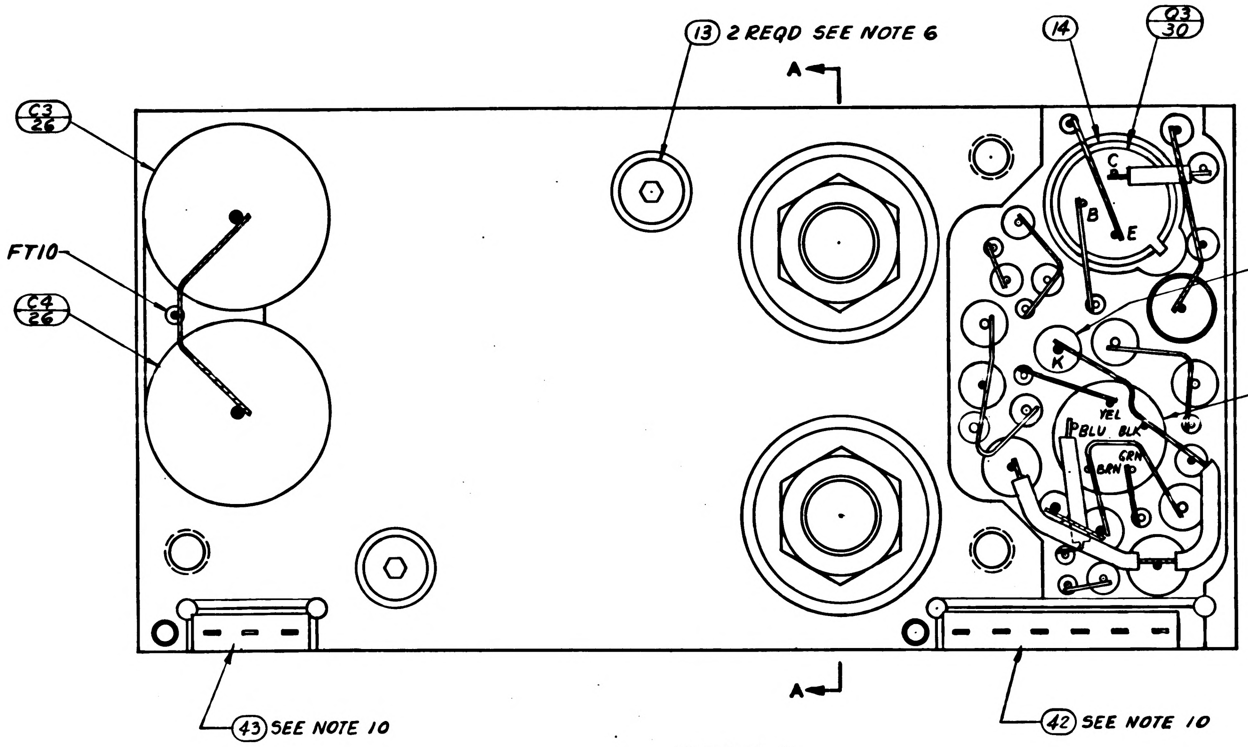
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

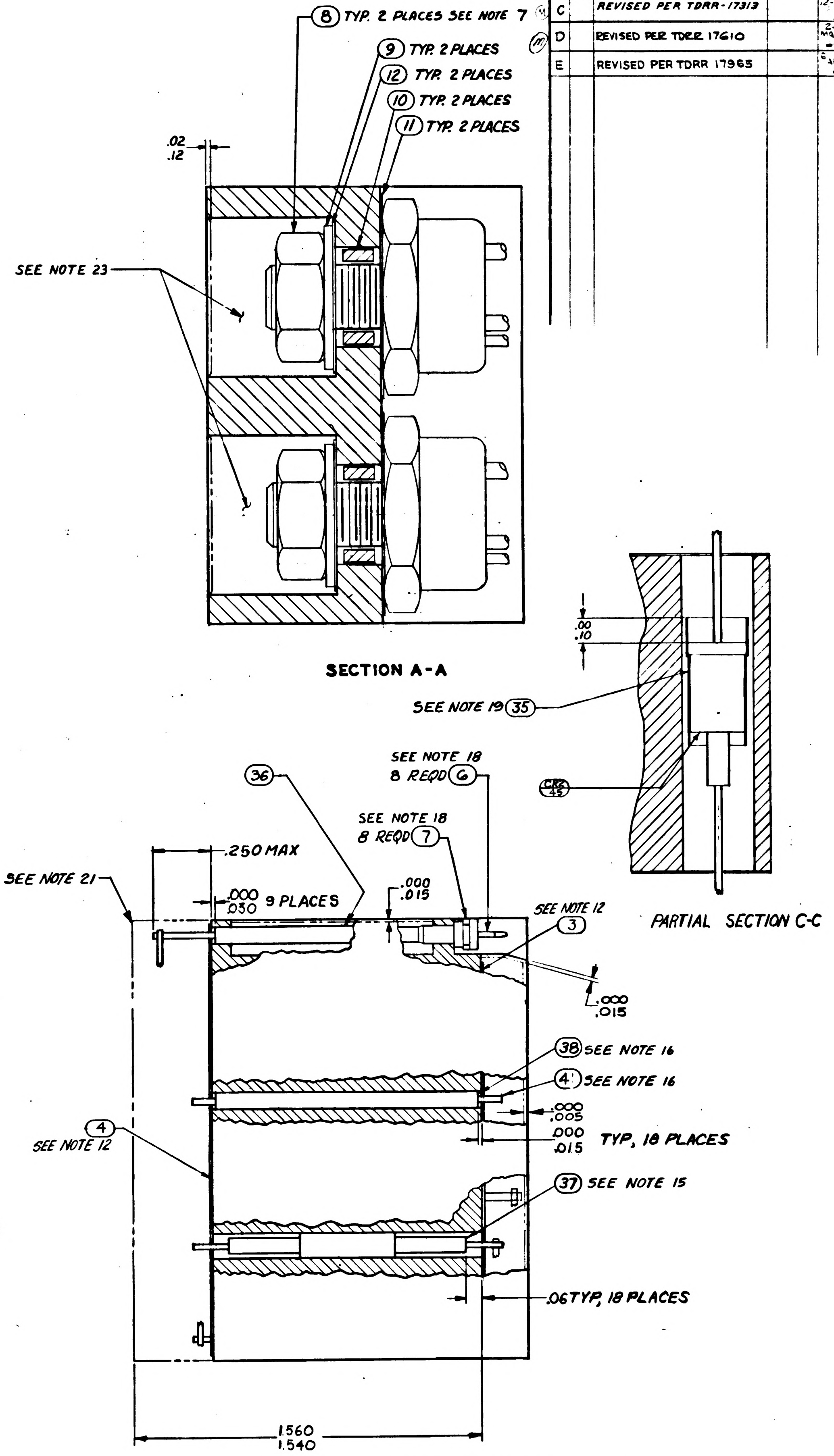
CODE IDENT NO.
SIZE E
1007547
SCALE 2/1
SHEET 1 OF 2

1007547 E

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 15496		FEB 65	
B		REVISED PER TDRR 16638		24 FEB 65	JWP
C		REVISED PER TDRR-17313		12-AR-65	
D		REVISED PER TDRR 17610		2-MAR-65	HTC
E		REVISED PER TDRR 17965		6 APR 65	

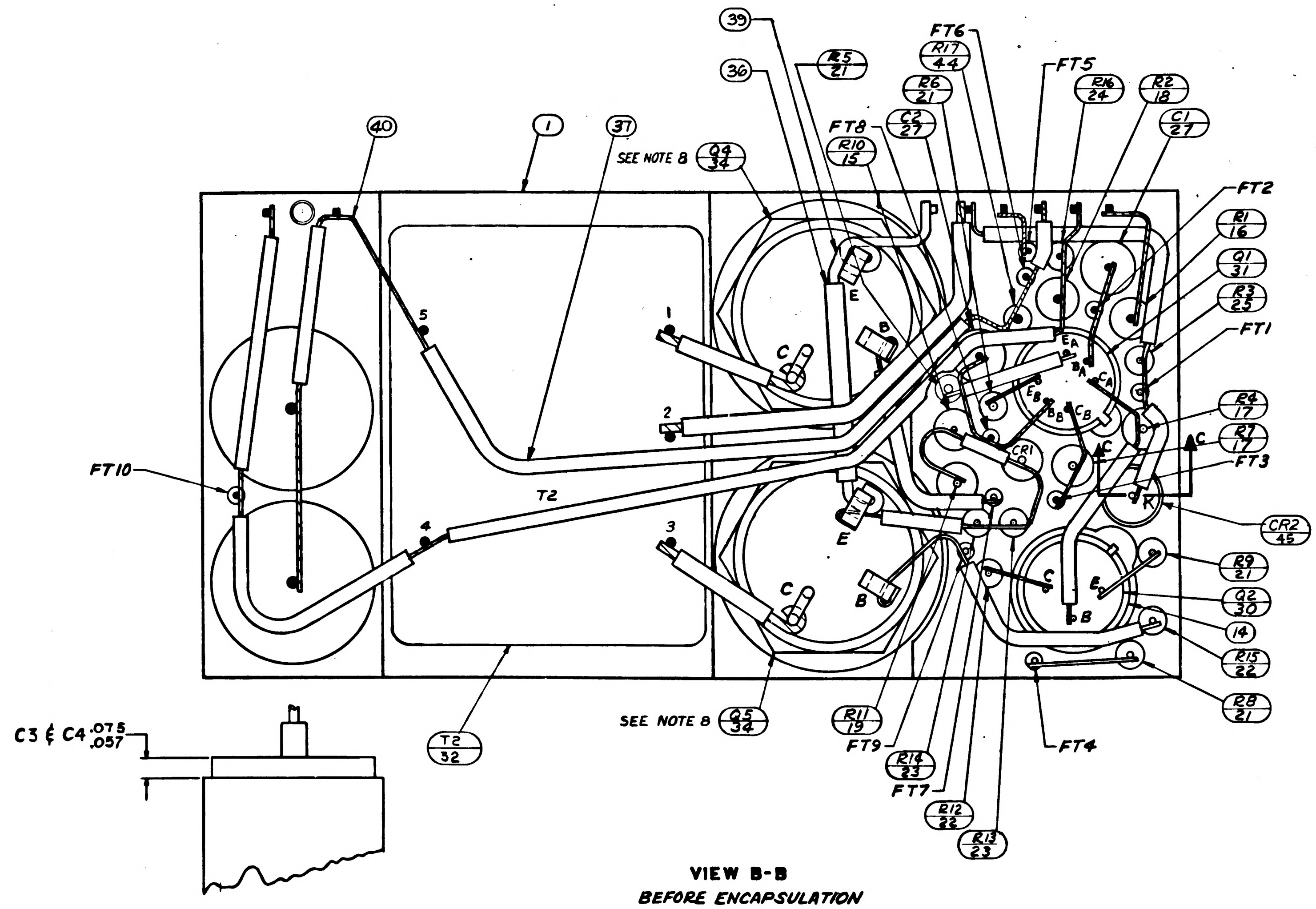

13 2 REQD SEE NOTE 6
A
14
Q3 30
C3 26
FT10
C4 26
C
B
E
CR1 28
K
T1 33
YEL
BLU
BLK
BRN
GRN
A
43 SEE NOTE 10
42 SEE NOTE 10

VIEW A-A
BEFORE ENCAPSULATION


8 TYP. 2 PLACES SEE NOTE 7
9 TYP. 2 PLACES
12 TYP. 2 PLACES
10 TYP. 2 PLACES
11 TYP. 2 PLACES
.02
.12
SEE NOTE 23
.00
.10
SEE NOTE 19 35
CR2 45
36
SEE NOTE 18
8 REQD 6
SEE NOTE 18
8 REQD 7
SEE NOTE 21
.250 MAX
.000
.030 9 PLACES
.000
.015
SEE NOTE 12 3
.000
.015
38 SEE NOTE 16
4 SEE NOTE 16
.000
.005
.000
.015
TYP, 18 PLACES
4
SEE NOTE 12
37 SEE NOTE 15
.06 TYP, 18 PLACES
1.560
1.540

SECTION A-A

PARTIAL SECTION C-C


39
R5 21
FT6
R17 44
FT5
R16 24
R2 18
36
R6 21
40
1
37
SEE NOTE 8 Q4 34
FT8
C2 27
R10 15
C1 27
FT2
R1 16
Q1 31
R3 25
FT1
5
1
2
3
4
T2
E
C
B
EA
BA
CA
EB
BB
CB
CR1
C
K
R4 17
R7 17
FT3
CR2 45
R9 21
Q2 30
14
R15 22
R8 21
FT4
FT10
SEE NOTE 8 Q5 34
T2 32
R11 19
FT9
R14 23
FT7
R12 22
R13 23
C3 & C4 .075
.057

VIEW B-B
BEFORE ENCAPSULATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES + + + – – –	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	ACSP PN	
	DRAWN Orgel DATE 25 SEP 64 CHECKED Udvarck 3 OCT 64 APPROVAL APPROVAL	AMPLIFIER 1%-800CPS MODULE ASSEMBLY
DO NOT SCALE THIS DRAWING		
MATERIAL	NASA APPROVAL W. J. 10-8-64	CODE IDENT NO. SIZE E 1007547
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 5/1 SHEET 2 OF 2

	SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ	A		REVISED PER TDRR 15496		[illegible]	[illegible]
Ⓜ	B		REVISED PER TDRR 16638		24 FEB	JP
Ⓜ	C		REVISED PER TDRR-17313		12 [illegible]	[illegible]
Ⓜ	D		REVISED PER TDRR 17610		2 MAR	[illegible]
Ⓜ	E		REVISED PER TDRR 17965		[illegible]	[illegible]
	F		REVISED PER TDRR 18514		[illegible]	[illegible]

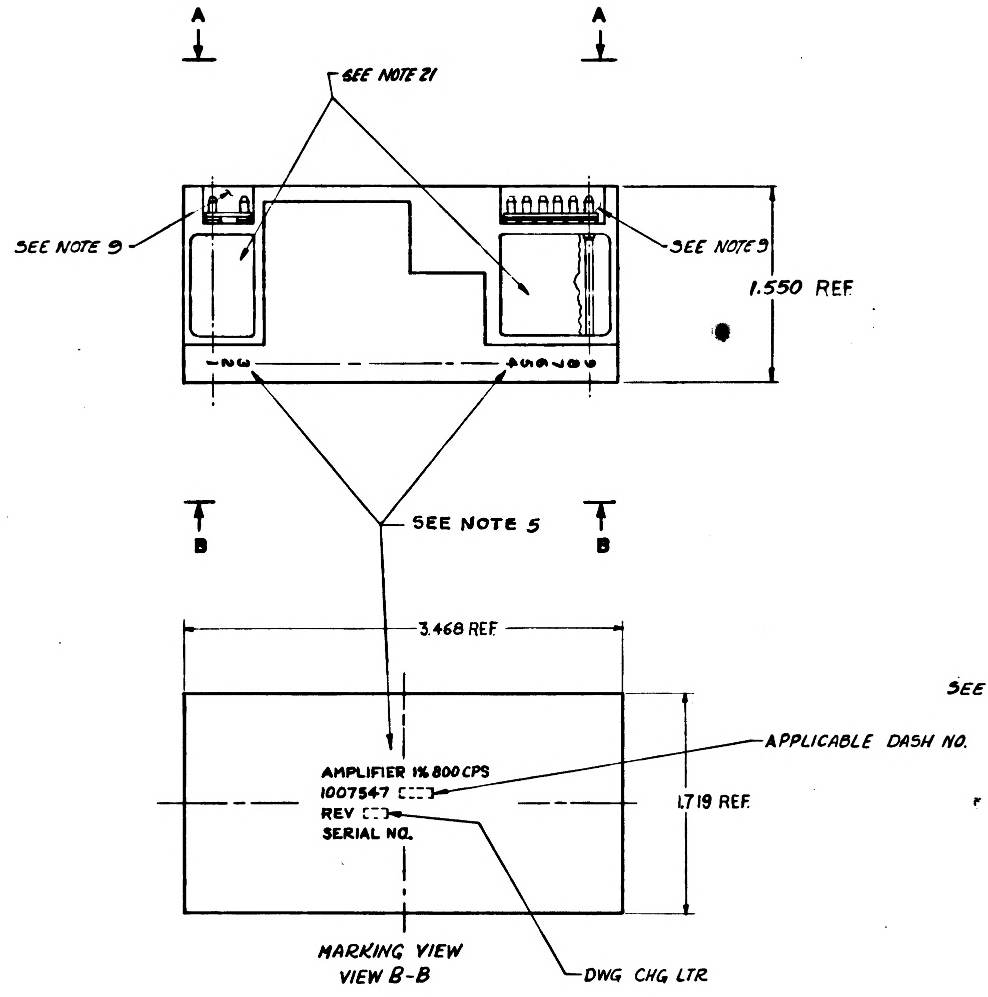
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND 1002009 METHOD C
3. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
4. ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005.
5. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
6. COAT THREADS AND ITEM 32 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
7. MOUNTING TORQUE FOR ITEM 8 24 IN-LBS ± 2 IN-LBS.
8. SOLDER PER ND 1002071
9. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. BOND ITEM NUMBERS 42 AND 43 TO ITEM 1 PER ND 1002237.
11. AR DENOTES AS REQUIRED
12. ON ITEMS 3 AND 4:

    K INDICATES CATHODE END.
    FT ( ) INDICATES FEED THRU.
    PLUS (+) INDICATES POSITVE END OF CAPACITOR.
    C - INDICATES COLLECTOR LEAD OF TRANSISTOR.
    B - BASE
    E - EMITTER
    C_A COLLECTOR
    B_A BASE
    E_A EMITTER
    C_B COLLECTOR
    B_B BASE
    E_B EMITTER
    MULTI STAGE TRANSISTOR.

13. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
14. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
15. TYPICAL SLEEVING FOR R3, R5, R6, R8 R9, R12, R13, R14, R15 AND R16
16. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT10.
17. VALUE OF R11 AND R17 TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007077 PARTS TO BE SELECTED FROM CHARTS, VALUE IS IN OHMS.
18. ASSEMBLE PER ND 1002136.
19. BOND ITEM NO. 35 TO ITEM NO. 29. CURE AT AIR TEMPERATURE BEFORE ASSEMBLY TO ITEM NO. 1
20. PROCURE PER PS 1007047.

21. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE, SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT 2.5, ½ WIDE
23. FILL PER ND 1002117
24. BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE 1.



MARKING VIEW
VIEW B-B

SELECTION CHART FOR R11	
PART NUMBER	VALUE
1010364-325	2430
329	2550
337	2800
343	3010
351	3320
355	3480
361	3740
367	4020
371	4220
375	4420
377	4530
381	4750
385	4990
387	5110
391	5360
395	5620
399	5900
403	6190
405	6340
409	6650

SELECTION CHART FOR R17	
PART NUMBER	VALUE
1006750-84	150K
-56	10K
-49	5.1K
-44	3.3K
-41	2.4K
-38	1.8K
-36	1.5K
-34	1.2K
-32	1.0K
-30	820
-29	750
-27	620
-25	510
-23	430
-22	390
-20	330
-18	270
-16	220

SEE NOTE 17 (item 44)

SEE NOTE 17 (item 19)

QUANTITY REQUIRED			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			⊠		REF	1009525	SCHEMATIC DIAGRAM ELECTRICAL
			1		45	1010829-2	DIODE
			1		44	1006750-	RESISTOR, FIXED
			1		43	1008540-3	GASKET, CONNECTOR, MINAT.
			1		42	1008540-6	GASKET, CONNECTOR, MINAT.
			AR		41	1006757-8	WIRE, ELECTRICAL .020 DIA
			AR		40	1006757-1	WIRE, ELECTRICAL .010 × .020
			AR		39	1006757-9	WIRE, ELECTRICAL .032 DIA
			AR		38	-22	INSULATION SLEEVING, ELECTRICAL
			AR		37	-21	INSULATION SLEEVING, ELECTRICAL
			AR		36	1006776-20	INSULATION SLEEVING, ELECTRICAL
			AR		35	SEE NOTE 22	INSULATION TAPE, ELECTRICAL
			1		34	1010273-3	TRANSISTOR (MATCHED PAIR)
			1		33	1010324	TRANSFORMER
			1		32	1010307	TRANSFORMER
			1		31	1010431	TRANSISTOR
			1		30	1010345-2	TRANSISTOR (MATCHED PAIR)
			~~1~~		29	~~1010265-2~~	~~SEMICONDUCTOR DEVICE, DIODE~~
			1		28	1010372-15	SEMICONDUCTOR DEVICE, DIODE
			2		27	1010264-9	CAPACITOR, FIXED
			2		26	1010264-37	CAPACITOR, FIXED
			1		25	-57	
			1		24	-56	
			2		23	-25	
			2		22	-12	
			4		21	1006750-1	
			~~2~~		~~20~~	~~1010369-1~~	
			1		19	1010364-	
			1		18	-573	
			2		17	-327	
			1		16	-309	
			1		15	1010364-273	RESISTOR, FIXED
			2		14	1008025-2	INSULATOR, BUSHING
			2		13	1000093-13	SCREW
			2		12	1008024-4	WASHER, INSULATOR
			2		11	1008024-3	WASHER, INSULATOR
			2		10	1008021-2	BUSHING, INSULATOR
			2		9	1008071-5	WASHER, FLAT
			2		8	MS20341-416B	NUT
			8		7	1006775	INSULATOR
			8		6	1006782-5	CONTACT, WRAPOST-MALE
					5		
			1		4	1008308	
			1		3	1008307	INSULATOR
					2		
			1		1	1008306	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007572		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ .XX ±.02 +
− .XXX ±.005 −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

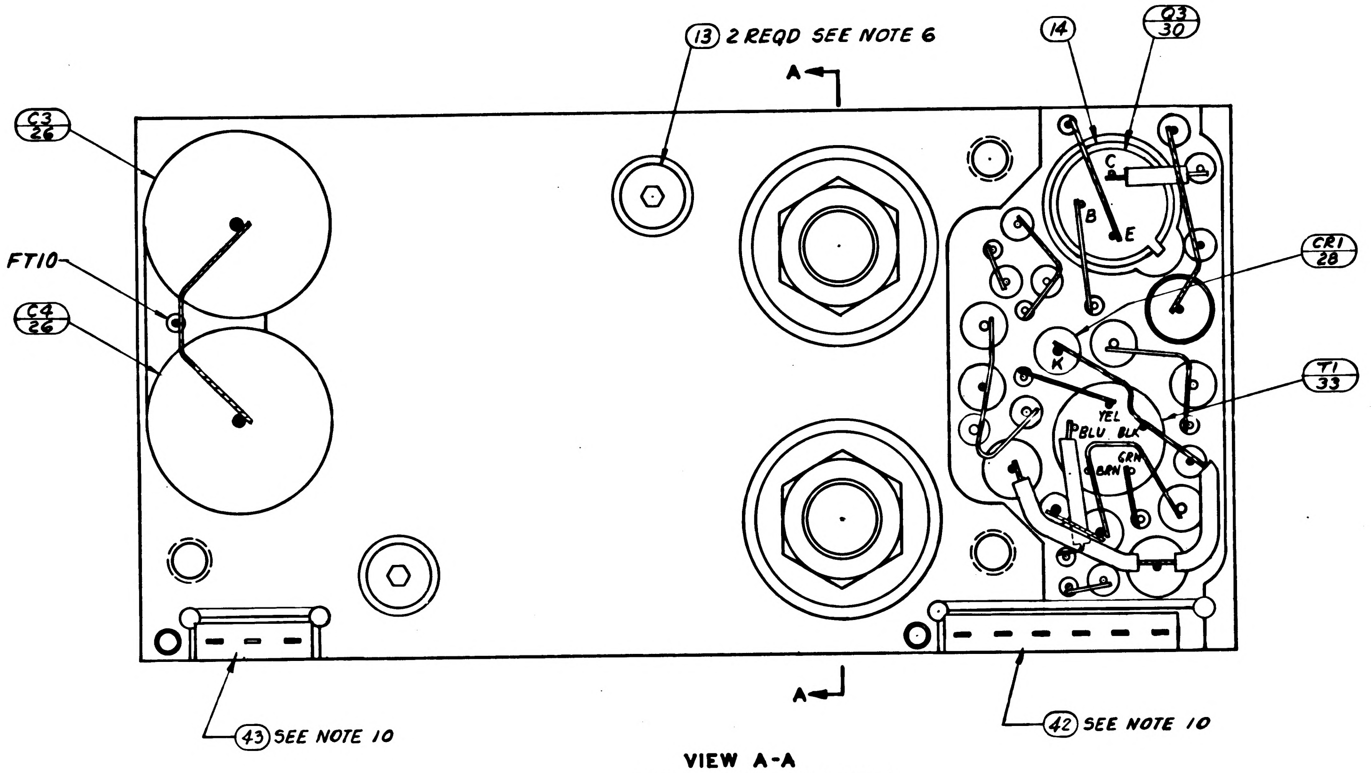
MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN Oesel DATE 26 SEP 64
CHECKED A. Udorech 3 OCT 64
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

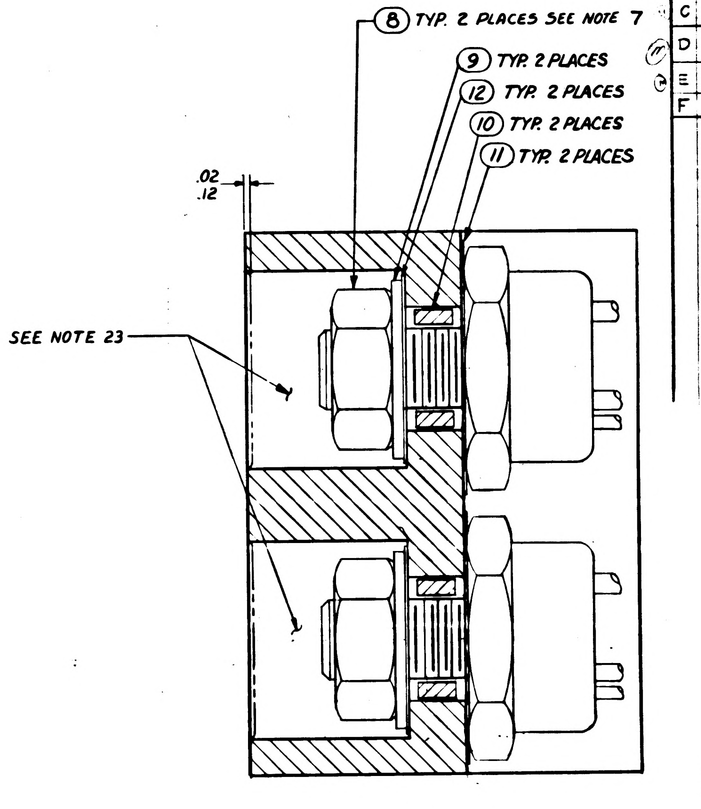
CODE IDENT NO. 80230
SIZE E
1007547
SCALE 2/1
SHEET 1 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 15496			
B		REVISED PER TDRR 16638			JWP
C		REVISED PER TDRR-17313			
D		REVISED PER TDRR 17610			
E		REVISED PER TDRR 17965			
F		REVISED PER TDRR 18514			



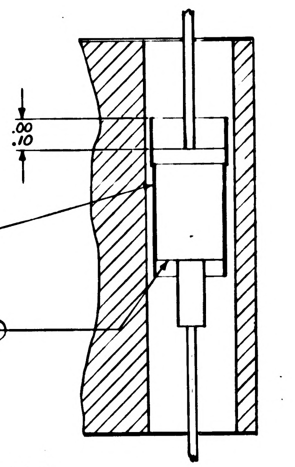
13 2 REQD SEE NOTE 6
A
C3 26
FT10
C4 26
14
Q3 30
C
B
E
CR1 28
K
T1 33
YEL
BLU
BLK
GRN
BRN
43 SEE NOTE 10
42 SEE NOTE 10
A

VIEW A-A
BEFORE ENCAPSULATION



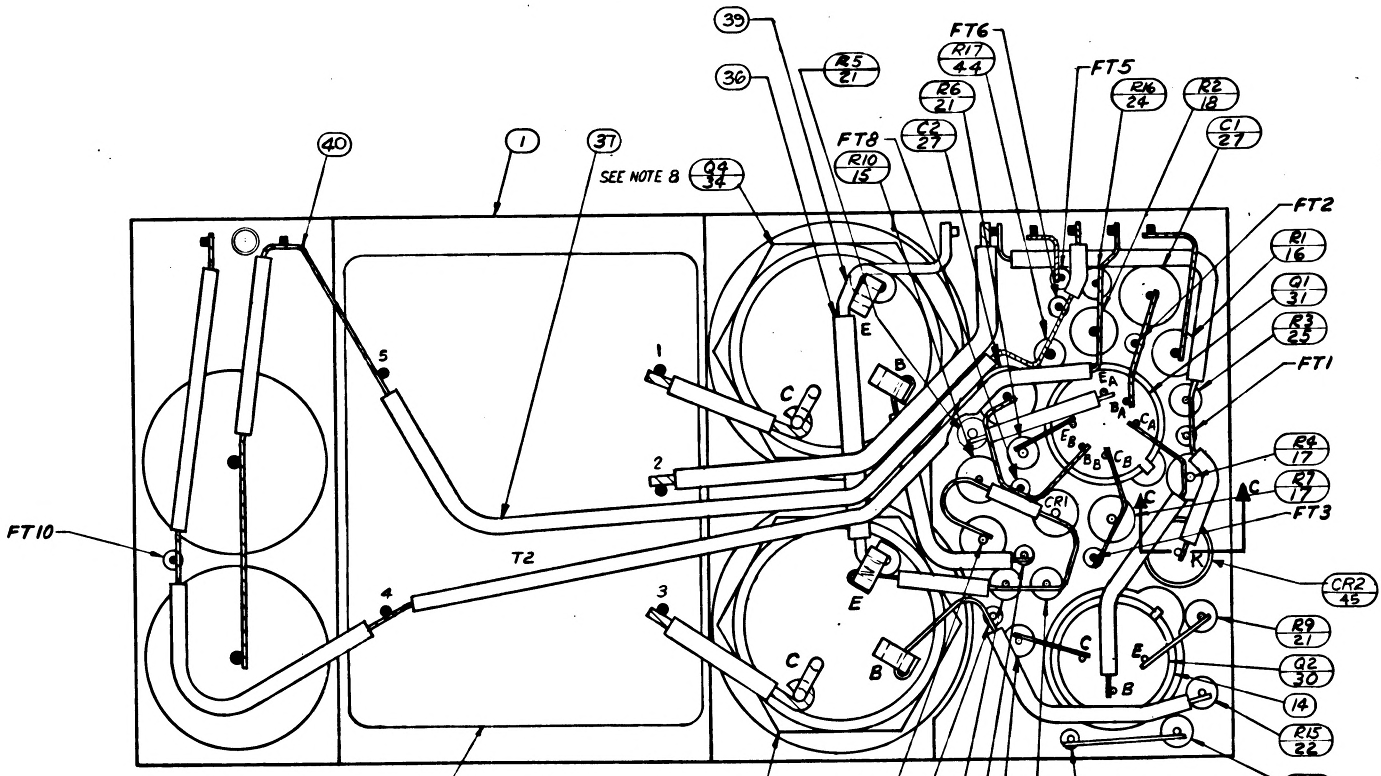
8 TYP. 2 PLACES SEE NOTE 7
9 TYP. 2 PLACES
12 TYP. 2 PLACES
10 TYP. 2 PLACES
11 TYP. 2 PLACES
.02
.12
SEE NOTE 23

SECTION A-A



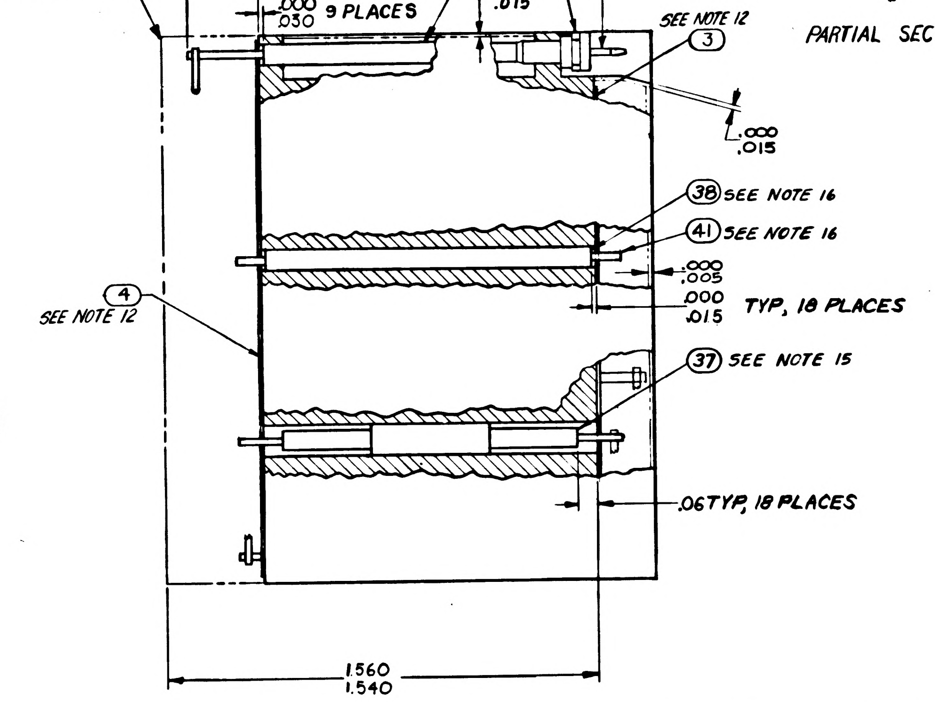
SEE NOTE 19 35

PARTIAL SECTION C-C

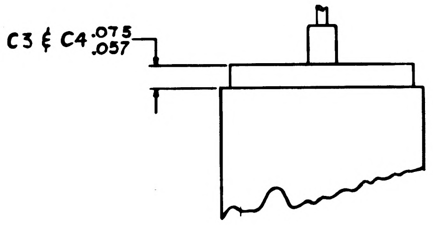


39
R5 21
36
FT6
R17 44
FT5
R16 24
R2 18
C1 27
40
1
37
SEE NOTE 8 Q4 34
R10 15
FT8
C2 27
R6 21
FT2
R1 16
Q1 31
R3 23
FT1
5
1
2
3
4
C
E
B
E
C
B
E
B
K
CR1
R4 17
R7 17
C
FT3
CR2 45
R9 21
Q2 30
14
R15 22
R8 21
FT10
T2
T2 32
SEE NOTE 8 Q5 34
R11 19
FT9
R14 23
FT7
R12 22
R13 23
FT4

VIEW B-B
BEFORE ENCAPSULATION



36
SEE NOTE 18 8 REQD 6
SEE NOTE 18 8 REQD 7
.250 MAX
SEE NOTE 21
.000 .030 9 PLACES
.000 .015
SEE NOTE 12
3
.000 .015
38 SEE NOTE 16
41 SEE NOTE 16
.000 .005
.000 .015 TYP, 18 PLACES
4 SEE NOTE 12
37 SEE NOTE 15
.06TYP, 18 PLACES
1.560 1.540



C3 & C4 .075 .057

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ + +
− − −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orgel DATE 25 Sep 64
CHECKED Udonch 3 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1007547
SCALE 5/1
SHEET 2 OF 2

TABLE I

CONFIGURATION	MAT	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER AT PERIMETER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	ADHESIVE	.12 MIN 100% OF PERIMETER .25 MIN 80% OF PERIMETER	.25 MIN 100% OF PERIMETER	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	ADHESIVE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	.25 MIN 100% OF PERIMETER	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	PRIMER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 TO .06 OF EXTERNAL EDGE

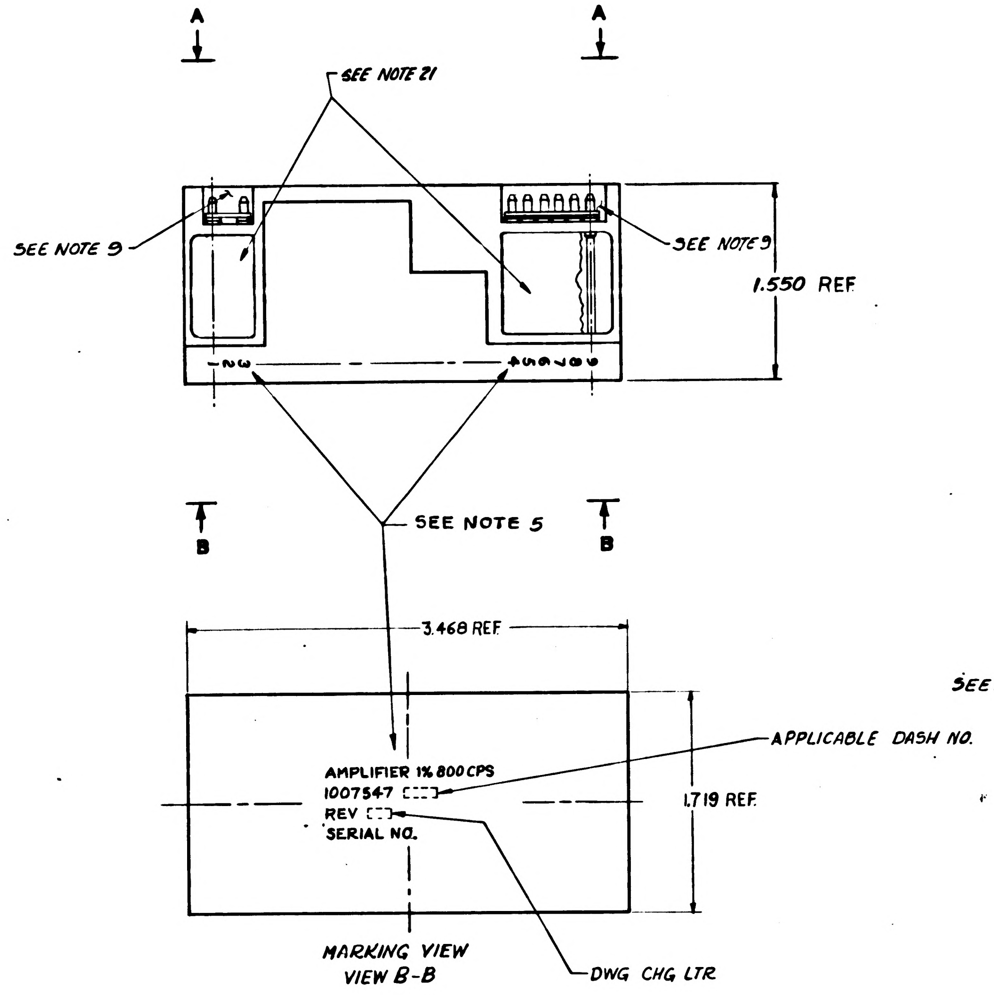
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ A		REVISED PER TDRR 15496		FEB 65	JJ / EF
Ⓜ B		REVISED PER TDRR 16638		24 FEB 65	JWP / W.C.
Ⓜ C		REVISED PER TDRR-17313		12-MAR-65	JB / EF
Ⓜ D		REVISED PER TDRR 17610		24 MAR 65	WTO / CHP
Ⓜ E		REVISED PER TDRR 17965		6 APR 65	JJJ / MEM
Ⓜ F		REVISED PER TDRR 18514		27 APR 65	R.W.T. / AU
G		REVISED PER TDRR 19399		JUN 65	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND 1002009 METHOD C
3. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
4. ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005.
5. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
6. COAT THREADS AND ITEM 32 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
7. MOUNTING TORQUE FOR ITEM 8 24 IN-LBS ± 2 IN-LBS.
8. SOLDER PER ND 1002071
9. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. BOND ITEM NUMBERS 42 AND 43 TO ITEM 1 PER ND 1002237.
11. AR DENOTES AS REQUIRED
12. ON ITEMS 3 AND 4:

K INDICATES CATHODE END.
FT ( ) INDICATES FEED THRU.
PLUS (+) INDICATES POSITVE END OF CAPACITOR.
C - INDICATES COLLECTOR LEAD OF TRANSISTOR.
B - BASE
E - EMITTER
C_A COLLECTOR
B_A BASE
E_A EMITTER
C_B COLLECTOR
B_B BASE
E_B EMITTER
MULTI STAGE TRANSISTOR.

13. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
14. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
15. TYPICAL SLEEVING FOR R3, R5, R6, R8 R9, R12, R13, R14, R15 AND R16
16. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT 10.
17. VALUE OF R11 AND R17 TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007077 PARTS TO BE SELECTED FROM CHARTS, VALUE IS IN OHMS.
18. ASSEMBLE PER ND 1002136.
19. BOND ITEM NO. 35 TO ITEM NO. 29. CURE AT AIR TEMPERATURE BEFORE ASSEMBLY TO ITEM NO. 1
20. PROCURE PER PS 1007047.
21. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE, SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT 2.5, ½ WIDE
23. FILL PER ND 1002117
24. ~~BOND A .25 MIN. WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
25. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF PRIMER BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE I. PRIMER TO CONSIST OF SIX PARTS BY VOLUME OF 1012504-1 AND ONE PART BY VOLUME OF 1012504-2. APPLY MATERIAL AND PRIMER AS INDICATED IN TABLE I.



MARKING VIEW
VIEW B-B

SELECTION CHART FOR R11	
PART NUMBER	VALUE
1010364-325	2430
329	2550
337	2800
343	3010
351	3320
355	3480
361	3740
367	4020
371	4220
375	4420
377	4530
381	4750
385	4990
387	5110
391	5360
395	5620
399	5900
403	6190
405	6340
409	6650

SELECTION CHART FOR R17	
PART NUMBER	VALUE
1006750-84	150K
-56	10K
-49	5.1K
-44	3.3K
-41	2.4K
-38	1.8K
-36	1.5K
-34	1.2K
-32	1.0K
-30	820
-29	750
-27	620
-25	510
-23	430
-22	390
-20	330
-18	270
-16	220

SEE NOTE 17 (items 44 and 19)

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		REF	1009525	SCHEMATIC DIAGRAM ELECTRICAL
1		45	1010829-2	DIODE
1		44	1006750-	RESISTOR, FIXED
1		43	1008540-3	GASKET, CONNECTOR, MINAT.
1		42	1008540-6	GASKET, CONNECTOR, MINAT.
AR		41	1006757-8	WIRE, ELECTRICAL .020 DIA
AR		40	1006757-1	WIRE, ELECTRICAL .010 × .020
AR		39	1006757-9	WIRE, ELECTRICAL .032 DIA
AR		38	-22	INSULATION SLEEVING, ELECTRICAL
AR		37	-21	INSULATION SLEEVING, ELECTRICAL
AR		36	1006776-20	INSULATION SLEEVING, ELECTRICAL
AR		35	SEE NOTE 22	INSULATION TAPE, ELECTRICAL
1		34	1010273-3	TRANSISTOR (MATCHED PAIR)
1		33	1010324	TRANSFORMER
1		32	1010307	TRANSFORMER
1		31	1010431	TRANSISTOR
1		30	1010345-2	TRANSISTOR (MATCHED PAIR)
~~1~~		29	~~1010265-2~~	~~SEMICONDUCTOR DEVICE, DIODE~~
1		28	1010372-15	SEMICONDUCTOR DEVICE, DIODE
2		27	1010264-9	CAPACITOR, FIXED
2		26	1010264-37	CAPACITOR, FIXED
1		25	-57	
1		24	-56	
2		23	-25	
2		22	-12	
4		21	1006750-1	
~~2~~		~~20~~	~~1010369-1~~	
1		19	1010364-	
1		18	-573	
2		17	-327	
1		16	-309	
1		15	1010364-273	RESISTOR, FIXED
2		14	1008025-2	INSULATOR, BUSHING
2		13	1000093-13	SCREW
2		12	1008024-4	WASHER, INSULATOR
2		11	1008024-3	WASHER, INSULATOR
2		10	1008021-2	BUSHING, INSULATOR
2		9	1008071-5	WASHER, FLAT
2		8	MS20341-416B	NUT
8		7	1006775	INSULATOR
8		6	1006782-5	CONTACT, WRAPOST-MALE
		5		
1		4	1008308	
1		3	1008307	INSULATOR
		2		
1		1	1008306	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007572		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ .XX ±.02 +
- .XXX ±.005 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

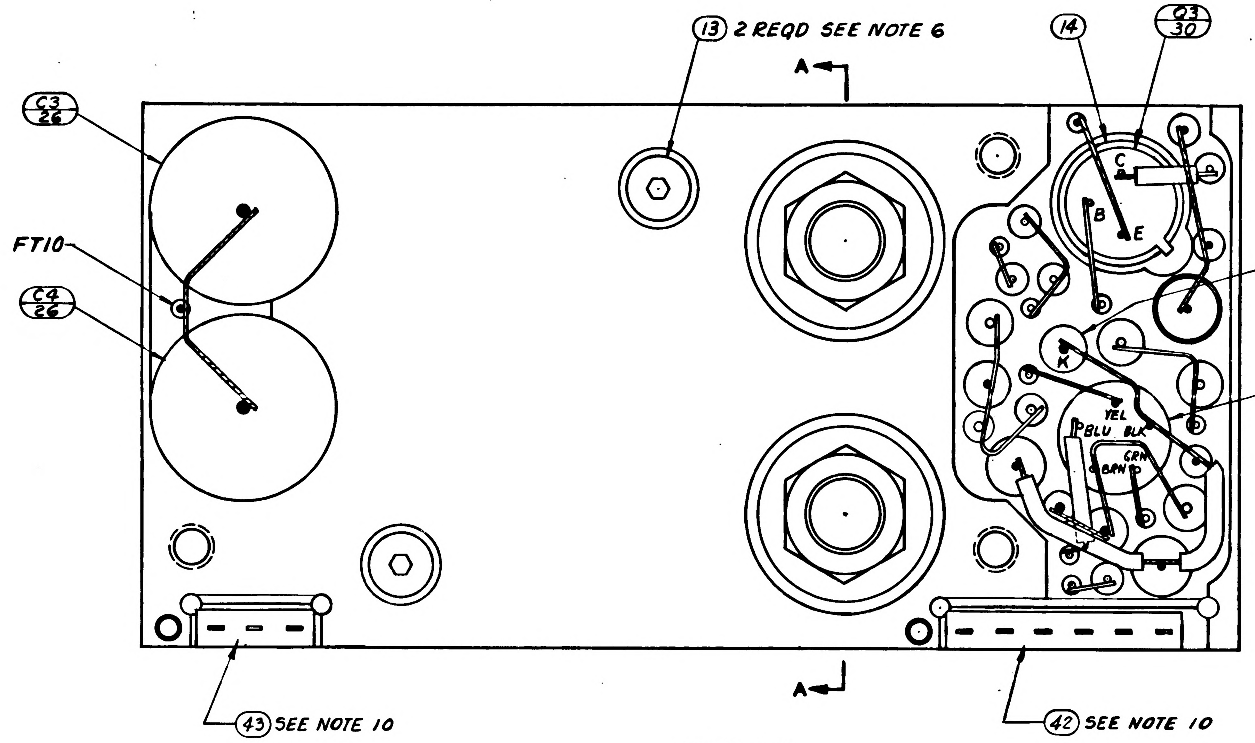
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Ouzel DATE 26 SEP 64
CHECKED A. Wenrich 3 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

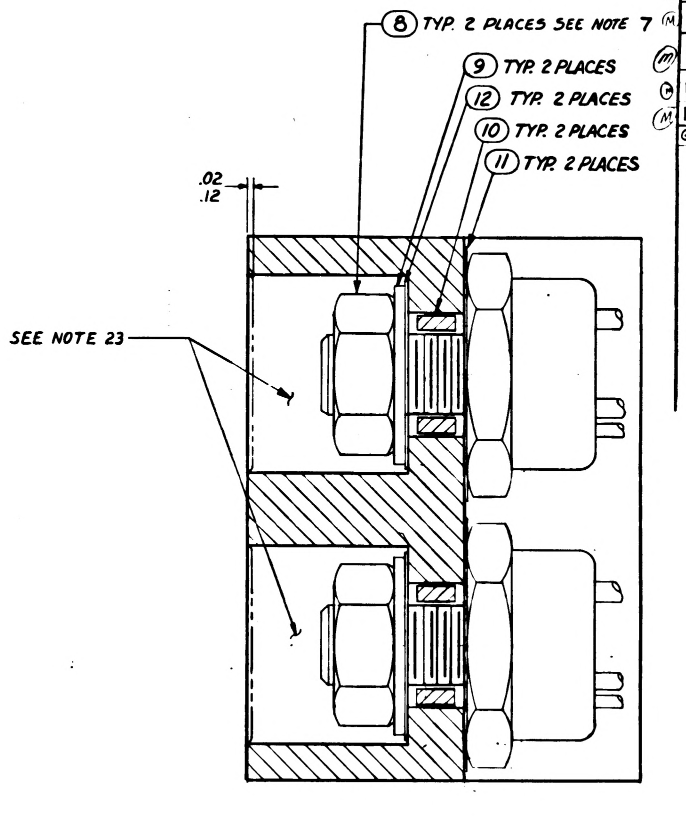
CODE IDENT NO. 80230
SIZE E
1007547
SCALE 2/1
SHEET 1 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 15496		1 FEB 65	J J J / E F
B		REVISED PER TDRR 16638		24 FEB 65	JWP / J.D.
C		REVISED PER TDRR-17313		12-MAR-65	J.B. / E F
D		REVISED PER TDRR 17610		24 MAR 65	MTO / C.P.
E		REVISED PER TDRR 17965		6 APR 65	J J J / MGM
F		REVISED PER TDRR 18514		27 APR 65	R.W.T. / AU
G		REVISED PER TDRR 19399		1 JUN 65	J.J. / W.T.



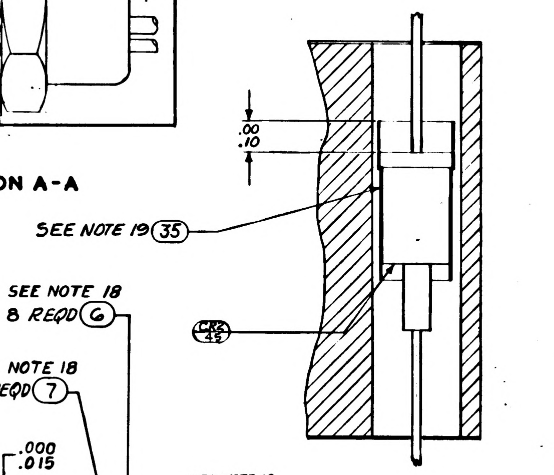
(13) 2 REQD SEE NOTE 6
(14)
Q3 30
C3 26
FT10
C4 26
A
C
B
E
K
YEL
BLU BLK
GRN
BRN
CR1 28
T1 33
(43) SEE NOTE 10
(42) SEE NOTE 10

VIEW A-A
BEFORE ENCAPSULATION



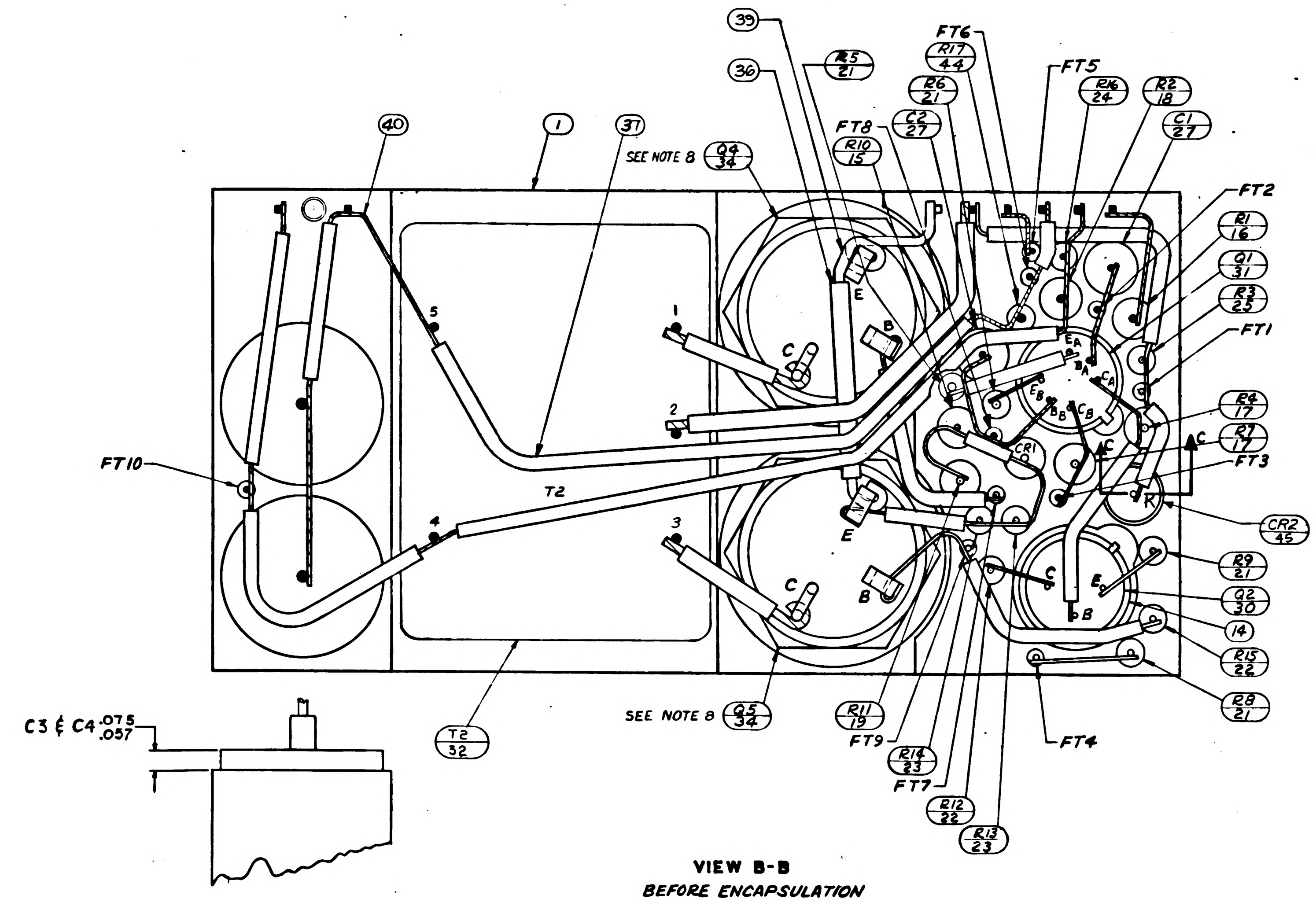
(8) TYP. 2 PLACES SEE NOTE 7
(9) TYP. 2 PLACES
(12) TYP. 2 PLACES
(10) TYP. 2 PLACES
(11) TYP. 2 PLACES
.02
.12
SEE NOTE 23

SECTION A-A

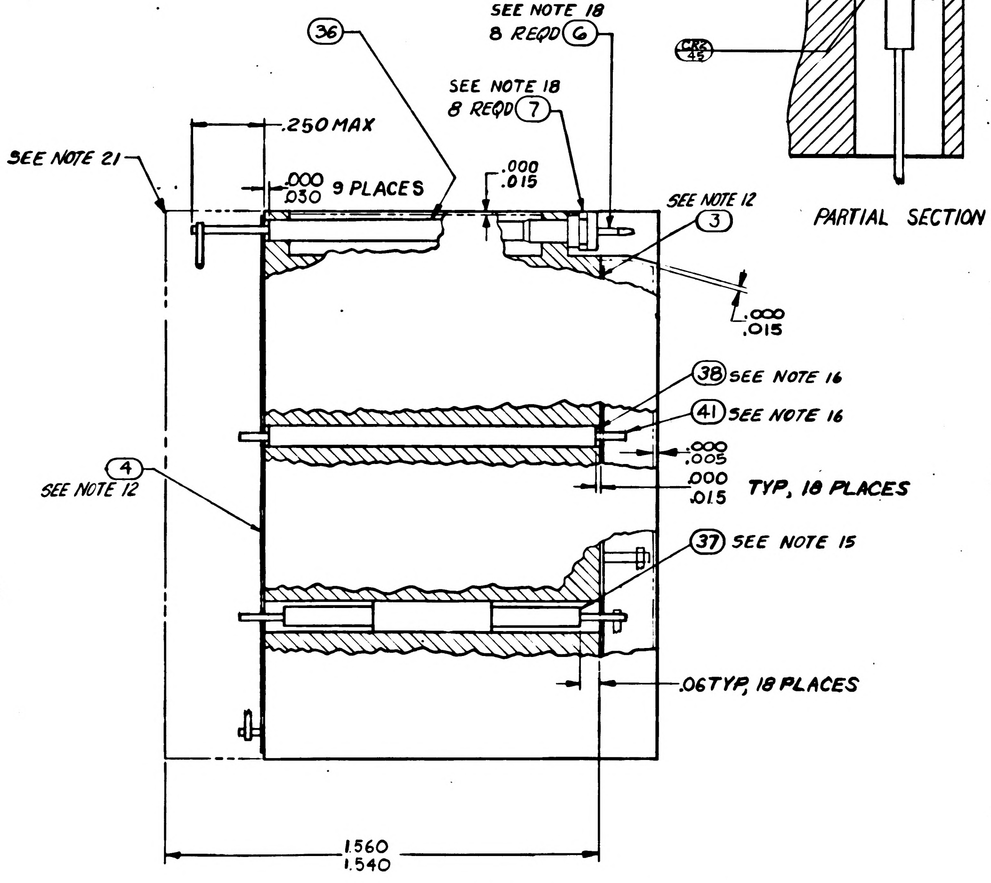


.00
.10
SEE NOTE 19 (35)
CR2 45

PARTIAL SECTION C-C



(39)
(36)
R5 21
FT6
R17 44
R6 21
FT5
R16 24
R2 18
(40)
(1)
(37)
SEE NOTE 8 Q4 34
FT8
C2 27
R10 15
C1 27
FT2
R1 16
Q1 31
R3 25
FT1
R4 17
R7 17
FT3
CR2 45
R9 21
Q2 30
(14)
R15 22
R8 21
FT4
FT10
T2
T2 32
SEE NOTE 8 Q5 34
R11 19
FT9
R14 23
FT7
R12 22
R13 23
CR1
C
E
B
K
1
2
3
4
5
C3 & C4 .075 .057



(36)
SEE NOTE 18 8 REQD (6)
SEE NOTE 18 8 REQD (7)
.250 MAX
SEE NOTE 21
.000 .030 9 PLACES
.000 .015
SEE NOTE 12 (3)
.000 .015
(38) SEE NOTE 16
(41) SEE NOTE 16
.000 .005
.000 .015 TYP. 18 PLACES
(4) SEE NOTE 12
(37) SEE NOTE 15
.06 TYP. 18 PLACES
1.560 1.540

VIEW B-B
BEFORE ENCAPSULATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + − DECIMALS + − ANGLES + −	M I T INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN Orgel DATE 25 SEP 64 CHECKED Adomack 30 OCT 64 APPROVAL APPROVAL	AMPLIFIER 1%-800CPS MODULE ASSEMBLY
MATERIAL	NASA APPROVAL 11-4-64 W. J. Kohr	CODE IDENT NO. 80230 SIZE E 1007547
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 5/1 SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 15496		FEB 65	EF
B		REVISED PER TDRR 16638		24 FEB 65	JWP
C		REVISED PER TDRR-17313		12 MAR 65	JB EF
D		REVISED PER TDRR 17610		24 MAR 65	NTO CHP
E		REVISED PER TDRR 17965		6 APR 65	
F		REVISED PER TDRR 18514		27 APR 65	AU
G		REVISED PER TDRR 19399		1 JUN 65	
H		REVISED PER TDRR 19441		3 JUN 65	EF

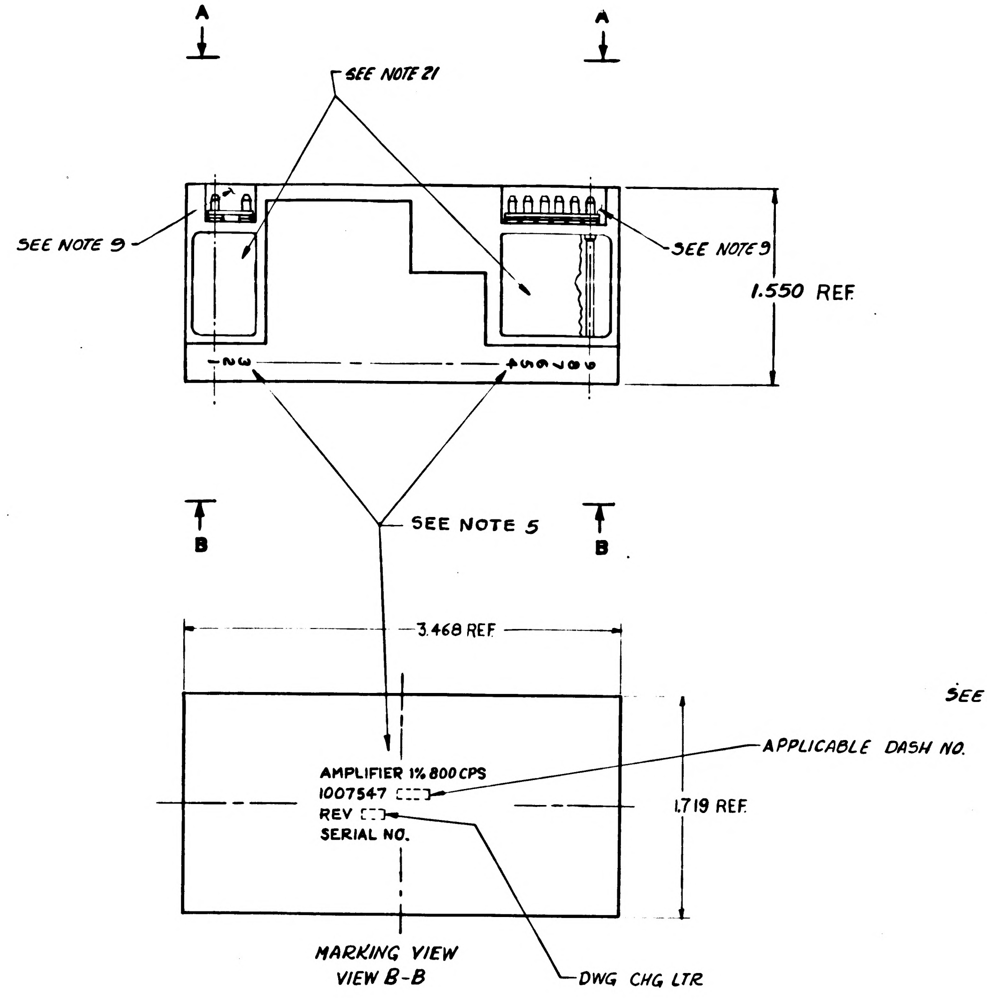
TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009 METHOD C
3. UNLESS OTHERWISE SPECIFIED:
   WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
4. ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005.
5. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
6. COAT THREADS AND ITEM 32 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
7. MOUNTING TORQUE FOR ITEM 8 24 IN-LBS ± 2 IN-LBS.
8. SOLDER PER ND 1002071
9. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. BOND ITEM NUMBERS 42 AND 43 TO ITEM 1 PER ND 1002237.
11. AR DENOTES AS REQUIRED
12. ON ITEMS 3 AND 4:

    K INDICATES CATHODE END.
    FT ( ) INDICATES FEED THRU.
    PLUS (+) INDICATES POSITVE END OF CAPACITOR.
    C - INDICATES COLLECTOR LEAD OF TRANSISTOR.
    B - BASE
    E - EMITTER
    C_A COLLECTOR
    B_A BASE
    E_A EMITTER
    C_B COLLECTOR
    B_B BASE
    E_B EMITTER
    MULTI STAGE TRANSISTOR.
13. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
14. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
15. TYPICAL SLEEVING FOR R3, R5, R6, R8 R9, R12, R13, R14, R15 AND R16
16. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT10.
17. VALUE OF R11 AND R17 TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007077 PARTS TO BE SELECTED FROM CHARTS, VALUE IS IN OHMS
18. ASSEMBLE PER ND 1002136.
19. BOND ITEM NO.35 TO ITEM NO.29. CURE AT AIR TEMPERATURE BEFORE ASSEMBLY TO ITEM NO.1
20. PROCURE PER PS 1007047.
21. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE, SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT 2.5, ½ WIDE
23. FILL PER ND 1002117
24. ~~BOND A .25 MIN WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
25. CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002137 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.



MARKING VIEW
VIEW B-B

SELECTION CHART FOR R11

PART NUMBER	VALUE
1010364-325	2430
329	2550
337	2800
343	3010
351	3320
355	3480
361	3740
367	4020
371	4220
375	4420
377	4530
381	4750
385	4990
387	5110
391	5360
395	5620
399	5900
403	6190
405	6340
409	6650

SELECTION CHART FOR R17

PART NUMBER	VALUE
1006750-84	150K
-56	10K
-49	5.1K
-44	3.3K
-41	2.4K
-38	1.8K
-36	1.5K
-34	1.2K
-32	1.0K
-30	820
-29	750
-27	620
-25	510
-23	430
-22	390
-20	330
-18	270
-16	220

SEE NOTE 17 (item 44)
SEE NOTE 17 (item 19)

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
☒		REF	1009525	SCHEMATIC DIAGRAM ELECTRICAL
1		45	1010829-2	DIODE
1		44	1006750-	RESISTOR, FIXED
1		43	1008540-3	GASKET, CONNECTOR, MINAT.
1		42	1008540-6	GASKET, CONNECTOR, MINAT.
AR		41	1006757-8	WIRE, ELECTRICAL .020 DIA
AR		40	1006757-1	WIRE, ELECTRICAL .010 × .020
AR		39	1006757-9	WIRE, ELECTRICAL .032 DIA
AR		38	-22	INSULATION SLEEVING, ELECTRICAL
AR		37	-21	INSULATION SLEEVING, ELECTRICAL
AR		36	1006776-20	INSULATION SLEEVING, ELECTRICAL
AR		35	SEE NOTE 22	INSULATION TAPE, ELECTRICAL
1		34	1010273-3	TRANSISTOR (MATCHED PAIR)
1		33	1010324	TRANSFORMER
1		32	1010307	TRANSFORMER
1		31	1010431	TRANSISTOR
1		30	1010345-2	TRANSISTOR (MATCHED PAIR)
~~1~~		29	~~1010265-2~~	~~SEMICONDUCTOR DEVICE, DIODE~~
1		28	1010372-15	SEMICONDUCTOR DEVICE, DIODE
2		27	1010264-9	CAPACITOR, FIXED
2		26	1010264-37	CAPACITOR, FIXED
1		25	-57	
1		24	-56	
2		23	-25	
2		22	-12	
4		21	1006750-1	
~~2~~		~~20~~	~~1010369-1~~	
1		19	1010364-	
1		18	-573	
2		17	-327	
1		16	-309	
1		15	1010364-273	RESISTOR, FIXED
2		14	1008025-2	INSULATOR, BUSHING
2		13	1000093-13	SCREW
2		12	1008024-4	WASHER, INSULATOR
2		11	1008024-3	WASHER, INSULATOR
2		10	1008021-2	BUSHING, INSULATOR
2		9	1008071-5	WASHER, FLAT
2		8	MS20341-416B	NUT
8		7	1006775	INSULATOR
8		6	1006782-5	CONTACT, WRAPOST-MALE
		5		
1		4	1008308	
1		3	1008307	INSULATOR
		2		
1		1	1008306	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO
1007572		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS .XX ±.02 .XXX ±.005 ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Oxzer DATE 26 SEP 64
CHECKED a Ulmrich 3 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

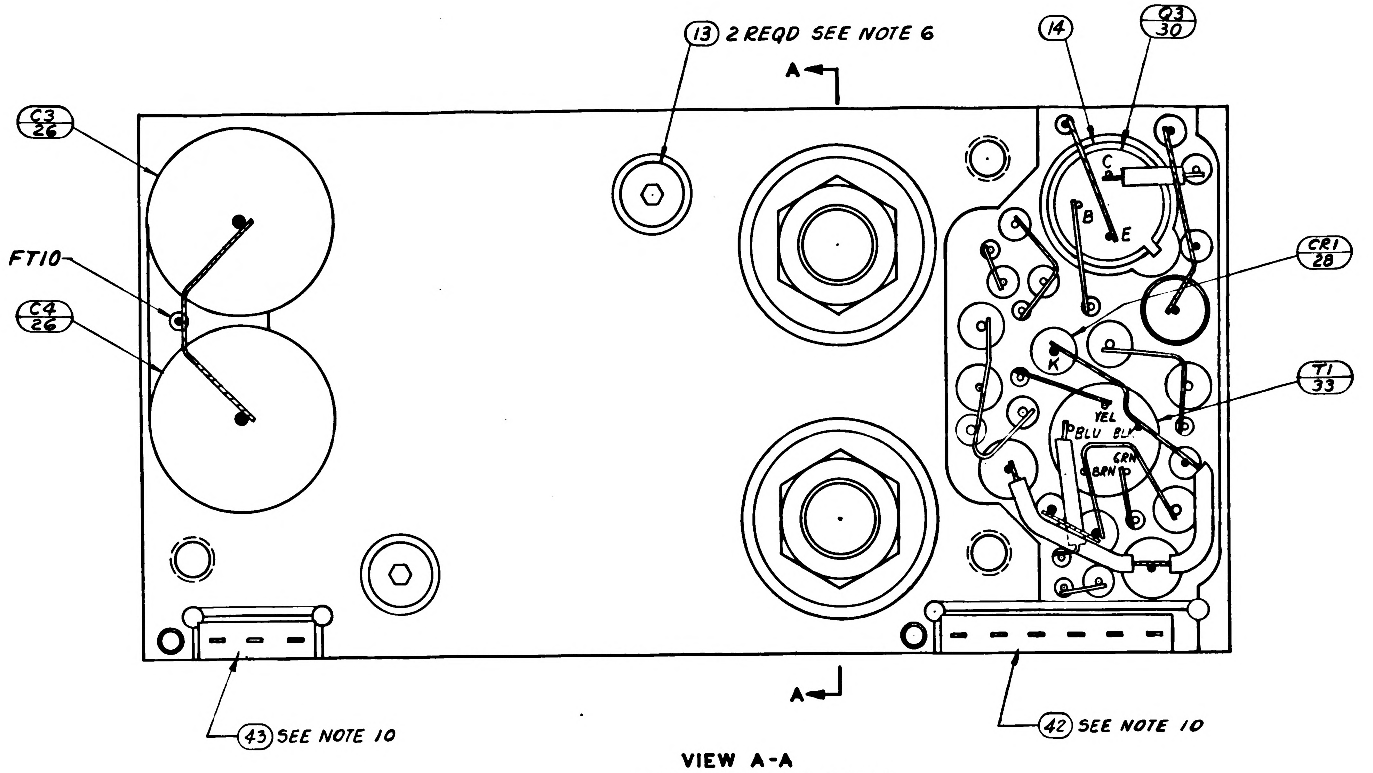
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

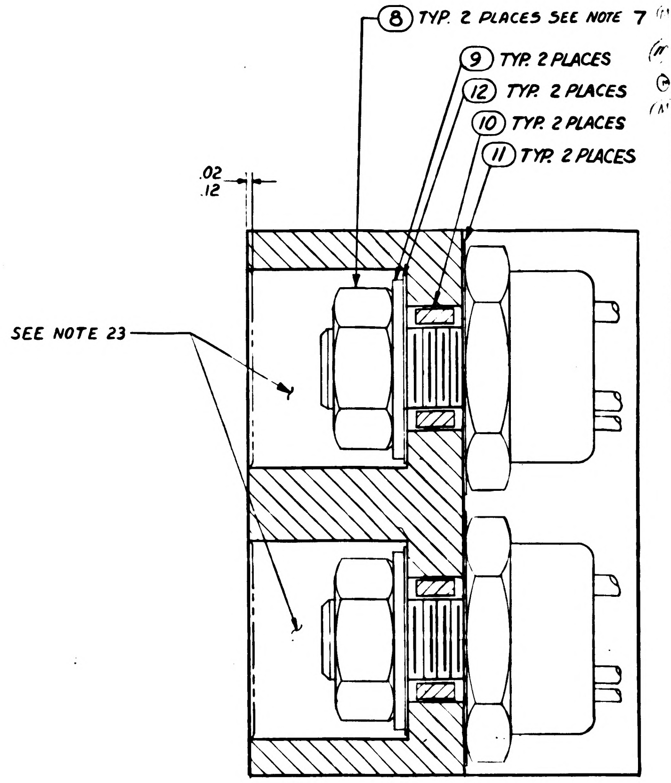
CODE IDENT NO 80230
SIZE E
1007547
SCALE 2/1
SHEET 1 OF 2

1007547 H

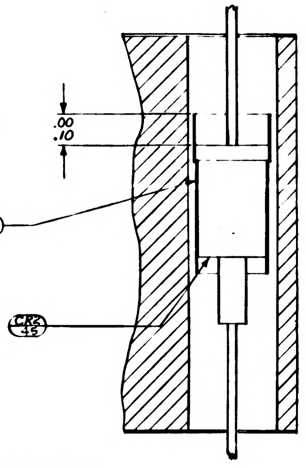
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 15496		FEB 65	
B		REVISED PER TDRR 16638		24 FEB 65	JWP
C		REVISED PER TDRR-17313		12-MAR-65	B.
D		REVISED PER TDRR 17610		24 MAR 65	MTO CHP
E		REVISED PER TDRR 17965		6 APR 65	JJJ
F		REVISED PER TDRR 18514		27 APR 65	R.W.T.
G		REVISED PER TDRR 19399		1 JUN 65	
H		REVISED PER TDRR 19441		3 JUN 65	


13 2 REQD SEE NOTE 6
A
14
Q3 30
C3 26
FT10
C4 26
C
B
E
K
YEL
BLU
BLK
GRN
BRN
CR1 28
T1 33
A
43 SEE NOTE 10
42 SEE NOTE 10

VIEW A-A
BEFORE ENCAPSULATION

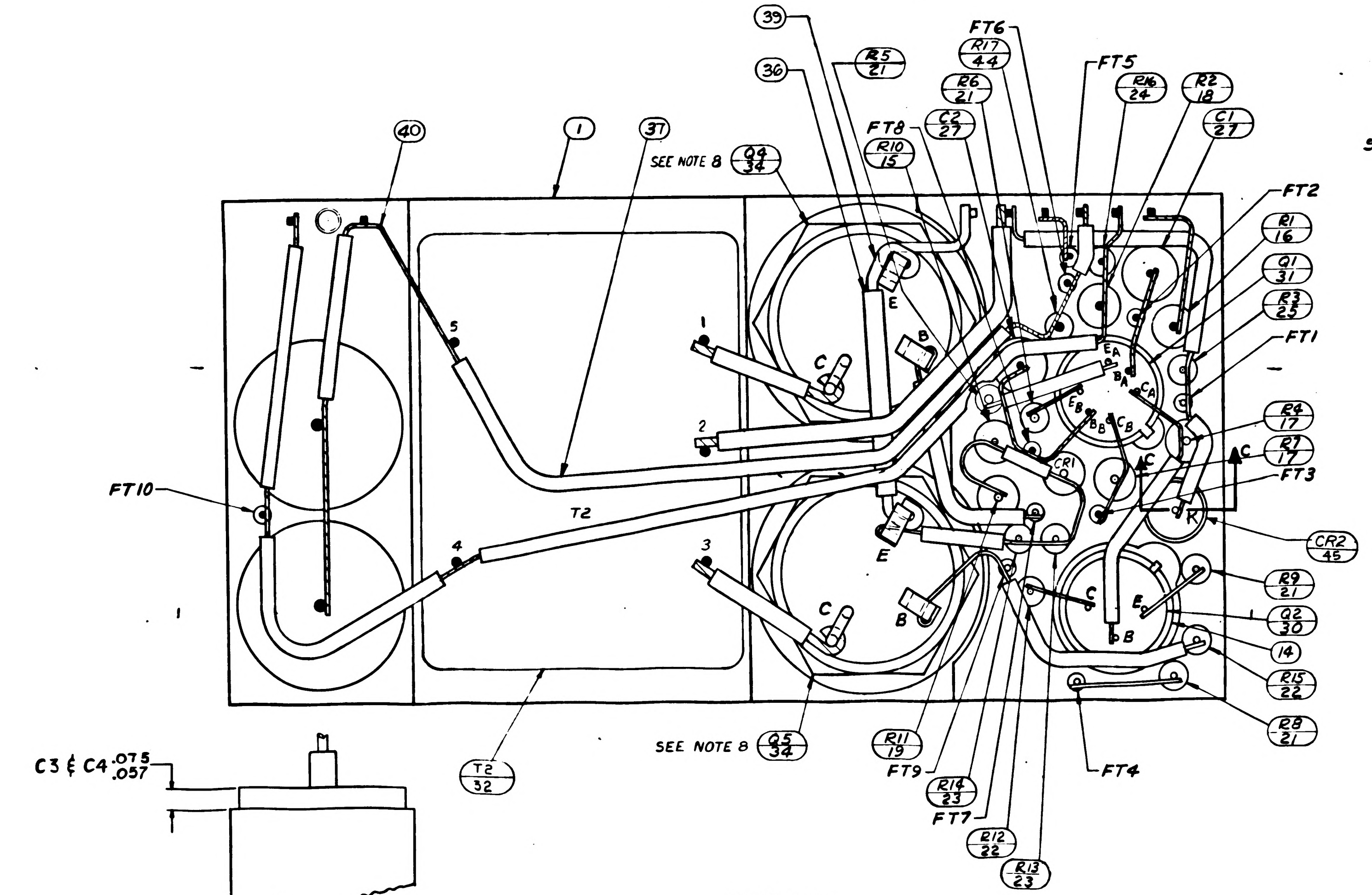

8 TYP. 2 PLACES SEE NOTE 7
9 TYP. 2 PLACES
12 TYP. 2 PLACES
10 TYP. 2 PLACES
11 TYP. 2 PLACES
.02
.12
SEE NOTE 23

SECTION A-A

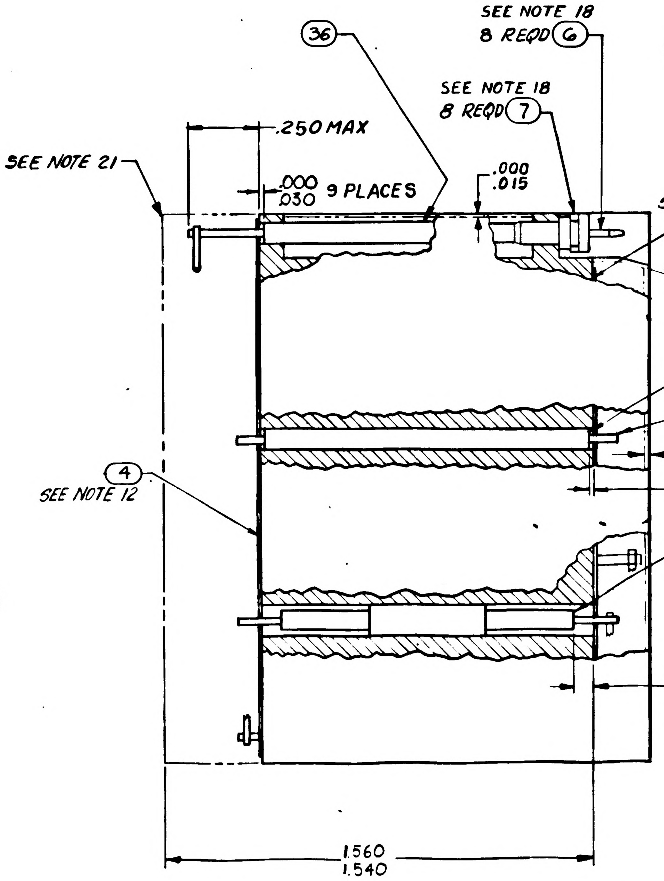


SEE NOTE 19 (35)

PARTIAL SECTION C-C


39
36
R5 21
R17 44
FT6
FT5
R6 21
R16 24
R2 18
C2 27
C1 27
FT8
R10 15
40
1
37
SEE NOTE 8
Q4 34
FT2
R1 16
Q1 31
R3 25
FT1
E
B
C
1
2
3
4
5
T2
EA
BA
CA
EB
BB
CB
CR1
K
C
R4 17
R7 17
FT3
FT10
CR2 45
R9 21
Q2 30
14
R15 22
R8 21
E
C
B
T2 32
SEE NOTE 8
Q5 34
R11 19
FT9
R14 23
FT7
R12 22
R13 23
FT4
C3 & C4 .075 .057

VIEW B-B
BEFORE ENCAPSULATION


36
SEE NOTE 18
8 REQD 6
SEE NOTE 18
8 REQD 7
SEE NOTE 21
.250 MAX
.000 .030 9 PLACES
.000 .015
SEE NOTE 12
3
.000 .015
38 SEE NOTE 16
41 SEE NOTE 16
.000 .005
.000 .015 TYP, 18 PLACES
4 SEE NOTE 12
37 SEE NOTE 15
.06 TYP, 18 PLACES
1.560 1.540

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ±	M I T INSTRUMENTATION LAB CAMBRIDGE, MASS.	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DO NOT SCALE THIS DRAWING	DRAWN Orzel DATE 25 SEP 64 CHECKED Udonch 3 OCT 64 APPROVAL APPROVAL	AMPLIFIER 1% - 800 CPS MODULE ASSEMBLY	
MATERIAL	NASA APPROVAL	CODE IDENT NO. 80230	SIZE E · 1007547
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 5/1	SHEET 2 OF 2

1007547

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE, 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ±.03 OF EXTERNAL EDGE

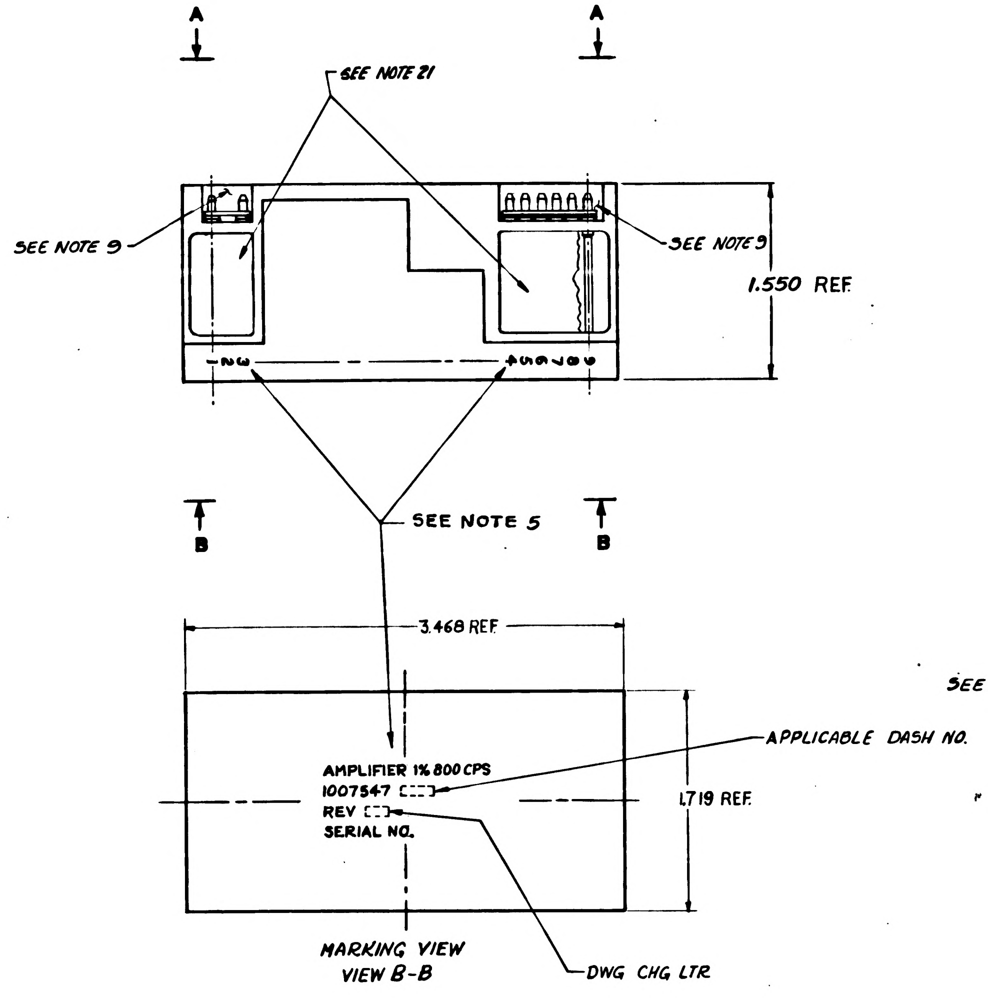
REVISIONS

	SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
Ⓜ	A		REVISED PER TDRR 15496		1 FEB 65	JJ
Ⓜ	B		REVISED PER TDRR 16638		24 FEB 65	WP
Ⓜ	C		REVISED PER TDRR-17313		12 MAR 65	[illegible]
Ⓜ	D		REVISED PER TDRR 17610		24 MAR 65	[illegible]
Ⓜ	E		REVISED PER TDRR 17965		6 APR 65	JJ
Ⓜ	F		REVISED PER TDRR 18514		27 APR 65	[illegible]
	G		REVISED PER TDRR 19399		[illegible] JUNE	[illegible]
	H		REVISED PER TDRR 944[illegible]		[illegible]	[illegible]
	J		REVISED PER TDRR 9568		4 JUNE [illegible]	[illegible]

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009 METHOD H.
3. UNLESS OTHERWISE SPECIFIED:
   WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
4. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005.
5. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. COAT THREADS AND ITEM 32 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
7. MOUNTING TORQUE FOR ITEM 8 24 IN-LBS ± 2 IN-LBS.
8. SOLDER PER ND1002071
9. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. BOND ITEM NUMBERS 42 AND 43 TO ITEM 1 PER ND1002237.
11. AR DENOTES AS REQUIRED
12. ON ITEMS 3 AND 4:

    K INDICATES CATHODE END.
    FT ( ) INDICATES FEED THRU.
    PLUS (+) INDICATES POSITVE END OF CAPACITOR.
    C - INDICATES COLLECTOR LEAD OF TRANSISTOR.
    B- BASE
    E- EMITTER
    C_A COLLECTOR
    B_A BASE
    E_A EMITTER
    C_B COLLECTOR
    B_B BASE
    E_B EMITTER
    MULTI STAGE TRANSISTOR.
13. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
14. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
15. TYPICAL SLEEVING FOR R3, R5, R6, R8 R9, R12, R13, R14, R15 AND R16
16. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT10.
17. VALUE OF R11 AND R17 TO BE DETERMINED BY ELECTRICAL TEST PER ATP1007077 PARTS TO BE SELECTED FROM CHARTS, VALUE IS IN OHMS.
18. ASSEMBLE PER ND1002136.
19. BOND ITEM NO.35 TO ITEM NO.29. CURE AT AIR TEMPERATURE BEFORE ASSEMBLY TO ITEM NO.1
20. PROCURE PER PS1007047.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE, SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT 2.5, ½ WIDE
23. FILL PER ND1002117
24. ~~BOND A .25 MIN WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
26. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.
27. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.



MARKING VIEW
VIEW B-B

SELECTION CHART FOR R11

PART NUMBER	VALUE
1010364-325	2430
329	2550
337	2800
343	3010
351	3320
355	3480
361	3740
367	4020
371	4220
375	4420
377	4530
381	4750
385	4990
387	5110
391	5360
395	5620
399	5900
403	6190
405	6340
409	6650

SELECTION CHART FOR R17

PART NUMBER	VALUE
1006750-84	150K
-56	10K
-49	5.1K
-44	3.3K
-41	2.4K
-38	1.8K
-36	1.5K
-34	1.2K
-32	1.0K
-30	820
-29	750
-27	620
-25	510
-23	430
-22	390
-20	330
-18	270
-16	220

SEE NOTE 17

SEE NOTE 17

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			☒		REF	1009525	SCHEMATIC DIAGRAM ELECTRICAL
			1		45	1010829-2	DIODE
			1		44	1006750-	RESISTOR, FIXED
			1		43	1008540-3	GASKET, CONNECTOR, MINAT.
			1		42	1008540-6	GASKET, CONNECTOR, MINAT.
			AR		41	1006757-8	WIRE, ELECTRICAL .020 DIA
			AR		40	1006757-1	WIRE, ELECTRICAL .010 × .020
			AR		39	1006757-9	WIRE, ELECTRICAL .032 DIA
			AR		38	-22	INSULATION SLEEVING, ELECTRICAL
			AR		37	-21	INSULATION SLEEVING, ELECTRICAL
			AR		36	1006776-20	INSULATION SLEEVING, ELECTRICAL
			AR		35	SEE NOTE 22	INSULATION TAPE, ELECTRICAL
			1		34	1010273-3	TRANSISTOR (MATCHED PAIR)
			1		33	1010324	TRANSFORMER
			1		32	1010307	TRANSFORMER
			1		31	1010431	TRANSISTOR
			1		30	1010345-2	TRANSISTOR (MATCHED PAIR)
			~~1~~		29	~~1010265-2~~	~~SEMICONDUCTOR DEVICE, DIODE~~
			1		28	1010372-15	SEMICONDUCTOR DEVICE, DIODE
			2		27	1010264-9	CAPACITOR, FIXED
			2		26	1010264-37	CAPACITOR, FIXED
			1		25	-57	
			1		24	-56	
			2		23	-25	
			2		22	-12	
			4		21	1006750-1	
			~~2~~		~~20~~	~~1010369-1~~	
			1		19	1010364-	
			1		18	-573	
			2		17	-327	
			1		16	-309	
			1		15	1010364-273	RESISTOR, FIXED
			2		14	1008025-2	INSULATOR, BUSHING
			2		13	1000093-13	SCREW
			2		12	1008024-4	WASHER, INSULATOR
			2		11	1008024-3	WASHER, INSULATOR
			2		10	1008021-2	BUSHING, INSULATOR
			2		9	1008071-5	WASHER, FLAT
			2		8	MS20341-416B	NUT
			8		7	1006775	INSULATOR
			8		6	1006782-5	CONTACT, WRAPOST-MALE
					5		
			~~1~~		~~4~~	~~1008308~~	
			~~1~~		~~3~~	~~1008307~~	~~INSULATOR~~
					2		
			1		1	1008306	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007572		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ .XX ±.02 +
- .XXX ±.005 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

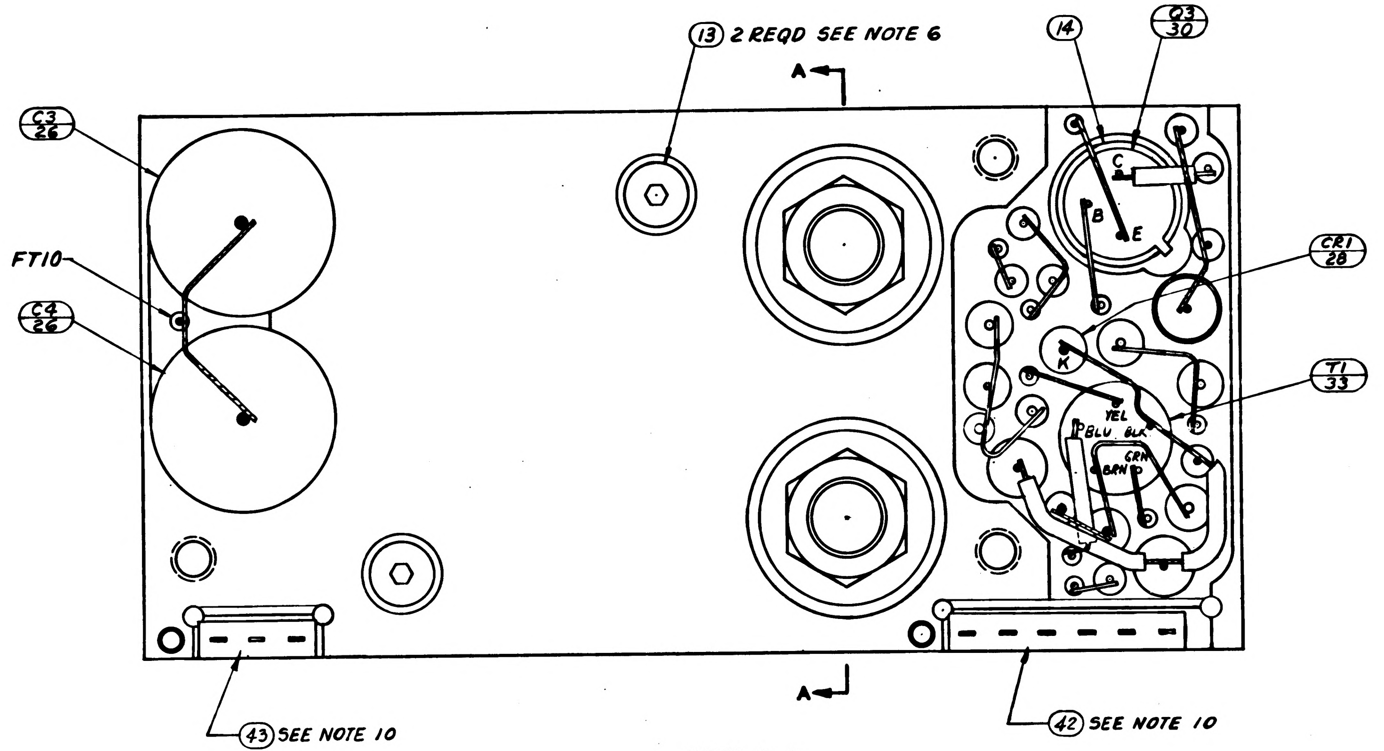
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Oegel DATE 26 SEP 64
CHECKED 3 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

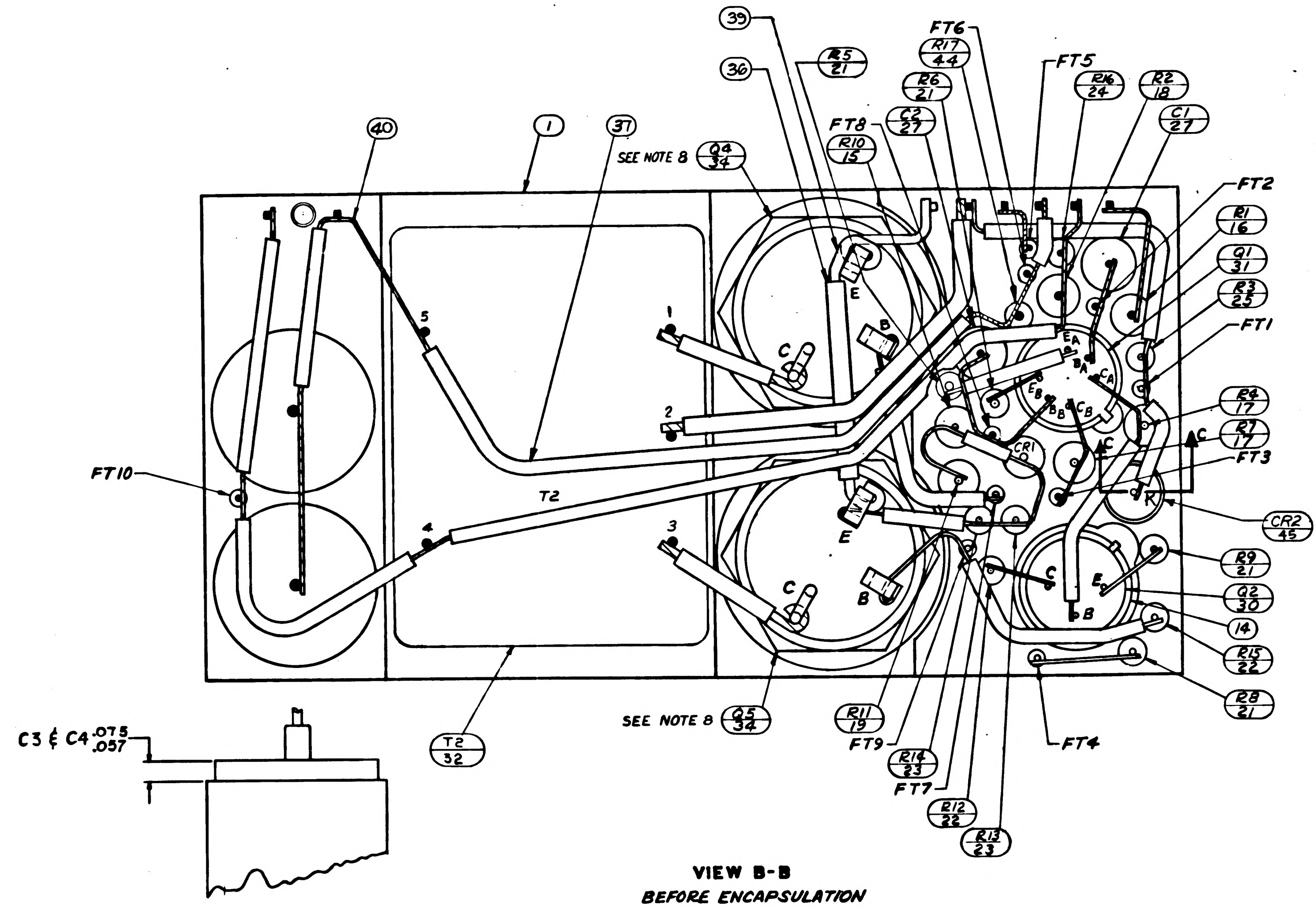
CODE IDENT NO. 80230
SIZE E
1007547
SCALE 2/1
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 15496		1 FEB 65	JJJ
B		REVISED PER TDRR 16638		24 FEB 65	JWP
C		REVISED PER TDRR-173		12-JAN-65	B.
D		REVISED PER TDRR 17610		24 MAR 65	MTO
E		REVISED PER TDRR 17965		6 APR 65	JJJ
F		REVISED PER TDRR 18514		[illegible] 65	W.T
G		REVISED PER TDRR 19399		[illegible]	[illegible]
H		REVISED PER TDRR 19441		[illegible]	[illegible]
J		REVISED PER TDRR 19568		[illegible]	[illegible]



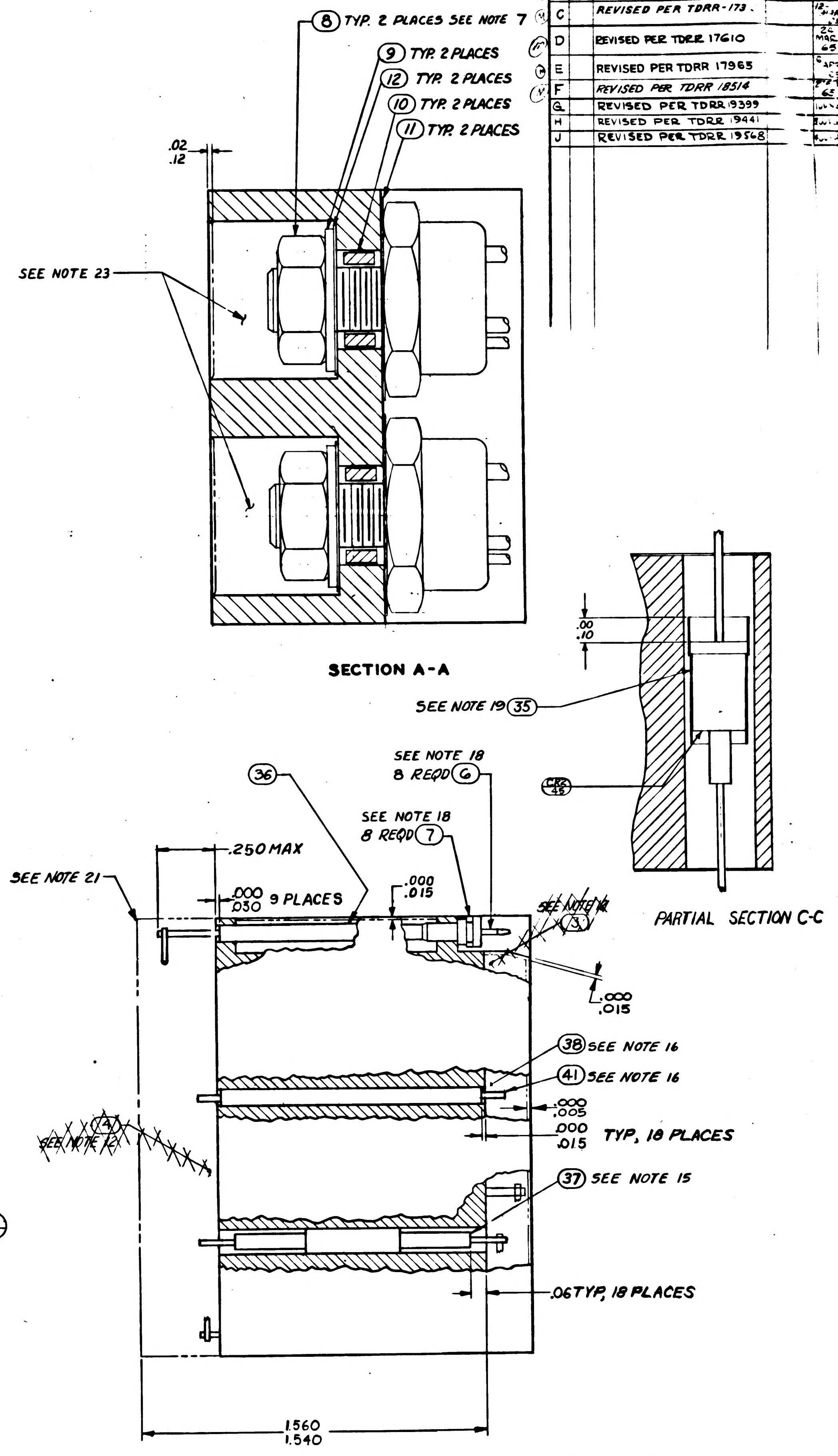
13 2 REQD SEE NOTE 6
A
C3 26
FT10
C4 26
14
Q3 30
C
B
E
CR1 28
K
YEL
BLU
BLK
GRN
BRN
T1 33
A
43 SEE NOTE 10
42 SEE NOTE 10

VIEW A-A
BEFORE ENCAPSULATION



39
38
R5 21
R17 44
FT6
FT5
R16 24
R2 18
FT8
C2 27
R6 21
C1 27
40
1
37
SEE NOTE 8
Q4 34
R10 15
FT2
R1 16
Q1 31
R3 25
FT1
5
1
2
3
4
E
C
B
T2
FT10
CR1
R4 17
R7 17
C
FT3
CR2 45
R9 21
Q2 30
14
R15 22
R28 21
SEE NOTE 8
Q5 34
T2 32
R11 19
FT9
R14 23
FT7
R12 22
R13 23
FT4
C3 & C4 .075 .057

VIEW B-B
BEFORE ENCAPSULATION



8 TYP. 2 PLACES SEE NOTE 7
9 TYP. 2 PLACES
12 TYP. 2 PLACES
10 TYP. 2 PLACES
11 TYP. 2 PLACES
.02 .12
SEE NOTE 23
SECTION A-A
.00 .10
SEE NOTE 19 35
CR2 45
PARTIAL SECTION C-C
36
SEE NOTE 18 8 REQD 6
SEE NOTE 18 8 REQD 7
.250 MAX
SEE NOTE 21
.000 .030 9 PLACES
.000 .015
SEE NOTE 14 3
.000 .015
38 SEE NOTE 16
41 SEE NOTE 16
.000 .005
.000 .015 TYP, 18 PLACES
SEE NOTE 14
37 SEE NOTE 15
.06 TYP, 18 PLACES
1.560 1.540

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + − DECIMALS + − ANGLES + −	MIT INSTRUMENTATION LAB CAMBRIDGE MASS DRAWN DATE 25 SEP 64 CHECKED 3 OCT 64 APPROVAL APPROVAL	MANNED SPACECRAFT CENTER HOUSTON, TEXAS AMPLIFIER 1%-800 CPS MODULE ASSEMBLY
DO NOT SCALE THIS DRAWING MATERIAL	NASA APPROVAL 11-8-64	CODE IDENT NO. 80230 SIZE E 1007547
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 5/1 SHEET 2 OF 2

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

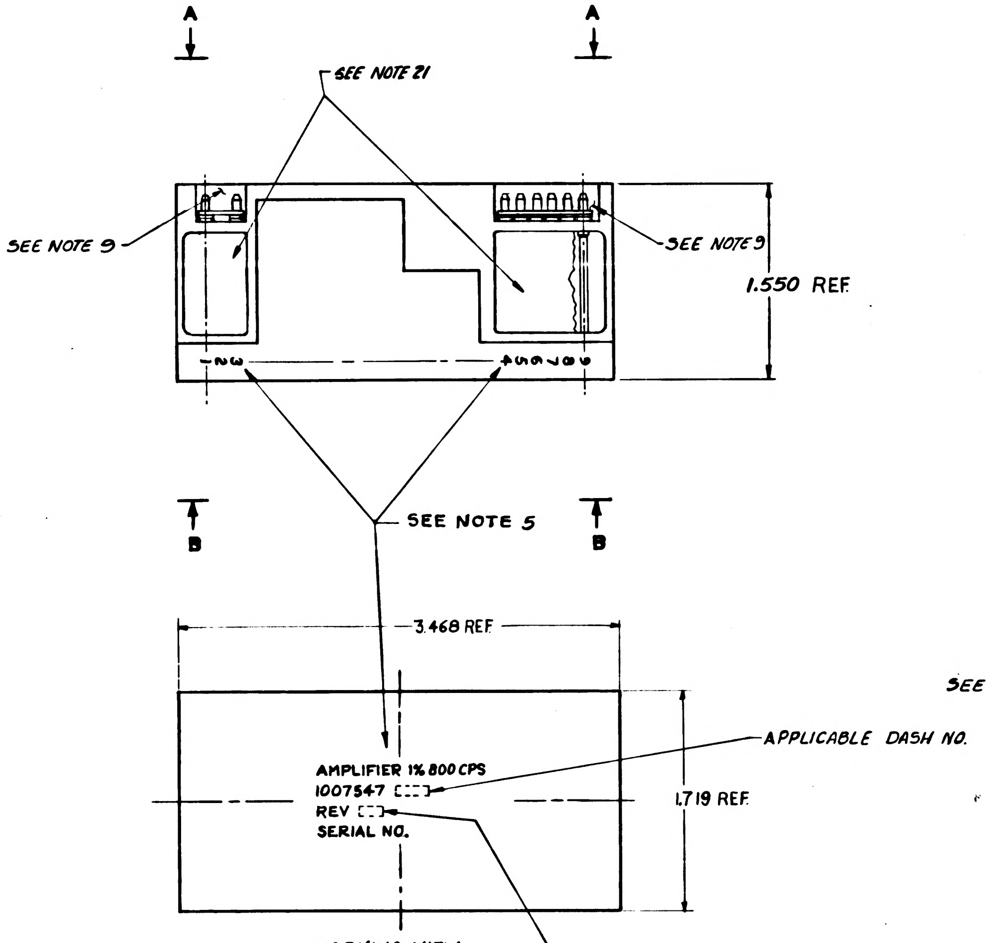
REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 15496		[illegible]	JJ
B		REVISED PER TDRR 16638		24 FEB	JP
C		REVISED PER TDRR-17313		12 MAR 65	[illegible]
D		REVISED PER TDRR 17610		24 MAR	[illegible]
E		REVISED PER TDRR 17965		[illegible]	[illegible]
F		REVISED PER TDRR 18514		[illegible]	[illegible]
G		REVISED PER TDRR 9399		AUG	[illegible]
H		REVISED PER TDRR 944.		3 JUN	[illegible]
J		REVISED PER TDRR 9508		[illegible]	[illegible]
K		REVISED PER TDRR 20143		13 JUL 65	KD

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009 METHOD H.
3. UNLESS OTHERWISE SPECIFIED:
   WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
4. ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005.
5. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
6. COAT THREADS AND ITEM 32 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
7. MOUNTING TORQUE FOR ITEM 8 24 IN-LBS ± 2 IN-LBS.
8. SOLDER PER ND 1002071
9. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. ~~BOND ITEM NUMBERS 42 AND 43 TO ITEM 1 PER ND1002237.~~
11. AR DENOTES AS REQUIRED
12. ON ITEMS 3 AND 4:

    K INDICATES CATHODE END.
    FT ( ) INDICATES FEED THRU.
    PLUS (+) INDICATES POSITVE END OF CAPACITOR.
    C - INDICATES COLLECTOR LEAD OF TRANSISTOR.
    B - BASE
    E - EMITTER
    C_A COLLECTOR
    B_A BASE
    E_A EMITTER
    C_B COLLECTOR
    B_B BASE
    E_B EMITTER
    MULTI STAGE TRANSISTOR.
13. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
14. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
15. TYPICAL SLEEVING FOR R3, R5, R6, R8 R9, R12, R13, R14, R15 AND R16
16. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT10.
17. VALUE OF R11 AND R17 TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007077 PARTS TO BE SELECTED FROM CHARTS, VALUE IS IN OHMS.
18. ASSEMBLE PER ND 1002136.
19. BOND ITEM NO.35 TO ITEM NO.29. CURE AT AIR TEMPERATURE BEFORE ASSEMBLY TO ITEM NO.1
20. PROCURE PER PS 1007047.
21. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE, SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT 2.5, ½ WIDE
23. FILL PER ND 1002117
24. ~~BOND A .25 MIN WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
26. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.
27. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.



MARKING VIEW
VIEW B-B

SELECTION CHART FOR R11

PART NUMBER	VALUE
1010364-325	2430
329	2550
337	2800
343	3010
351	3320
355	3480
361	3740
367	4020
371	4220
375	4420
377	4530
381	4750
385	4990
387	5110
391	5360
395	5620
399	5900
403	6190
405	6340
409	6650

SELECTION CHART FOR R17

PART NUMBER	VALUE
1006750-84	150K
-56	10K
-49	5.1K
-44	3.3K
-41	2.4K
-38	1.8K
-36	1.5K
-34	1.2K
-32	1.0K
-30	820
-29	750
-27	620
-25	510
-23	430
-22	390
-20	330
-18	270
-16	220

SEE NOTE 17 (item 44)
SEE NOTE 17 (item 19)

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			X		REF	1009525	SCHEMATIC DIAGRAM ELECTRICAL
			1		45	1010829-2	DIODE
			1		44	1006750-	RESISTOR, FIXED
			1		43	1008540-3	GASKET, CONNECTOR, MINAT.
			1		42	1008540-6	GASKET, CONNECTOR, MINAT.
			AR		41	1006757-8	WIRE, ELECTRICAL .020 DIA
			AR		40	1006757-1	WIRE, ELECTRICAL .010 × .020
			AR		39	1006757-9	WIRE, ELECTRICAL .032 DIA
			AR		38	-22	INSULATION SLEEVING, ELECTRICAL
			AR		37	-21	INSULATION SLEEVING, ELECTRICAL
			AR		36	1006776-20	INSULATION SLEEVING, ELECTRICAL
			AR		35	SEE NOTE 22	INSULATION TAPE, ELECTRICAL
			1		34	1010273-3	TRANSISTOR (MATCHED PAIR)
			1		33	1010324	TRANSFORMER
			1		32	1010307	TRANSFORMER
			1		31	1010431	TRANSISTOR
			1		30	1010345-2	TRANSISTOR (MATCHED PAIR)
			~~1~~		~~29~~	~~1010265-2~~	~~SEMICONDUCTOR DEVICE, DIODE~~
			1		28	1010372-15	SEMICONDUCTOR DEVICE, DIODE
			2		27	1010264-9	CAPACITOR, FIXED
			2		26	1010264-37	CAPACITOR, FIXED
			1		25	-57	
			1		24	-56	
			2		23	-25	
			2		22	-12	
			4		21	1006750-1	
			~~2~~		~~20~~	~~1010369-1~~	
			1		19	1010364-	
			1		18	-573	
			2		17	-327	
			1		16	-309	
			1		15	1010364-273	RESISTOR, FIXED
			2		14	1008025-2	INSULATOR, BUSHING
			2		13	1000093-13	SCREW
			2		12	1008024-4	WASHER, INSULATOR
			2		11	1008024-3	WASHER, INSULATOR
			2		10	1008021-2	BUSHING, INSULATOR
			2		9	1008071-5	WASHER, FLAT
			2		8	MS20341-416B	NUT
			8		7	1006775	INSULATOR
			8		6	1006782-5	CONTACT, WRAPOST-MALE
					5		
			~~1~~		~~4~~	~~1008308~~	
			~~1~~		~~3~~	~~1008307~~	~~INSULATOR~~
					2		
			1		1	1008306	HEATSINK

1007572		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

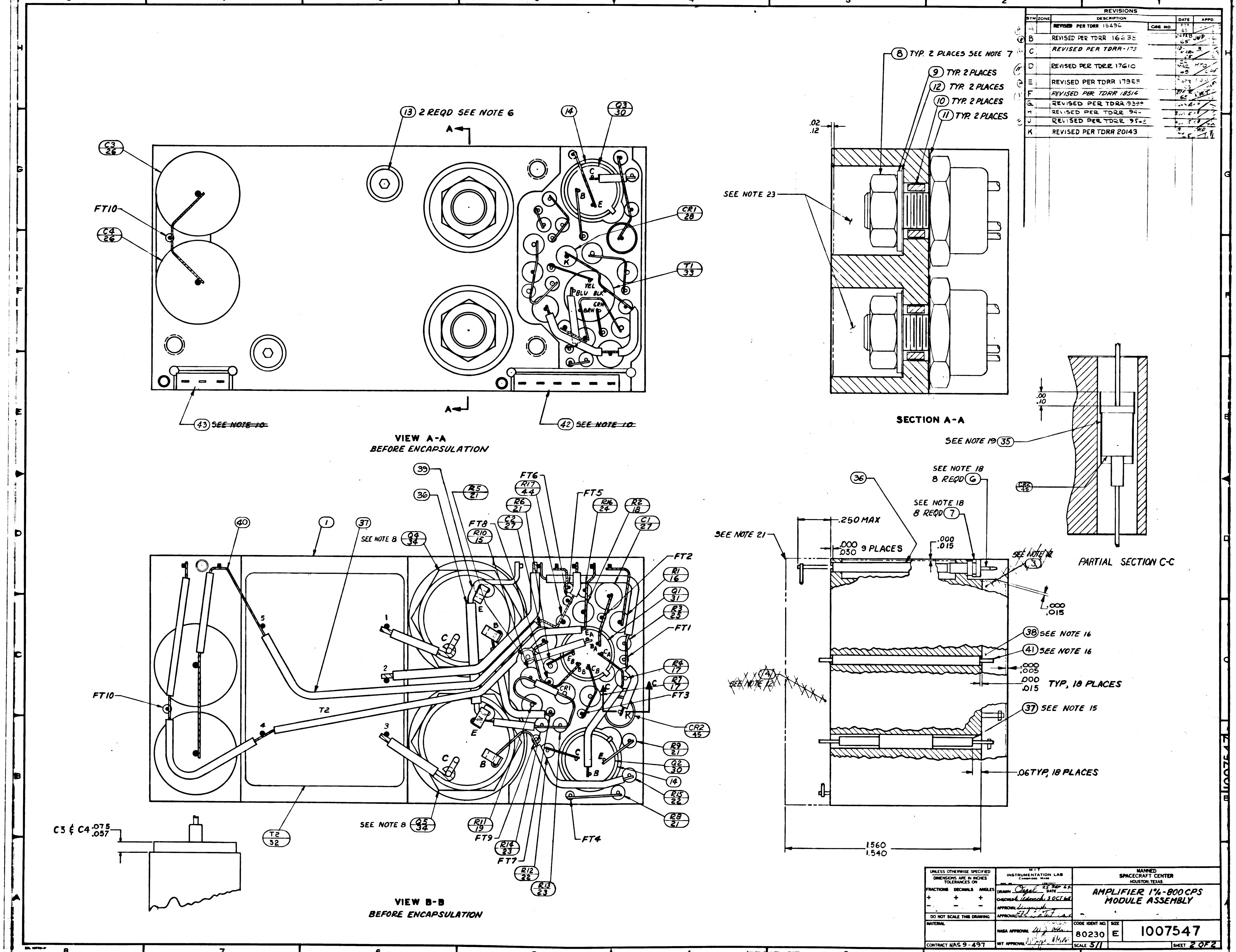
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS .XX ±.02 .XXX ±.005 ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN 26 SEP 64 DATE
CHECKED 3 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

CODE IDENT NO. 80230 SIZE E 1007547
SCALE 2/1 SHEET 1 OF 2


13 2 REQD SEE NOTE 6
14
Q3 30
A
C3 26
FT10
C4 26
CR1 28
T1 33
C
B
E
K
YEL
BLU
BLK
GRN
BRN
43 ~~SEE NOTE 10~~
42 ~~SEE NOTE 10~~
8 TYP. 2 PLACES SEE NOTE 7
9 TYP. 2 PLACES
12 TYP. 2 PLACES
10 TYP. 2 PLACES
11 TYP. 2 PLACES
.02
.12
SEE NOTE 23
.00
.10
SEE NOTE 19 35
CR2 45
39
36
R5 21
FT6
R17 44
FT5
R6 21
R16 24
R2 18
FT8
C2 27
C1 27
1
37
SEE NOTE 8 Q4 34
R10 15
40
FT2
R1 16
Q1 31
R3 25
FT1
1
2
3
4
5
T2
EA
BA
CA
EB
BB
CB
CR1
R4 17
R7 17
FT3
CR2 45
R9 21
Q2 30
14
R15 22
R8 21
FT4
SEE NOTE 8 Q5 34
R11 19
FT9
R14 23
FT7
R12 22
R13 23
T2 32
C3 & C4 .075 .057
36
SEE NOTE 18 8 REQD 6
SEE NOTE 18 8 REQD 7
.250 MAX
SEE NOTE 21
.000 .030 9 PLACES
.000 .015
SEE NOTE 12 3
.000 .015
38 SEE NOTE 16
41 SEE NOTE 16
.000 .005
.000 .015 TYP, 18 PLACES
4 SEE NOTE 12
37 SEE NOTE 15
.06 TYP, 18 PLACES
1.560
1.540
8 7 6 5 4 3 2 1
H G F E D C B A

VIEW A-A
BEFORE ENCAPSULATION

SECTION A-A

PARTIAL SECTION C-C

VIEW B-B
BEFORE ENCAPSULATION

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 15496		FEB 65	[illegible]
B		REVISED PER TDRR 16635		24 FEB 65	JWP
C		REVISED PER TDRR-173		12 MAR 65	B.
D		REVISED PER TDRR 17610		22 MAR 65	HTO
E		REVISED PER TDRR 17965		APR 65	[illegible]
F		REVISED PER TDRR 18514		27 APR 65	R.W.T.
G		REVISED PER TDRR 19399		[illegible]	[illegible]
H		REVISED PER TDRR 194-		[illegible]	[illegible]
J		REVISED PER TDRR 195-3		[illegible]	[illegible]
K		REVISED PER TDRR 20143		19 [illegible] 65	WD

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orgel DATE 25 SEP 64
CHECKED Adomch 3 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1%-800CPS
MODULE ASSEMBLY

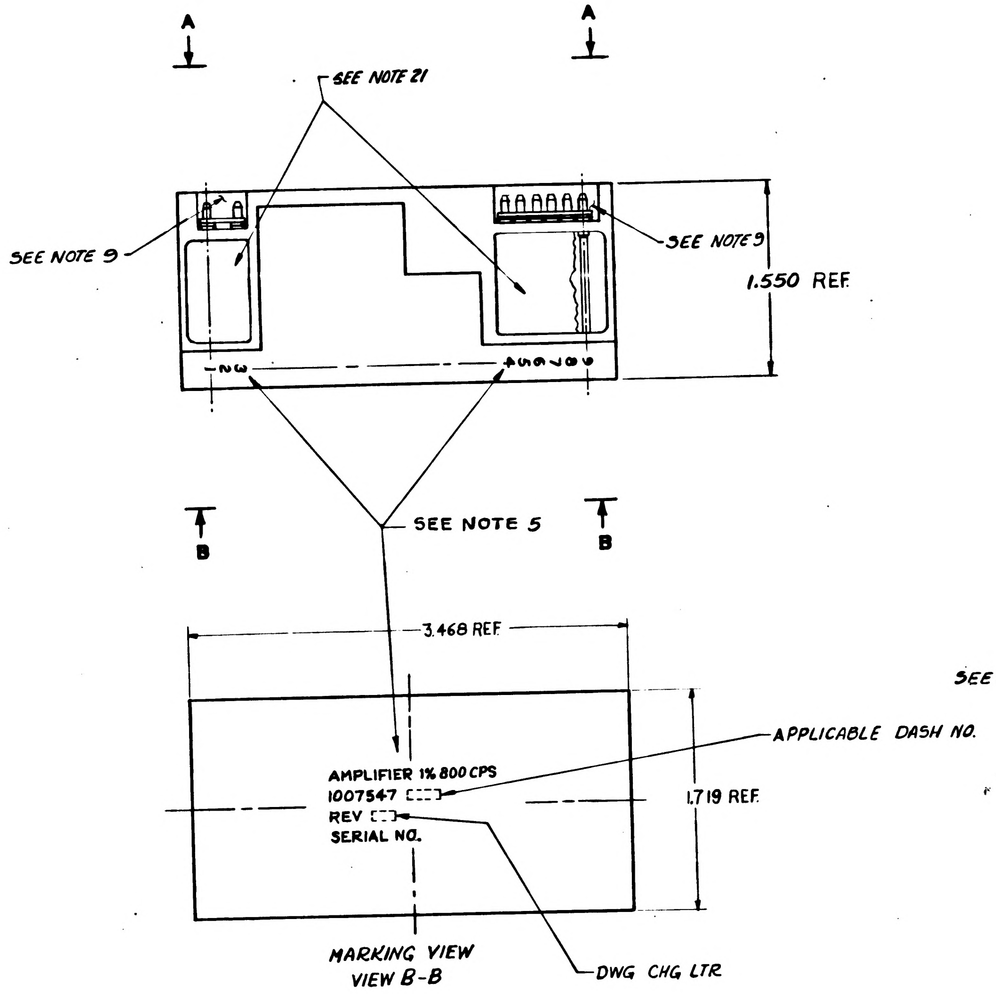
CODE IDENT NO. 80230
SIZE E
1007547
SCALE 5/1
SHEET 2 OF 2

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE, 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03±.03 OF EXTERNAL EDGE

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 15496			
B		REVISED PER TDRR 16638		24 FEB	JP
C		REVISED PER TDRR-17313		[illegible]	[illegible]
D		REVISED PER TDRR 17610		MAR	[illegible]
E		REVISED PER TDRR 17965		[illegible]	[illegible]
F		REVISED PER TDRR 18514		[illegible]	[illegible]
G		REVISED PER TDRR 9399		JUL	[illegible]
H		REVISED PER TDRR 944.		[illegible]	[illegible]
J		REVISED PER TDRR 95-8		[illegible]	[illegible]
K		REVISED PER TDRR 20143		[illegible]	KD
L		REVISED PER TDRR 20788		[illegible]	JR



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009 METHOD H.
3. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
4. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005.
5. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. COAT THREADS AND ITEM 32 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
7. MOUNTING TORQUE FOR ITEM 8 24 IN-LBS ± 2 IN-LBS.
8. SOLDER PER ND 1002071
9. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. ~~BOND ITEM NUMBERS 42 AND 43 TO ITEM 1 PER ND1002237.~~
11. AR DENOTES AS REQUIRED
12. ON ITEMS 3 AND 4:

K INDICATES CATHODE END.
FT ( ) INDICATES FEED THRU.
PLUS (+) INDICATES POSITVE END OF CAPACITOR.
C - INDICATES COLLECTOR LEAD OF TRANSISTOR.
B - BASE
E - EMITTER
C_A COLLECTOR
B_A BASE
E_A EMITTER
C_B COLLECTOR
B_B BASE
E_B EMITTER
MULTI STAGE TRANSISTOR.

13. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
14. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
15. TYPICAL SLEEVING FOR R3, R5, R6, R8 R9, R12, R13, R14, R15 AND R16
16. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT10.
17. VALUE OF R11 AND R17 TO BE DETERMINED BY ELECTRICAL TEST PER ATP1007077 PARTS TO BE SELECTED FROM CHARTS, VALUE IS IN OHMS.
18. ASSEMBLE PER ND 1002136.
19. BOND ITEM NO.35 TO ITEM NO.29. CURE AT AIR TEMPERATURE BEFORE ASSEMBLY TO ITEM NO.1
20. PROCURE PER PS 1007047.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE, SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT 2.5, ½ WIDE
23. FILL PER ND 1002117
24. ~~BOND A .25 MIN WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
26. EXCEPT FOR THE HELICOIL MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002110 TYPE II, AFTER ENCAPSULATION, USING BLACK PAINT PER 1010729-4. CURE AT 140°F FOR EIGHT HOURS. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE FROM PAINT.

SELECTION CHART FOR R11

PART NUMBER	VALUE
1010364-325	2430
329	2550
337	2800
343	3010
351	3320
355	3480
361	3740
367	4020
371	4220
375	4420
377	4530
381	4750
385	4990
387	5110
391	5360
395	5620
399	5900
403	6190
405	6340
409	6650

SELECTION CHART FOR R17

PART NUMBER	VALUE
1006750-84	150K
-56	10K
-49	5.1K
-44	3.3K
-41	2.4K
-38	1.8K
-36	1.5K
-34	1.2K
-32	1.0K
-30	820
-29	750
-27	620
-25	510
-23	430
-22	390
-20	330
-18	270
-16	220

27. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
28. AFTER ENCAPSULATION BUT PRIOR TO PAINTING, PROVIDE A 45° X APPROX. .06 CHAMFER IN THE FOAM ALONG THE ENTIRE FOAM TO HEATSINK EXTERNAL INTERFACES. FILL THE CHAMFERED AREA FLUSH TO WITHIN .016 BELOW SURFACE USING ND1002187, TYPE II.

SEE NOTE 17
SEE NOTE 17

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		REF	1009525	SCHEMATIC DIAGRAM ELECTRICAL
1		45	1010829-2	DIODE
1		44	1006750-	RESISTOR, FIXED
1		43	1008540-3	GASKET, CONNECTOR, MINAT.
1		42	1008540-6	GASKET, CONNECTOR, MINAT.
AR		41	1006757-8	WIRE, ELECTRICAL .020 DIA
AR		40	1006757-1	WIRE, ELECTRICAL .010 × .020
AR		39	1006757-9	WIRE, ELECTRICAL .032 DIA
AR		38	-22	INSULATION SLEEVING, ELECTRICAL
AR		37	-21	INSULATION SLEEVING, ELECTRICAL
AR		36	1006776-20	INSULATION SLEEVING, ELECTRICAL
AR		35	SEE NOTE 22	INSULATION TAPE, ELECTRICAL
1		34	1010273-3	TRANSISTOR (MATCHED PAIR)
1		33	1010324	TRANSFORMER
1		32	1010307	TRANSFORMER
1		31	1010431	TRANSISTOR
1		30	1010345-2	TRANSISTOR (MATCHED PAIR)
~~1~~		29	~~1010265-2~~	~~SEMICONDUCTOR DEVICE, DIODE~~
1		28	1010372-15	SEMICONDUCTOR DEVICE, DIODE
2		27	1010264-9	CAPACITOR, FIXED
2		26	1010264-37	CAPACITOR, FIXED
1		25	-57	
1		24	-56	
2		23	-25	
2		22	-12	
4		21	1006750-1	
~~2~~		~~20~~	~~1010369-1~~	
1		19	1010364-	
1		18	-573	
2		17	-327	
1		16	-309	
1		15	1010364-273	RESISTOR, FIXED
2		14	1008025-2	INSULATOR, BUSHING
2		13	1000093-13	SCREW
2		12	1008024-4	WASHER, INSULATOR
2		11	1008024-3	WASHER, INSULATOR
2		10	1008021-2	BUSHING, INSULATOR
2		9	1008071-5	WASHER, FLAT
2		8	MS20341-416B	NUT
8		7	1006775	INSULATOR
8		6	1006782-5	CONTACT, WRAPOST-MALE
		5		
~~1~~		~~4~~	~~1008308~~	
~~1~~		~~3~~	~~1008307~~	~~INSULATOR~~
		2		
1		1	1008306	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007572		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

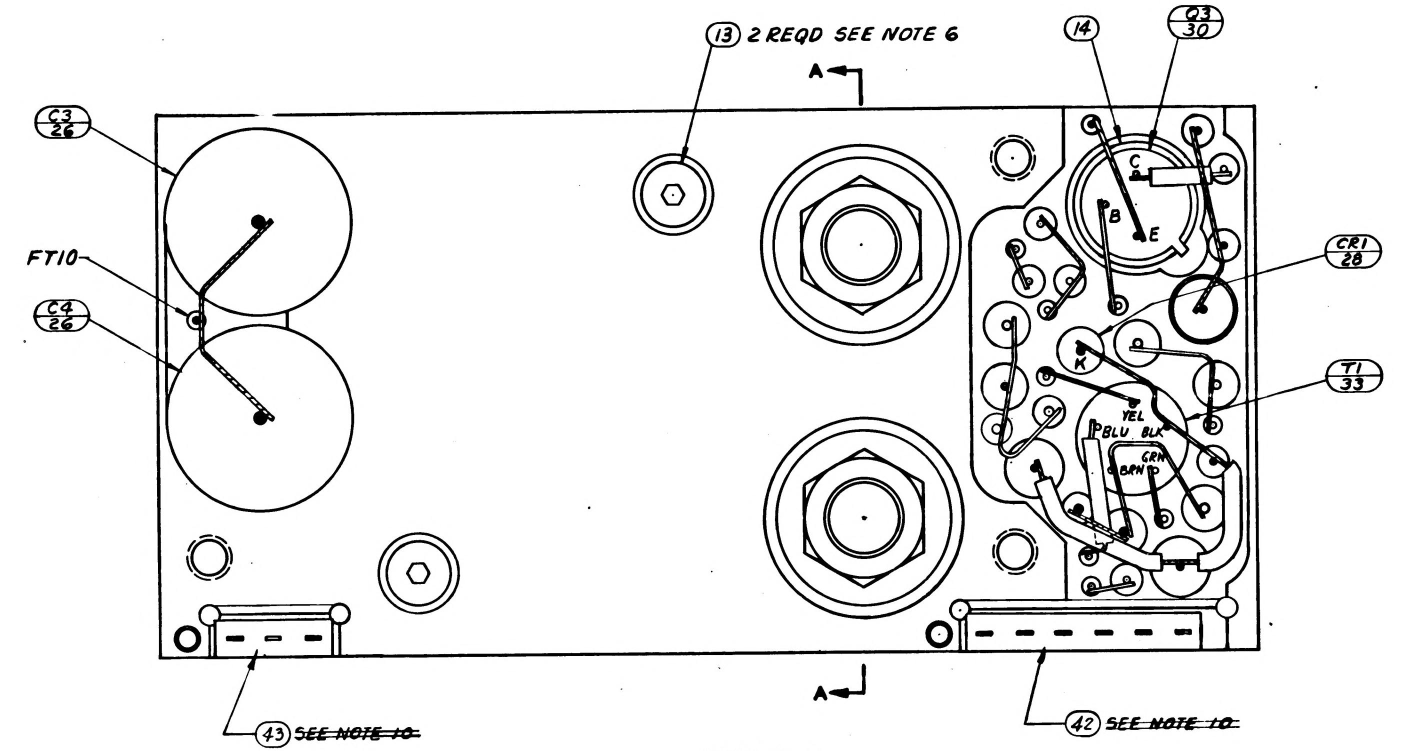
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS .XX ±.02 .XXX ±.005 ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DRAWN Ouzel DATE 26 SEP 64
CHECKED A. Udorach 3 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

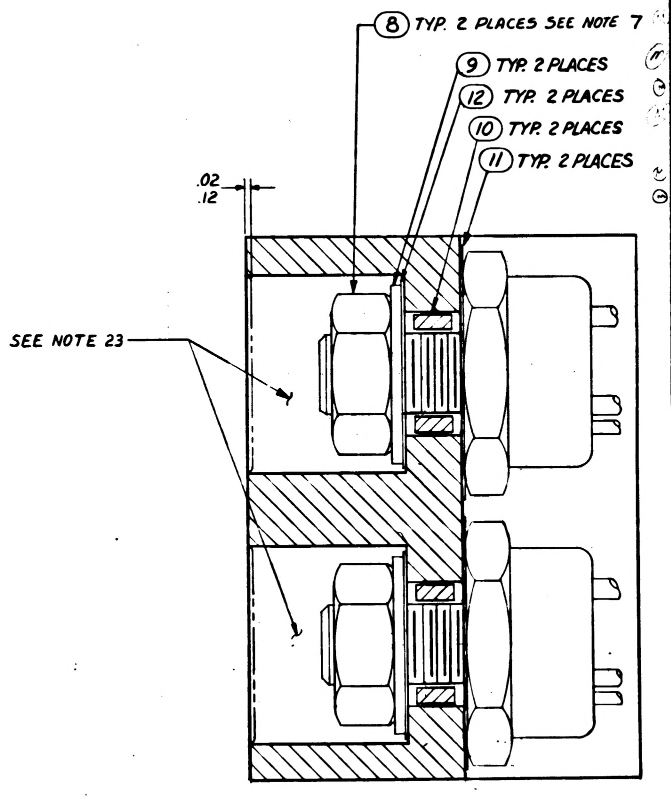
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1007547
SCALE 2/1
SHEET 1 OF 2

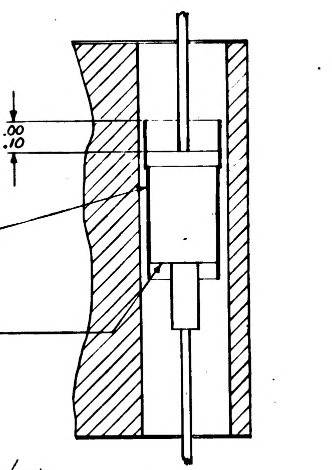

13 2 REQD SEE NOTE 6
A
14
Q3 30
C3 26
FT10
C4 26
CR1 28
T1 33
C
B
E
K
YEL
BLU
BLK
GRN
BRN
RED
43 ~~SEE NOTE 10~~
42 ~~SEE NOTE 10~~

VIEW A-A
BEFORE ENCAPSULATION

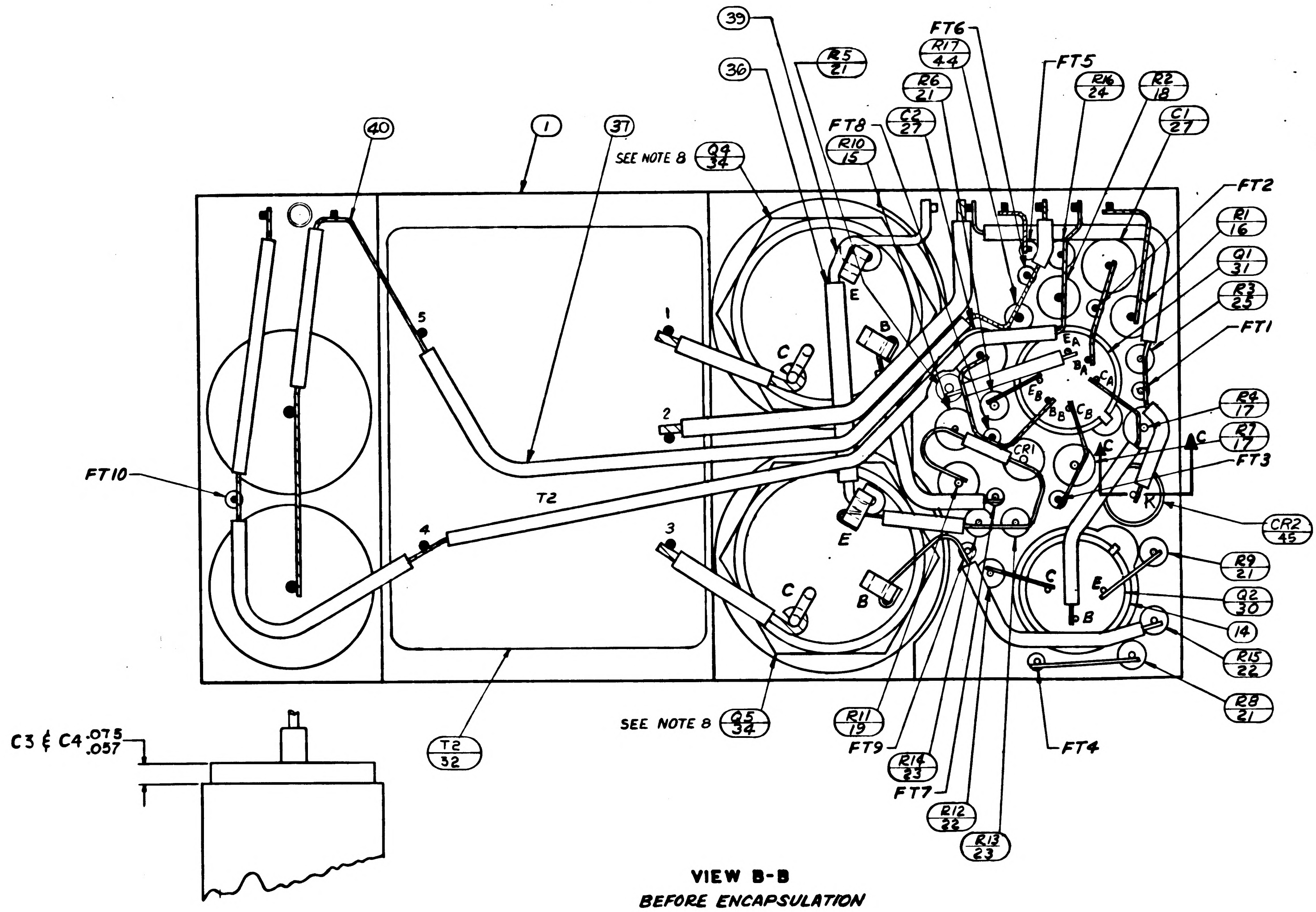

8 TYP. 2 PLACES SEE NOTE 7
9 TYP. 2 PLACES
12 TYP. 2 PLACES
10 TYP. 2 PLACES
11 TYP. 2 PLACES
.02
.12
SEE NOTE 23

SECTION A-A

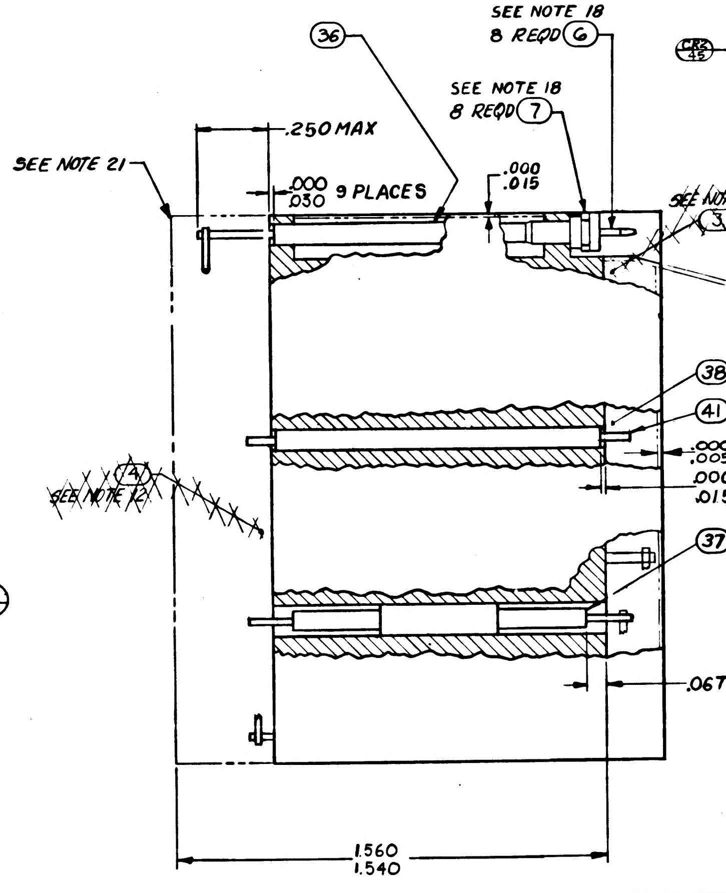
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 15496		FEB 65	
B		REVISED PER TDRR 16638		24 FEB 65	JWP
C		REVISED PER TDRR-17313		12 MAR 65	B.
D		REVISED PER TDRR 17610		24 MAR 65	JTO
E		REVISED PER TDRR 17965		6 APR 65	J.
F		REVISED PER TDRR 18514		27 APR 65	
G		REVISED PER TDRR 9399		[illegible]	
H		REVISED PER TDRR 9441		[illegible]	
J		REVISED PER TDRR 9568		[illegible]	
K		REVISED PER TDRR 20043		19 [illegible] 65	
L		REVISION STATUS CHANGED PER TDRR 20788		17 [illegible] 65	


.00
.10
SEE NOTE 19 35
CR2 45

PARTIAL SECTION C-C


39
R5 21
36
R17 44
FT6
FT5
R26 21
R16 24
R2 18
FT8
C2 27
C1 27
R10 15
40
1
37
SEE NOTE 8 Q4 34
FT2
R1 16
Q1 31
R3 25
FT1
R4 17
R7 17
FT3
C
CR2 45
R9 21
Q2 30
14
R15 22
R8 21
FT10
T2
1
2
3
4
5
C
B
E
EA
BA
CA
EB
BB
CB
CR1
R
SEE NOTE 8 Q5 34
R11 19
FT9
R14 23
FT7
R12 22
R13 23
FT4
T2 32
C3 & C4 .075 .057

VIEW B-B
BEFORE ENCAPSULATION


36
SEE NOTE 18
8 REQD 6
SEE NOTE 18
8 REQD 7
.250 MAX
SEE NOTE 21
.000 .030 9 PLACES
.000 .015
SEE NOTE 12 3
.000 .015
38 SEE NOTE 16
41 SEE NOTE 16
.000 .005
.000 .015 TYP. 18 PLACES
4 SEE NOTE 12
37 SEE NOTE 15
.06 TYP. 18 PLACES
1.560
1.540

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES + + + − − −	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DO NOT SCALE THIS DRAWING	DRAWN Orgel DATE 25 Sep 64 CHECKED [illegible] 3 OCT 64 APPROVAL [illegible] APPROVAL [illegible]	AMPLIFIER 1%-800 CPS MODULE ASSEMBLY	
MATERIAL	NASA APPROVAL [illegible]	CODE IDENT NO. 80230	SIZE E · 1007547
CONTRACT NAS 9-497	MIT APPROVAL [illegible]	SCALE 5/1	SHEET 2 OF 2

1007547

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA ½ FROM EXTERNAL HEATSINK SURFACE, 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

REVISIONS

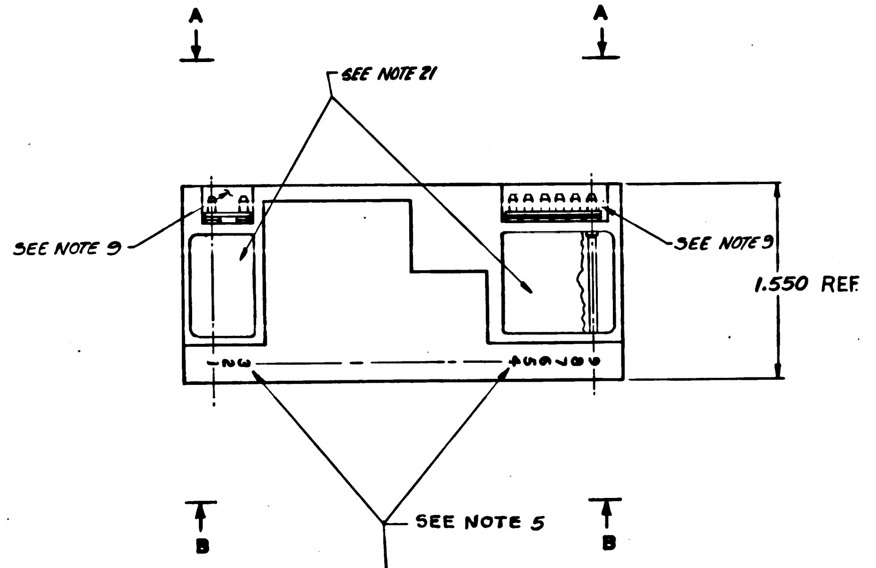
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 15496		FEB 65	JJ
B		REVISED PER TDRR 16638		24FEB 65	WP
C		REVISED PER TDRR-17313		12 MAR 65	R.
D		REVISED PER TDRR 17610		24 MAR 65	[illegible]
E		REVISED PER TDRR 17965		6 APR 65	JJ
F		REVISED PER TDRR 18514		27 APR 65	[illegible]
G		REVISED PER TDRR 19399		1JUN65	[illegible]
H		REVISED PER TDRR 19441		3JUN65	[illegible]
J		REVISED PER TDRR 19568		-JUN65	[illegible]
K		REVISED PER TDRR 20149		JUN 65	RD
L		REVISED PER TDRR 20788		[illegible]	JR
M		REVISED PER TDRR 22960		[illegible]	[illegible]

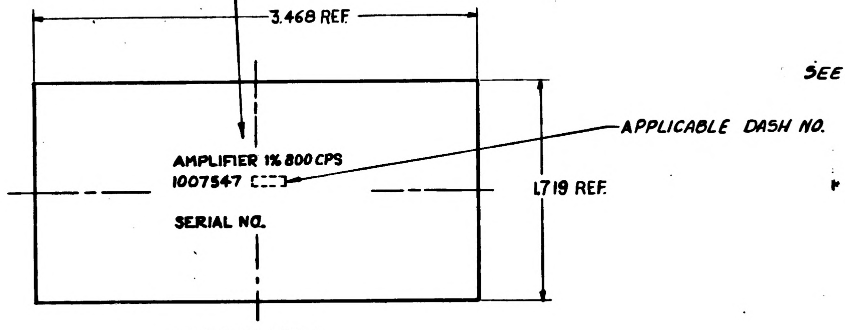
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009 METHOD J.
3. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
4. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005.
5. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. COAT THREADS AND ITEM 32 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
7. MOUNTING TORQUE FOR ITEM 8 24 IN-LBS ± 2 IN-LBS.
8. SOLDER PER ND 1002071
9. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. ~~BOND ITEM NUMBERS 42 AND 43 TO ITEM 1 PER ND1002237.~~
11. AR DENOTES AS REQUIRED
12. ON ITEMS 3 AND 4:

    K INDICATES CATHODE END.
    FT ( ) INDICATES FEED THRU.
    PLUS (+) INDICATES POSITVE END OF CAPACITOR.
    C - INDICATES COLLECTOR LEAD OF TRANSISTOR.
    B - BASE
    E - EMITTER
    C_A COLLECTOR
    B_A BASE
    E_A EMITTER
    C_B COLLECTOR
    B_B BASE
    E_B EMITTER
    MULTI STAGE TRANSISTOR.

13. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
14. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
15. TYPICAL SLEEVING FOR R3, R5, R6, R8 R9, R12, R13, R14, R15 AND R16
16. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT10.
17. VALUE OF R11 AND R17 TO BE DETERMINED BY ELECTRICAL TEST PER ATP1007047 PARTS TO BE SELECTED FROM CHARTS, VALUE IS IN OHMS.
18. ASSEMBLE PER ND 1002136.
19. BOND ITEM NO.35 TO ITEM NO.29. CURE AT AIR TEMPERATURE BEFORE ASSEMBLY TO ITEM NO.1
20. PROCURE PER PS 1007047.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE, SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT 2.5, ½ WIDE
23. FILL PER ND 1002117
24. ~~BOND A .25 MIN WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
26. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
27. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
28. AFTER ENCAPSULATION BUT PRIOR TO PAINTING, PROVIDE A 45° X APPROX. .06 CHAMFER IN THE FOAM ALONG THE ENTIRE FOAM TO HEATSINK EXTERNAL INTERFACES. FILL THE CHAMFERED AREA FLUSH TO WITHIN .016 BELOW SURFACE USING ND1002187, TYPE II.





MARKING VIEW
VIEW B-B

SELECTION CHART FOR R11	
PART NUMBER	VALUE
1010364-325	2430
329	2550
337	2800
343	3010
351	3320
355	3480
361	3740
367	4020
371	4220
375	4420
377	4530
381	4750
385	4990
387	5110
391	5360
395	5620
399	5900
403	6190
405	6340
409	6650

SELECTION CHART FOR R17	
PART NUMBER	VALUE
1006750-84	150K
-56	10K
-49	5.1K
-44	3.3K
-41	2.4K
-38	1.8K
-36	1.5K
-34	1.2K
-32	1.0K
-30	820
-29	750
-27	620
-25	510
-23	430
-22	390
-20	330
-18	270
-16	220

SEE NOTE 17 (item 44)

SEE NOTE 17 (item 19)

			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			☒		REF	1009525	SCHEMATIC DIAGRAM ELECTRICAL
			1		45	1010829-2	DIODE
			1		44	1006750-	RESISTOR, FIXED
			1		43	1008540-3	GASKET, CONNECTOR, MINAT.
			1		42	1008540-6	GASKET, CONNECTOR, MINAT.
			AR		41	1006757-8	WIRE, ELECTRICAL .020 DIA
			AR		40	1006757-1	WIRE, ELECTRICAL .010 × .020
			AR		39	1006757-9	WIRE, ELECTRICAL .032 DIA
			AR		38	-22	INSULATION SLEEVING, ELECTRICAL
			AR		37	-21	INSULATION SLEEVING, ELECTRICAL
			AR		36	1006776-20	INSULATION SLEEVING, ELECTRICAL
			AR		35	SEE NOTE 22	INSULATION TAPE, ELECTRICAL
			1		34	1010273-3	TRANSISTOR (MATCHED PAIR)
			1		33	1010324	TRANSFORMER
			1		32	1010307	TRANSFORMER
			1		31	1010431	TRANSISTOR
			1		30	1010345-2	TRANSISTOR (MATCHED PAIR)
			~~1~~		29	~~1010265-2~~	~~SEMICONDUCTOR DEVICE, DIODE~~
			1		28	1010372-15	SEMICONDUCTOR DEVICE, DIODE
			2		27	1010264-9	CAPACITOR, FIXED
			2		26	1010264-37	CAPACITOR, FIXED
			1		25	-57	
			1		24	-56	
			2		23	-25	
			2		22	-12	
			4		21	1006750-1	
			~~2~~		~~20~~	~~1010369-1~~	
			1		19	1010364-	
			1		18	-573	
			2		17	-327	
			1		16	-309	
			1		15	1010364-273	RESISTOR, FIXED
			2		14	1008025-2	INSULATOR, BUSHING
			2		13	1000093-13	SCREW
			2		12	1008024-4	WASHER, INSULATOR
			2		11	1008024-3	WASHER, INSULATOR
			2		10	1008021-2	BUSHING, INSULATOR
			2		9	1008071-5	WASHER, FLAT
			2		8	MS20341-416B	NUT
			8		7	1006775	INSULATOR
			8		6	1006782-5	CONTACT, WRAPOST-MALE
					5		
			~~1~~		~~4~~	~~1008308~~	
			~~1~~		~~3~~	~~1008307~~	~~INSULATOR~~
					2		
			1		1	1008306	HEATSINK

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007572		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS .XX ±.02 .XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN Orgel DATE 26 SEP 64
CHECKED A. Wernal 3 OCT 64
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

CODE IDENT NO. 80230 SIZE E 1007547
SCALE 2/1 SHEET 1 OF 2

SYM	ZONE	DESCRIPTION	DATE	APPD.
A		~~REVISED~~ PER TDRR 15496	1 FEB 65	JJJ
B		REVISED PER TDRR 16638	24 FEB 65	JWP
C		REVISED PER TDRR-173:3	12 MAR 65	B.
D		REVISED PER TDRR 17610	24 MAR 65	HTO
E		REVISED PER TDRR 17965	6 APR 65	JJJ
F		REVISED PER TDRR 18514	[illegible]	K.W.T.
G		REVISED PER TDRR 19399	[illegible]	[illegible]
H		REVISED PER TDRR 1944	[illegible]	[illegible]
J		REVISED PER TDRR 19568	[illegible]	[illegible]
K		REVISED PER TDRR 20143	[illegible]	TWD
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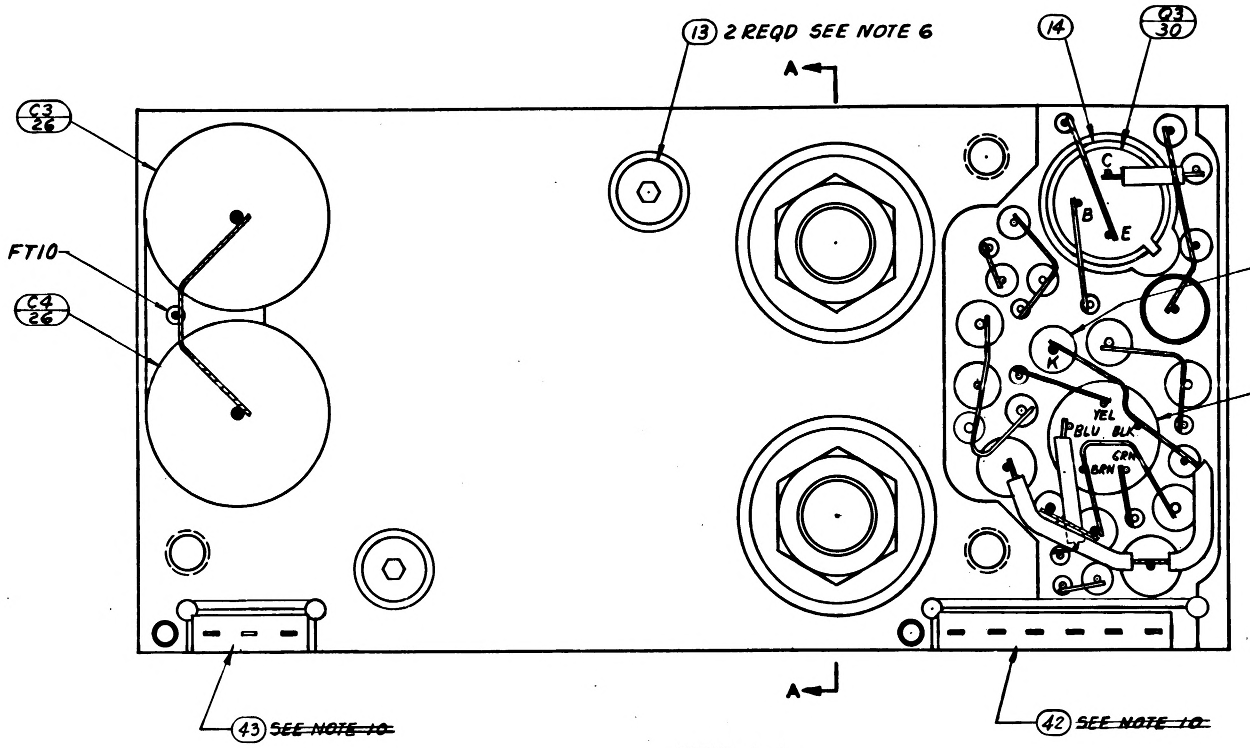
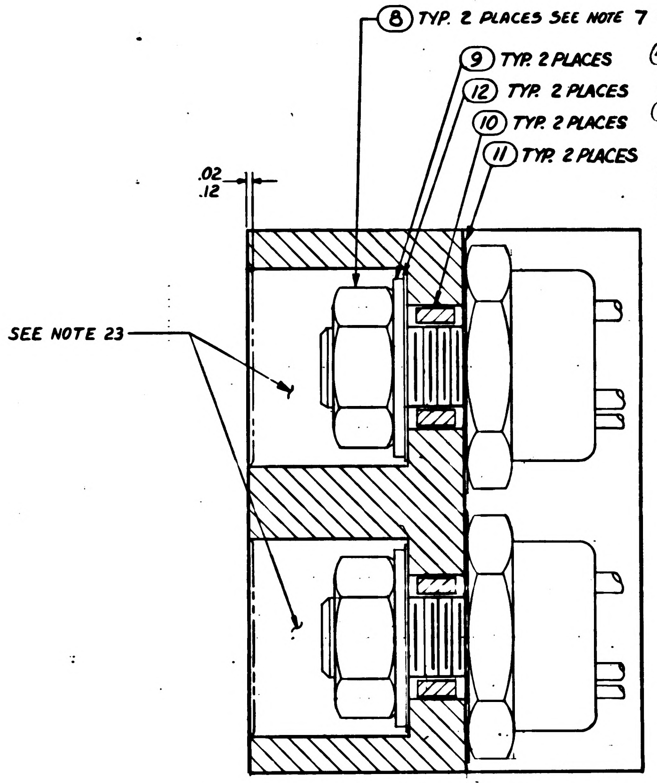
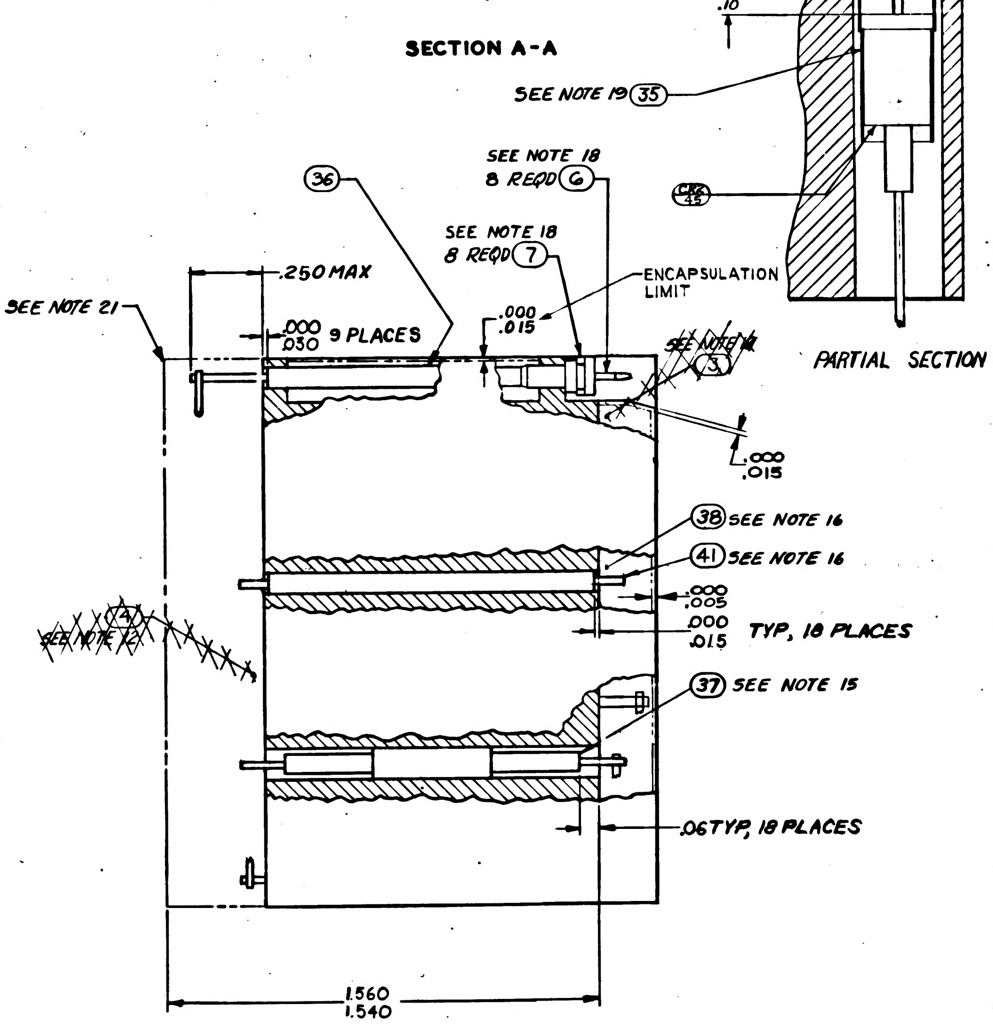
M		REVISED PER TDRR 22960	[illegible]	JJJ


13 2 REQD SEE NOTE 6
A
C3 26
FT10
C4 26
14
Q3 30
C
B
E
CR1 28
K
YEL
BLU
BLK
GRN
BRN
T1 33
43 ~~SEE NOTE 10~~
42 ~~SEE NOTE 10~~

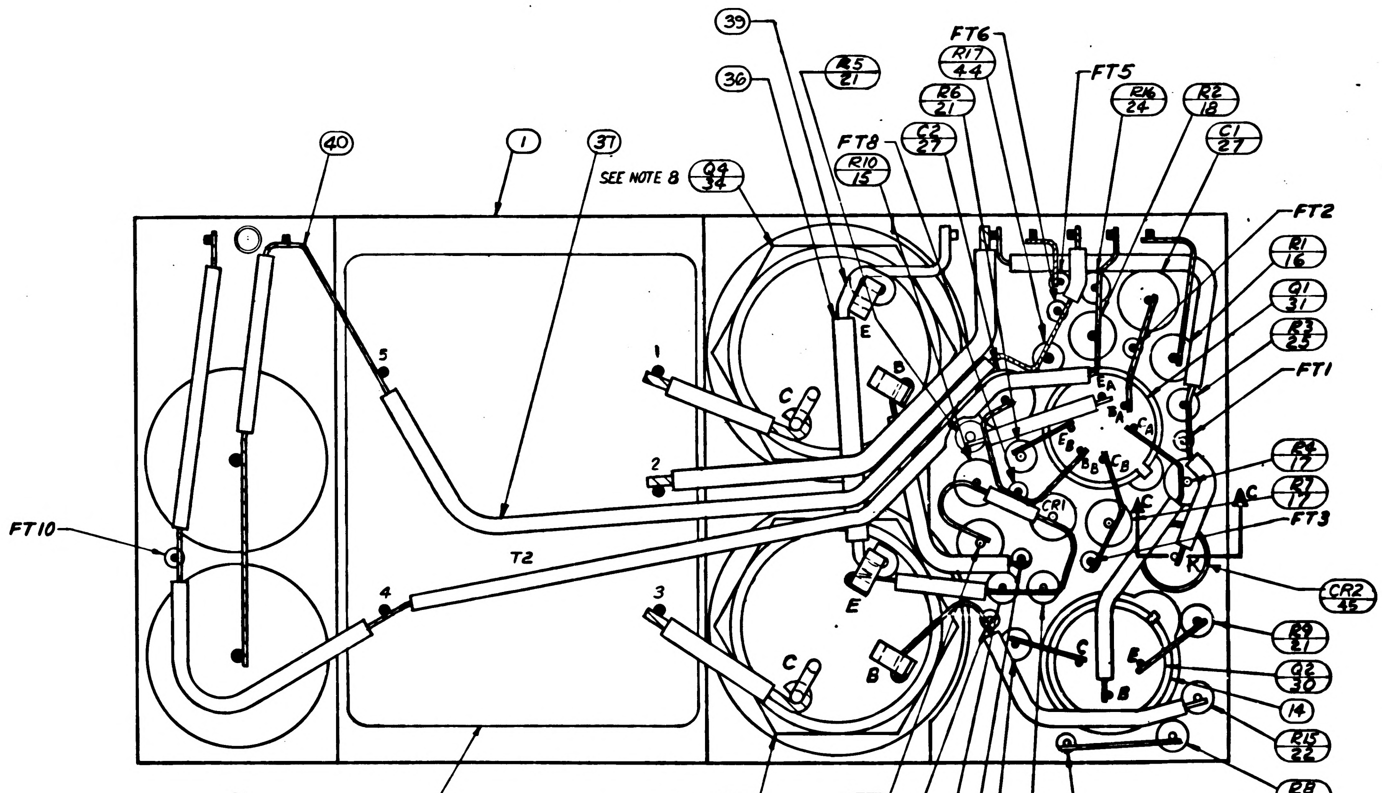
VIEW A-A
BEFORE ENCAPSULATION


8 TYP. 2 PLACES SEE NOTE 7
9 TYP. 2 PLACES
12 TYP. 2 PLACES
10 TYP. 2 PLACES
11 TYP. 2 PLACES
.02
.12
SEE NOTE 23

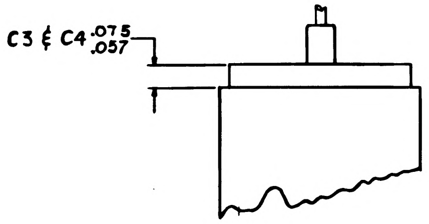
SECTION A-A


.00
.10
SEE NOTE 19 35
CR2
36
SEE NOTE 18
8 REQD 6
SEE NOTE 18
8 REQD 7
ENCAPSULATION LIMIT
.250 MAX
SEE NOTE 21
.000
.030 9 PLACES
.000
.015
SEE NOTE 3
.000
.015
38 SEE NOTE 16
41 SEE NOTE 16
.000
.005
.000
.015
TYP. 18 PLACES
SEE NOTE 4
37 SEE NOTE 15
.06 TYP. 18 PLACES
1.560
1.540

PARTIAL SECTION C-C


39
36
R5 21
R17 44
FT6
R26 21
FT5
R16 24
R2 18
C1 27
40
1
37
SEE NOTE 8
Q4 34
R10 15
FT8
C2 27
FT2
R1 16
Q1 31
R3 25
FT1
5
E
C
B
1
2
E
B
A
C
CR1
R4 17
R7 17
AC
FT3
FT10
T2
4
3
E
C
B
CR2 45
R9 21
Q2 30
14
R15 22
R8 21
SEE NOTE 8
Q5 34
T2 32
R11 19
FT9
R14 23
FT7
R12 22
R13 23
FT4

VIEW B-B
BEFORE ENCAPSULATION


C3 & C4
.075
.057

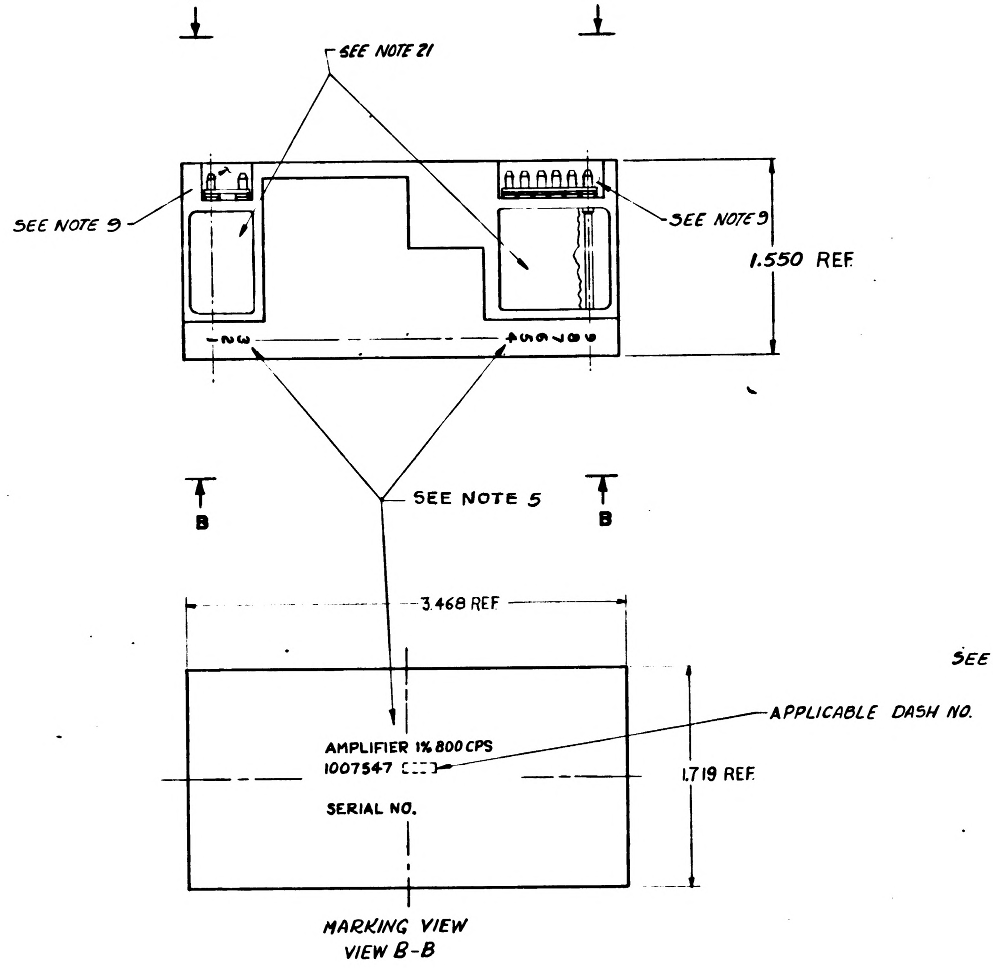
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES + + + − − −	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN Ossel DATE 25 SEP 64 CHECKED Udovich 3 OCT 64 APPROVAL Sawyer APPROVAL [illegible]	AMPLIFIER 1%-800 CPS MODULE ASSEMBLY
MATERIAL	NASA APPROVAL W. J. [illegible] 11-6-64	CODE IDENT NO. 80230 · SIZE E · 1007547
CONTRACT NAS 9-497	MIT APPROVAL [illegible]	SCALE 5/1 · SHEET 2 OF 2

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR [illegible]		[illegible] 65	[illegible]
B		REVISED PER TDRR 16638		24 FEB 65	JWP
C		REVISED PER TDRR-17313		12 MAR 65	[illegible]
D		REVISED PER TDRR 17610		24 MAR 65	[illegible]
E		REVISED PER TDRR 17965		[illegible] APR 65	[illegible]
F		REVISED PER TDRR 18514		27 APR 65	[illegible]
G		REVISED PER TDRR 19399		1 JUN 65	[illegible]
H		REVISED PER TDRR 9441		3 JUN [illegible]	[illegible]
J		REVISED PER TDRR 9568		4 JUN [illegible]	[illegible]
K		REVISED PER TDRR 20143		19 JUN 65	DKD
L		REVISED PER TDRR 20788		17 JULY 65	WJR
M		REVISED PER TDRR 22960		2 [illegible] 65	[illegible]
N		REVISED PER TDRR 23[illegible]0-		16 NOV 65	[illegible]



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009 METHOD J.
3. UNLESS OTHERWISE SPECIFIED:
   WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
4. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005.
5. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. COAT THREADS AND ITEM 32 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
7. MOUNTING TORQUE FOR ITEM 8 24 IN-LBS ± 2 IN-LBS.
8. SOLDER PER ND1002071
9. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. ~~BOND ITEM NUMBERS 42 AND 43 TO ITEM 1 PER ND1002237.~~
11. AR DENOTES AS REQUIRED
12. ON ITEMS 3 AND 4:

    K INDICATES CATHODE END.
    FT ( ) INDICATES FEED THRU.
    PLUS (+) INDICATES POSITVE END OF CAPACITOR.
    C - INDICATES COLLECTOR LEAD OF TRANSISTOR.
    B - BASE
    E - EMITTER
    C_A COLLECTOR
    B_A BASE
    E_A EMITTER
    C_B COLLECTOR
    B_B BASE
    E_B EMITTER
    MULTI STAGE TRANSISTOR.
13. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
14. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
15. TYPICAL SLEEVING FOR R3, R5, R6, R8 R9, R12, R13, R14, R15 AND R16
16. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT10.
17. VALUE OF R11 AND R17 TO BE DETERMINED BY ELECTRICAL TEST PER ATP1007077 PARTS TO BE SELECTED FROM CHARTS, VALUE IS IN OHMS
18. ASSEMBLE PER ND1002136.
19. BOND ITEM NO.35 TO ITEM NO.29. CURE AT AIR TEMPERATURE BEFORE ASSEMBLY TO ITEM NO.1
20. PROCURE PER PS1007047.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE, SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT 2.5, ½ WIDE
23. FILL PER ND1002117
24. BOND A .25 MIN WIDE ~~PERIMETER OF THE TOP AND BOTTOM~~ INSULATORS ~~TO THE HEATSINK AND COAT A .25 MIN WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002137 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
26. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
27. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
28. AFTER ENCAPSULATION BUT PRIOR TO PAINTING, PROVIDE A 45° X APPROX. .06 CHAMFER IN THE FOAM ALONG THE ENTIRE FOAM TO HEATSINK EXTERNAL INTERFACES. FILL THE CHAMFERED AREA FLUSH TO WITHIN .016 BELOW SURFACE USING ND1002187, TYPE II.

SELECTION CHART FOR R11

PART NUMBER	VALUE	PART NUMBER	VALUE
1010364-411	6810	1010364-325	2430
413	6980	329	2550
415	7150	337	2800
417	7320	343	3010
419	7500	351	3320
421	7680	355	3480
		361	3740
		367	4020
		371	4220
		375	4420
		377	4530
		381	4750
		385	4990
		387	5110
		391	5360
		395	5620
		399	5900
		403	6190
		405	6340
		409	6650

SELECTION CHART FOR R17

PART NUMBER	VALUE
1006750-84	150K
-56	10K
-49	5.1K
-44	3.3K
-41	2.4K
-38	1.8K
-36	1.5K
-34	1.2K
-32	1.0K
-30	820
-29	750
-27	620
-25	510
-23	430
-22	390
-20	330
-18	270
-16	220

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		REF	1009525	SCHEMATIC DIAGRAM ELECTRICAL
1		45	1010829-2	DIODE
1		44	1006750- (SEE NOTE 17)	RESISTOR, FIXED
1		43	1008540-3	GASKET, CONNECTOR, MINAT.
1		42	1008540-6	GASKET, CONNECTOR, MINAT.
AR		41	1006757-8	WIRE, ELECTRICAL .020 DIA
AR		40	1006757-1	WIRE, ELECTRICAL .010 × .020
AR		39	1006757-9	WIRE, ELECTRICAL .032 DIA
AR		38	-22	INSULATION SLEEVING, ELECTRICAL
AR		37	-21	INSULATION SLEEVING, ELECTRICAL
AR		36	1006776-20	INSULATION SLEEVING, ELECTRICAL
AR		35	SEE NOTE 22	INSULATION TAPE, ELECTRICAL
1		34	1010273-3	TRANSISTOR (MATCHED PAIR)
1		33	1010324	TRANSFORMER
1		32	1010307	TRANSFORMER
1		31	1010431	TRANSISTOR
1		30	1010345-2	TRANSISTOR (MATCHED PAIR)
~~1~~		~~29~~	~~1010265-2~~	~~SEMICONDUCTOR DEVICE, DIODE~~
1		28	1010372-15	SEMICONDUCTOR DEVICE, DIODE
2		27	1010264-9	CAPACITOR, FIXED
2		26	1010264-37	CAPACITOR, FIXED
1		25	-57	
1		24	-56	
2		23	-25	
2		22	-12	
4		21	1006750-1	
~~2~~		~~20~~	~~1010369-1~~	
1		19	1010364- (SEE NOTE 17)	
1		18	-573	
2		17	-327	
1		16	-309	
1		15	1010364-273	RESISTOR, FIXED
2		14	1008025-2	INSULATOR, BUSHING
2		13	1000093-13	SCREW
2		12	1008024-4	WASHER, INSULATOR
2		11	1008024-3	WASHER, INSULATOR
2		10	1008021-2	BUSHING, INSULATOR
2		9	1008071-5	WASHER, FLAT
2		8	MS20341-416B	NUT
8		7	1006775	INSULATOR
8		6	1006782-5	CONTACT, WRAPOST-MALE
		5		
~~1~~		~~4~~	~~1008308~~	
~~1~~		~~3~~	~~1008307~~	~~INSULATOR~~
		2		
1		1	1008306	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007572		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ .XX ±.02 +
− .XXX ±.005 −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

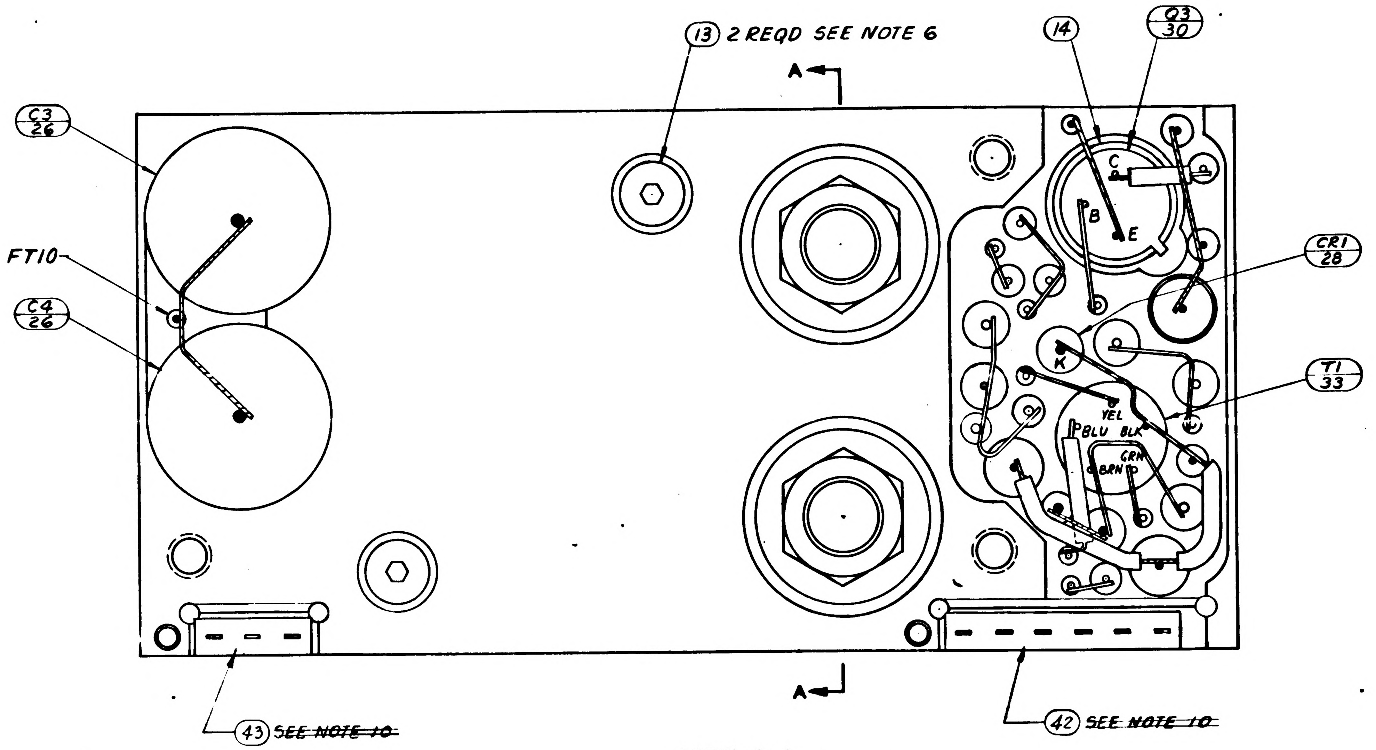
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orzel DATE 26 SEP 64
CHECKED [illegible] 3 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

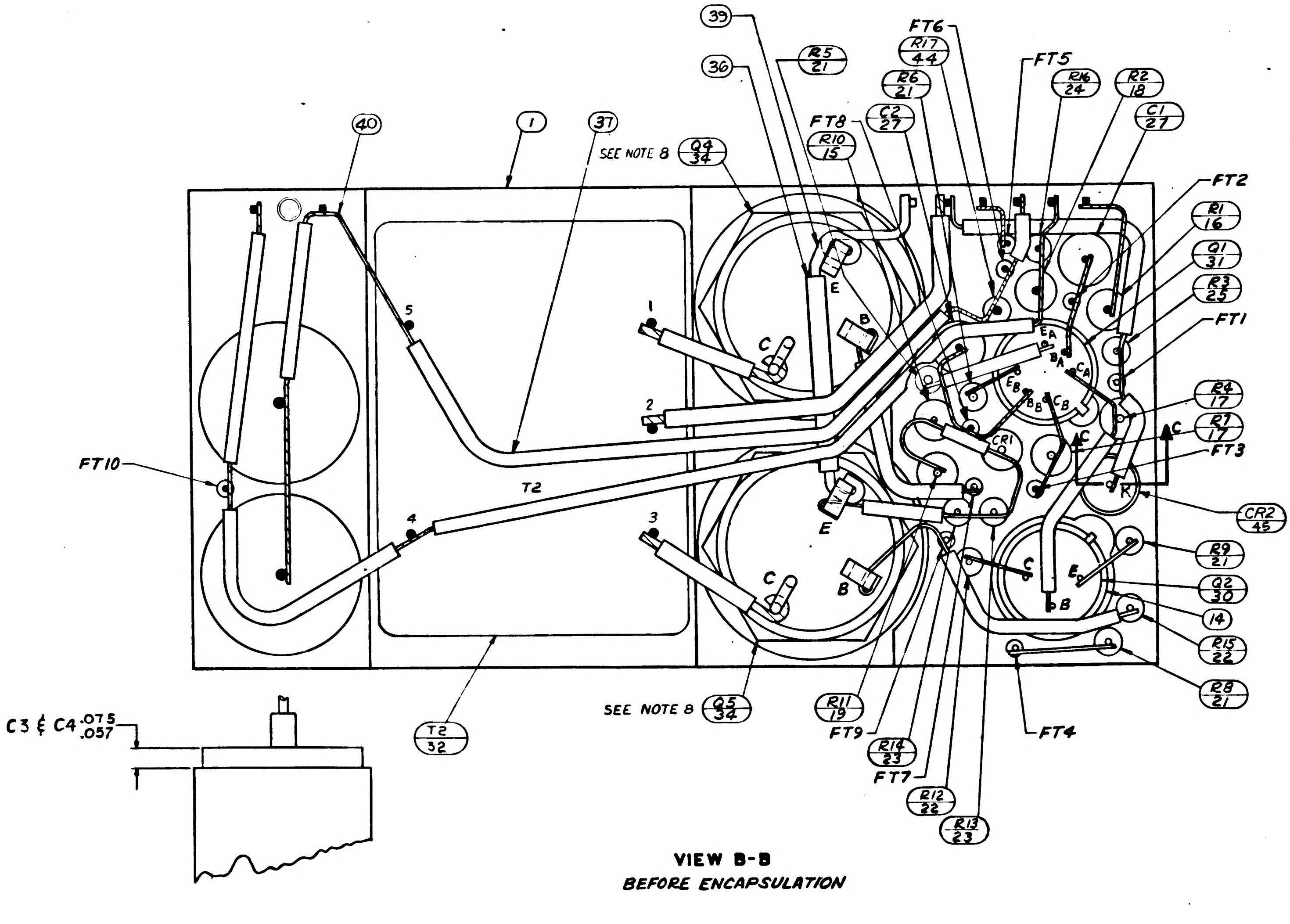
AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1007547
SCALE 2/1
SHEET 1 OF 2

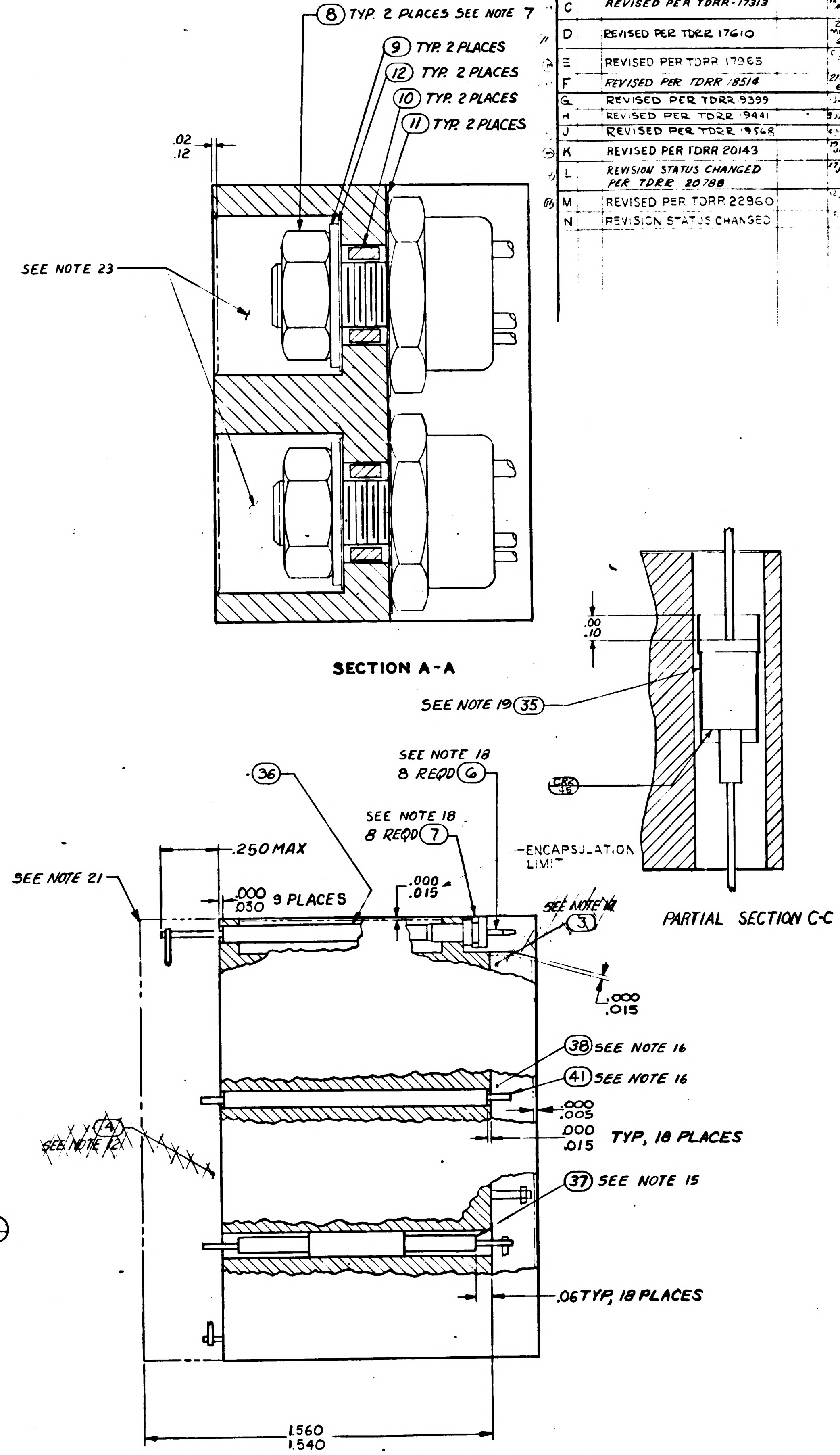
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 15496		65	
B		REVISED PER TDRR 16638		24 FEB 65	JWP
C		REVISED PER TDRR-17313		12-MAR-65	B
D		REVISED PER TDRR 17610		24 MAR 65	HTD
E		REVISED PER TDRR 17965		APR 65	
F		REVISED PER TDRR 18514		21 APR 65	R.W.T.
G		REVISED PER TDRR 9399		JUN 65	
H		REVISED PER TDRR 19441		3 JUN 65	
J		REVISED PER TDRR 19568		4 JUN 65	
K		REVISED PER TDRR 20143		19 JUN 65	
L		REVISION STATUS CHANGED PER TDRR 20788		19 JULY 65	WJR
M		REVISED PER TDRR 22960		65	
N		REVISION STATUS CHANGED		NOV	


13 2 REQD SEE NOTE 6
A
14
Q3 30
C3 26
FT10
C4 26
C
B
E
CR1 28
T1 33
K
YEL
BLU
BLK
GRN
BRN
43 SEE NOTE 10
42 SEE NOTE 10

VIEW A-A
BEFORE ENCAPSULATION


39
R5 21
30
FT6
R17 44
FT5
R6 21
R16 24
R2 18
C2 27
C1 27
40
1
37
SEE NOTE 8
Q4 34
FT8
R10 15
FT2
R1 16
Q1 31
R3 25
FT1
R4 17
R7 17
FT3
CR2 45
R9 21
Q2 30
14
R15 22
R28 21
FT4
FT10
T2
1
2
3
4
5
E
B
C
K
CR1
SEE NOTE 8
Q5 34
T2 32
R11 19
FT9
R14 23
FT7
R12 22
R13 23
C3 & C4 .075 .057

VIEW B-B
BEFORE ENCAPSULATION


8 TYP. 2 PLACES SEE NOTE 7
9 TYP. 2 PLACES
12 TYP. 2 PLACES
10 TYP. 2 PLACES
11 TYP. 2 PLACES
.02 .12
SEE NOTE 23
SECTION A-A
.00 .10
SEE NOTE 19 35
CR2 45
PARTIAL SECTION C-C
SEE NOTE 18 8 REQD 6
36
SEE NOTE 18 8 REQD 7
ENCAPSULATION LIMIT
.250 MAX
SEE NOTE 21
.000 .030 9 PLACES
.000 .015
SEE NOTE 12 3
.000 .015
38 SEE NOTE 16
41 SEE NOTE 16
.000 .005
.000 .015 TYP, 18 PLACES
14 SEE NOTE 12
37 SEE NOTE 15
.06 TYP, 18 PLACES
1.560 1.540

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	MIT INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
FRACTIONS + − DECIMALS + − ANGLES + −	DRAWN Orgel DATE 25 SEP 64 CHECKED Womack 3 OCT 64 APPROVAL APPROVAL	AMPLIFIER 1%-800CPS MODULE ASSEMBLY
DO NOT SCALE THIS DRAWING		
MATERIAL	NASA APPROVAL	CODE IDENT NO. 80230 · SIZE E · 1007547
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 5/1 · SHEET 2 OF 2

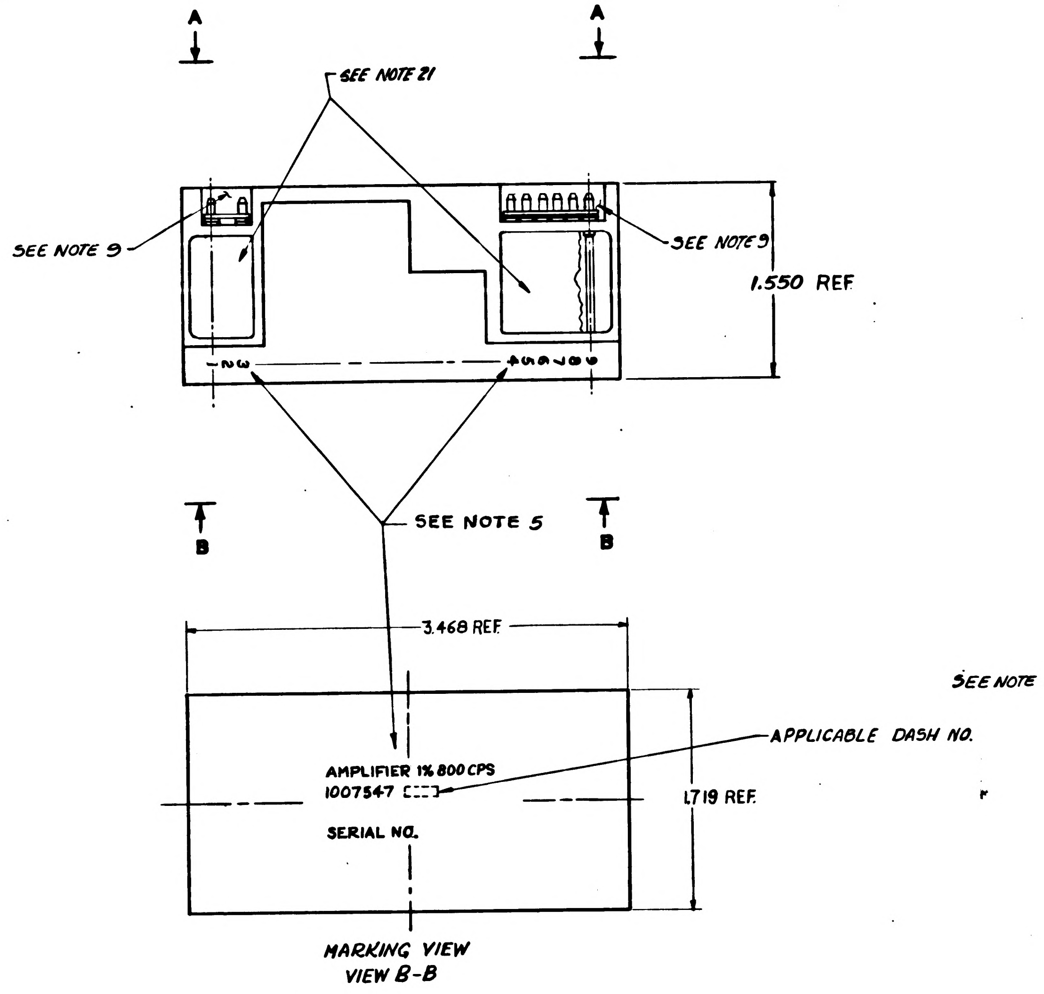
1007547 N

TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 15496		[illegible]	
B		REVISED PER TDRR 16638		24 FEB 65	JP
C		REVISED PER TDRR-17313		12 MAR 65	
D		REVISED PER TDRR 17610		24 MAR 65	
E		REVISED PER TDRR 17965		6 APR 65	JJ
F		REVISED PER TDRR [illegible]9514		27 APR 65	
G		REVISED PER TDRR [illegible]399		4 JUN 65	
H		REVISED PER TDRR [illegible]441		3 JUN 65	
J		REVISED PER TDRR [illegible]568		4 JUN 65	
K		REVISED PER TDRR 20[illegible]49		19 JUN 65	
L		REVISED PER TDRR 207[illegible]8		17 JULY 65	JP
V		REVISED PER TDRR 229[illegible]0		12 [illegible] 65	JJ
N		REVISED PER TDRR 2393[illegible]		16 NOV 65	JJ
P		REVISED PER TDRR 23[illegible]		10 NOV 65	



MARKING VIEW
VIEW B-B

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009 METHOD J.
3. UNLESS OTHERWISE SPECIFIED:
   WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
4. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005.
5. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. COAT THREADS AND ITEM 32 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
7. MOUNTING TORQUE FOR ITEM 8 24 IN-LBS ± 2 IN-LBS.
8. SOLDER PER ND1002071
9. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. ~~BOND ITEM NUMBERS 42 AND 43 TO ITEM 1 PER ND1002237.~~
11. AR DENOTES AS REQUIRED
12. ON ITEMS 3 AND 4:

    K INDICATES CATHODE END.
    FT ( ) INDICATES FEED THRU.
    PLUS (+) INDICATES POSITVE END OF CAPACITOR.
    C - INDICATES COLLECTOR LEAD OF TRANSISTOR.
    B - BASE
    E - EMITTER
    C_A COLLECTOR
    B_A BASE
    E_A EMITTER
    C_B COLLECTOR
    B_B BASE
    E_B EMITTER
    MULTI STAGE TRANSISTOR.

13. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
14. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
15. TYPICAL SLEEVING FOR R3, R5, R6, R8 R9, R12, R13, R14, R15 AND R16
16. TYPICAL ~~SLEEVING AND~~ WIRE FOR FT1 THRU FT10.
17. VALUE OF R11 AND R17 TO BE DETERMINED BY ELECTRICAL TEST PER ATP1007047 PARTS TO BE SELECTED FROM CHARTS, VALUE IS IN OHMS.
18. ASSEMBLE PER ND1002136.
19. BOND ITEM NO. 35 TO ITEM NO. 29. CURE AT AIR TEMPERATURE BEFORE ASSEMBLY TO ITEM NO. 1
20. PROCURE PER PS1007047.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE, SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT 2.5, ½ WIDE
23. FILL PER ND1002117
24. ~~BOND A .25 MIN WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
26. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
27. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
28. AFTER ENCAPSULATION BUT PRIOR TO PAINTING, PROVIDE A 45° X APPROX. .06 CHAMFER IN THE FOAM ALONG THE ENTIRE FOAM TO HEATSINK EXTERNAL INTERFACES. FILL THE CHAMFERED AREA FLUSH TO WITHIN .016 BELOW SURFACE USING ND1002187, TYPE II.

SELECTION CHART FOR R11

PART NUMBER	VALUE	PART NUMBER	VALUE
1010364-411	6810	1010364-325	2430
413	698C	329	2550
415	7150	337	2800
417	7320	343	3010
419	7500	351	3320
421	7680	355	3480
		361	3740
		367	4020
		371	4220
		375	4420
		377	4530
		381	4750
		385	4990
		387	5110
		391	5360
		395	5620
		399	5900
		403	6190
		405	6340
		409	6650

SELECTION CHART FOR R17

PART NUMBER	VALUE
1006750-84	150K
-56	10K
-49	5.1K
-44	3.3K
-41	2.4K
-38	1.8K
-36	1.5K
-34	1.2K
-32	1.0K
-30	820
-29	750
-27	620
-25	510
-23	430
-22	390
-20	330
-18	270
-16	220

SEE NOTE 17

SEE NOTE 17

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
					REF	1009525	SCHEMATIC DIAGRAM ELECTRICAL
			AR		46	1010848-2	WIRE, ELECTRICAL - NICKEL
			1		45	1010829-2	DIODE
			1		44	1006750-	RESISTOR, FIXED
			1		43	1008540-3	GASKET, CONNECTOR, MINAT.
			1		42	1008540-6	GASKET, CONNECTOR, MINAT.
			~~AR~~		41	~~1006757-8~~	~~WIRE, ELECTRICAL .020 DIA~~
			AR		40	1006757-1	WIRE, ELECTRICAL .010 × .020
			AR		39	1006757-9	WIRE, ELECTRICAL .032 DIA
			~~AR~~		38	~~-22~~	~~INSULATION SLEEVING, ELECTRICAL~~
			AR		37	-21	INSULATION SLEEVING, ELECTRICAL
			AR		36	1006776-20	INSULATION SLEEVING, ELECTRICAL
			AR		35	SEE NOTE 22	INSULATION TAPE, ELECTRICAL
			1		34	1010273-3	TRANSISTOR (MATCHED PAIR)
			1		33	1010324	TRANSFORMER
			1		32	1010307	TRANSFORMER
			1		31	1010431	TRANSISTOR
			1		30	1010345-2	TRANSISTOR (MATCHED PAIR)
			~~1~~		29	~~1010265-2~~	~~SEMICONDUCTOR DEVICE, DIODE~~
			1		28	1010372-15	SEMICONDUCTOR DEVICE, DIODE
			2		27	1010264-9	CAPACITOR, FIXED
			2		26	1010264-37	CAPACITOR, FIXED
			1		25	-57	
			1		24	-56	
			2		23	-25	
			2		22	-12	
			4		21	1006750-1	
			~~2~~		20	~~1010369-1~~	
			1		19	1010364-	
			1		18	-573	
			2		17	-327	
			1		16	-309	
			1		15	1010364-273	RESISTOR, FIXED
			2		14	1008025-2	INSULATOR, BUSHING
			2		13	1000093-13	SCREW
			2		12	1008024-4	WASHER, INSULATOR
			2		11	1008024-3	WASHER, INSULATOR
			2		10	1008021-2	BUSHING, INSULATOR
			2		9	1008071-5	WASHER, FLAT
			2		8	MS20341-416B	NUT
			8		7	1006775	INSULATOR
			8		6	1006782-5	CONTACT, WRAPOST-MALE
					5		
			~~1~~		4	~~1008308~~	
			~~1~~		3	~~1008307~~	~~INSULATOR~~
					2		
			1		1	1008306	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007572		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± .XX ±.02 ±
.XXX ±.005
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

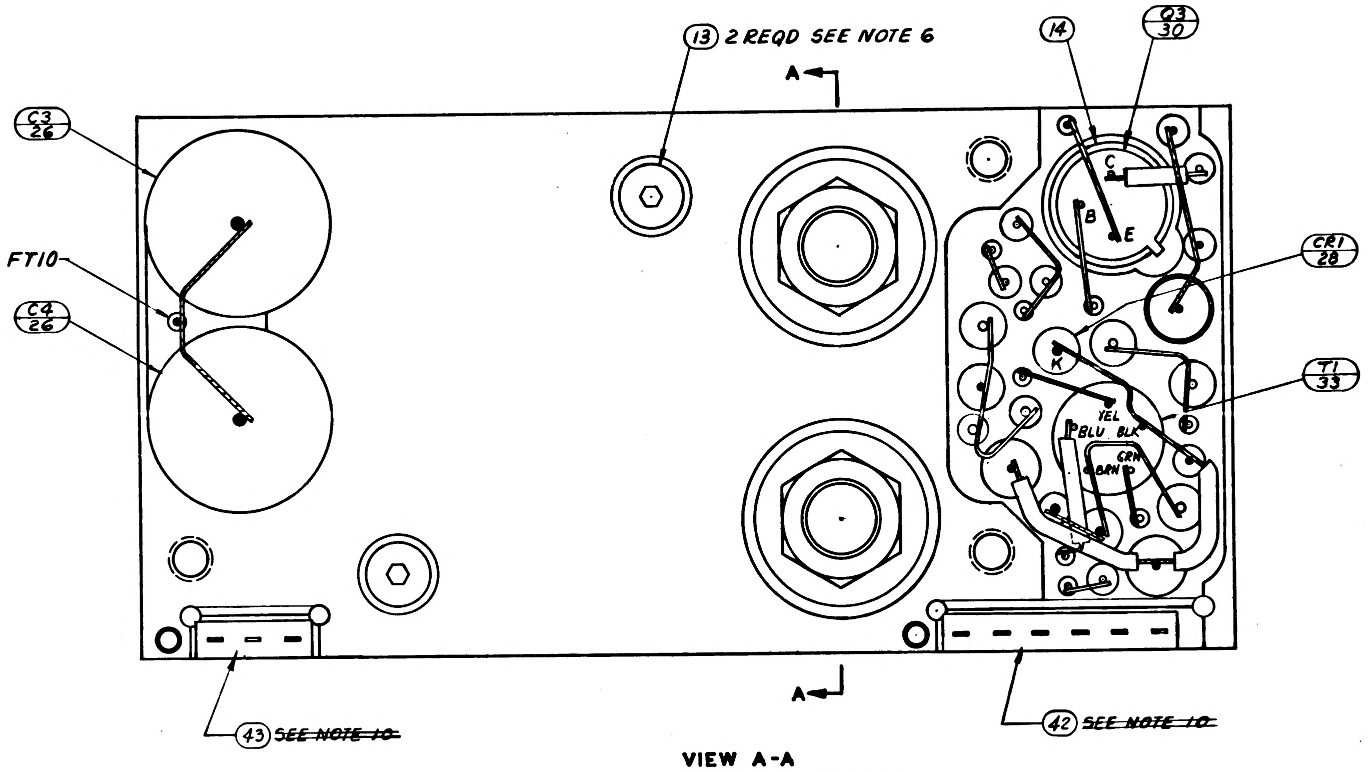
MIT
INSTRUMENTATION LAB
Cambridge Mass
DRAWN Ouzel 26 SEP 64 DATE
CHECKED 3 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1007547
SCALE 2/1
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 15490		FEB 65	
B		REVISED PER TDRR 16 38		24 FEB 65	JWP
C		REVISED PER TDRR 173		12 MAR 65	B.
D		REVISED PER TDRR 17 0		24 MAR 65	HTO
E		REVISED PER TDRR 17 65		6 APR 65	JJ
F		REVISED PER TDRR 18 4		65	K.W.T.
G		REVISED PER TDRR 99			
H		REVISED PER TDRR 141			
J		REVISED PER TDRR			
K		REVISED PER TDRR 20		19 JUL 65	KD
L		REVISION STATUS CHANGE PER TDRR 20788		19 JULY 65	JJR
M		REVISED PER TDRR 223		65	
N		REVISION STATUS CHANGE		65	
P		REVISED PER TDRR 233			



13 2 REQD SEE NOTE 6
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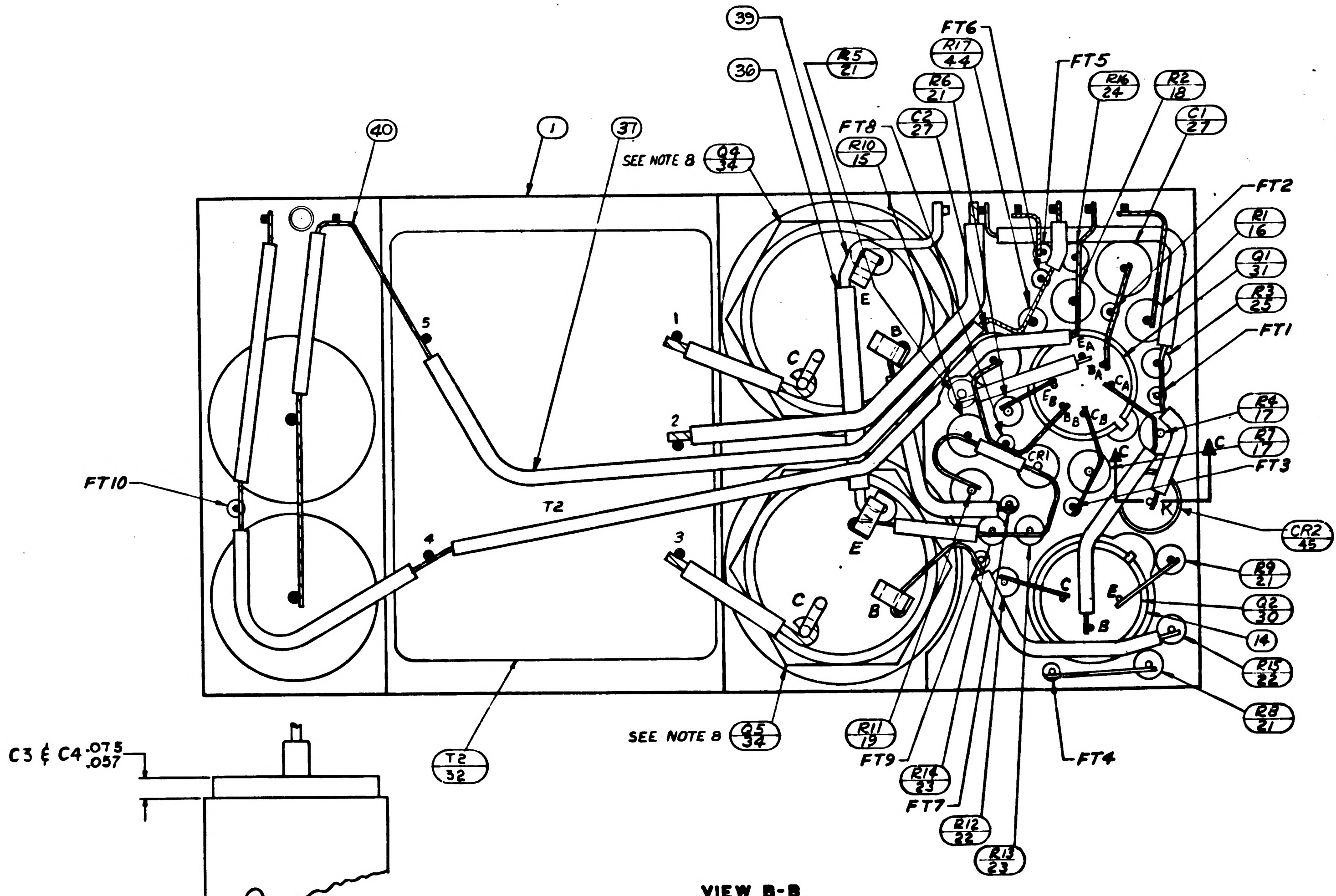
14
Q3 30
C3 26
FT10
C4 26
CR1 28
T1 33
C
B
E
K
YEL
BLU
BLK
GRN
BRN
43 SEE NOTE 10
42 SEE NOTE 10

VIEW A-A
BEFORE ENCAPSULATION



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36
R5 21
FT6
R17 44
FT5
R16 24
R2 18
C1 27
40
1
37
SEE NOTE 8
Q4 34
FT8
R10 15
C2 27
R6 21
FT2
R1 16
Q1 31
R3 25
FT1
R4 17
R7 17
FT3
CR2 45
R9 21
Q2 30
14
R15 22
R8 21
FT4
FT10
T2
T2 32
SEE NOTE 8
Q5 34
R11 19
FT9
R14 23
FT7
R12 22
R13 23
1
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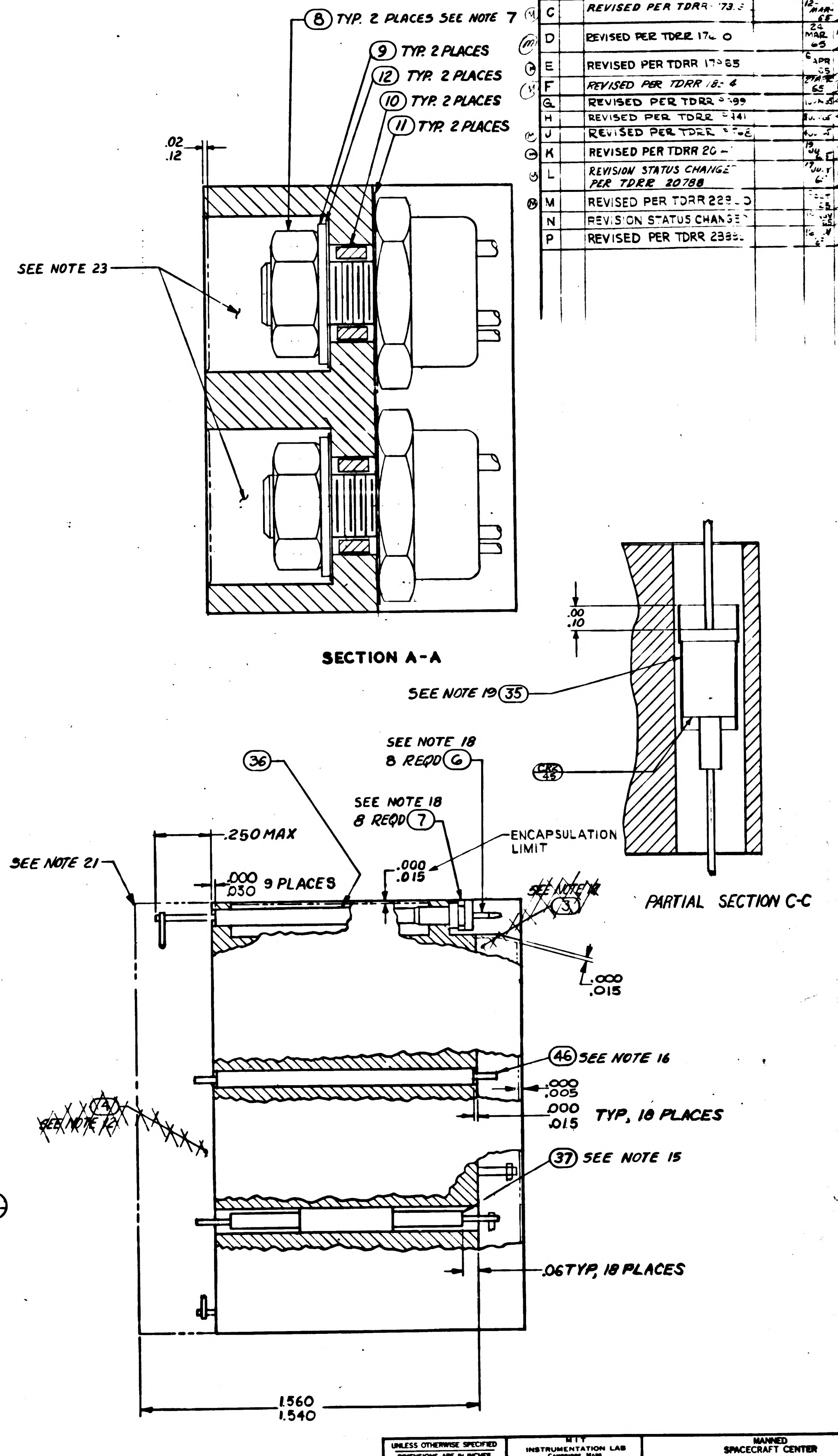
3
4
5
C
B
E
K
CR1
C3 & C4 .075 .057

VIEW B-B
BEFORE ENCAPSULATION



8 TYP. 2 PLACES SEE NOTE 7
9 TYP. 2 PLACES
12 TYP. 2 PLACES
10 TYP. 2 PLACES
11 TYP. 2 PLACES
.02 .12
SEE NOTE 23
SEE NOTE 19 35
.00 .10
CR6 45
36
SEE NOTE 18 8 REQD 6
SEE NOTE 18 8 REQD 7
ENCAPSULATION LIMIT
.250 MAX
SEE NOTE 21
.000 .030 9 PLACES
.000 .015
SEE NOTE 12 3
.000 .015
46 SEE NOTE 16
.000 .005
.000 .015 TYP, 18 PLACES
37 SEE NOTE 15
SEE NOTE 12 14
.06 TYP, 18 PLACES
1.560 1.540

SECTION A-A

PARTIAL SECTION C-C

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON			MIT INSTRUMENTATION LAB Cambridge Mass	MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
FRACTIONS	DECIMALS	ANGLES	DRAWN Orgal DATE 25 Sep 64	AMPLIFIER 1%-800CPS MODULE ASSEMBLY		
+ -	+ -	+ -	CHECKED Wonch 3 OCT 64			
			APPROVAL			
DO NOT SCALE THIS DRAWING			APPROVAL			
MATERIAL			NASA APPROVAL W.J. 11-6-64	CODE IDENT NO. 80230	SIZE E	1007547
CONTRACT NAS 9-497			MIT APPROVAL	SCALE 5/1		SHEET 2 OF 2

TABLE I

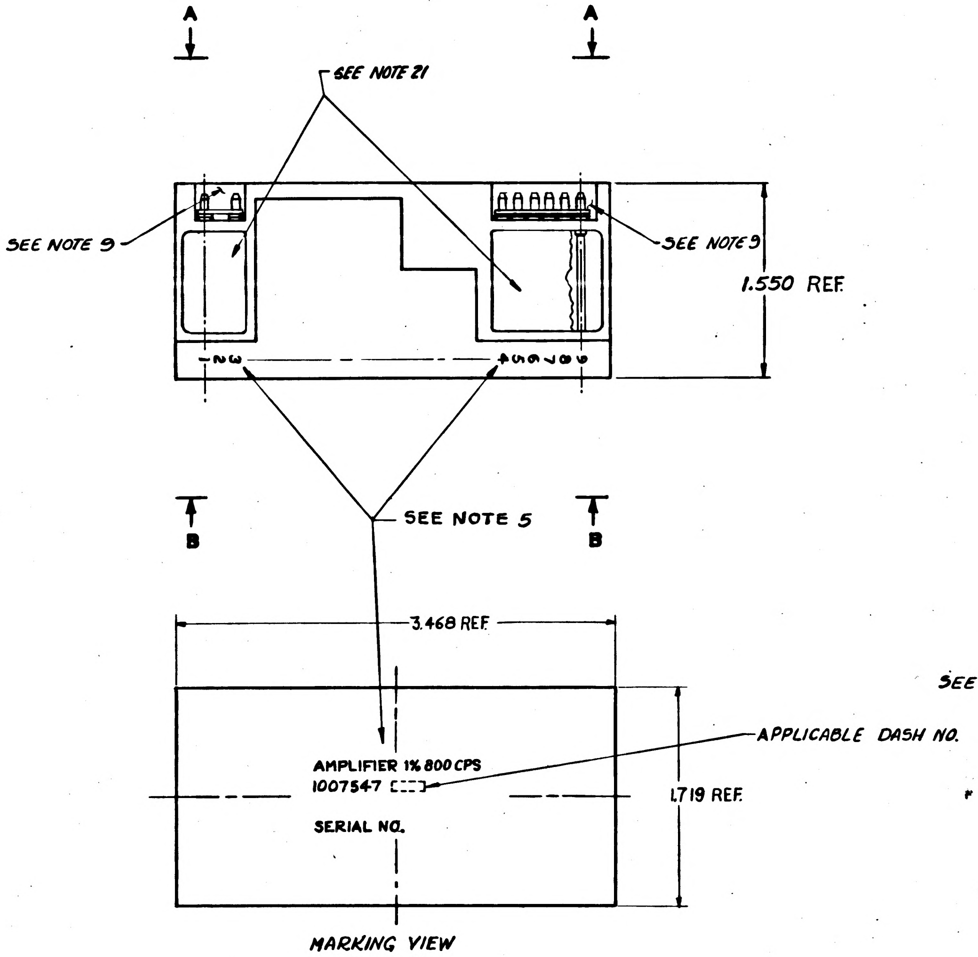
CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA .12 FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ± .03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND 1002009 METHOD J.
3. UNLESS OTHERWISE SPECIFIED:
   WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
4. ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005.
5. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
6. COAT THREADS AND ITEM 32 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
7. MOUNTING TORQUE FOR ITEM 8 24 IN-LBS ± 2 IN-LBS.
8. SOLDER PER ND 1002071
9. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. ~~BOND ITEM NUMBERS 42 AND 43 TO ITEM 1 PER ND 1002237.~~
11. AR DENOTES AS REQUIRED
12. ON ITEMS 3 AND 4:

K INDICATES CATHODE END.
FT ( ) INDICATES FEED THRU.
PLUS (+) INDICATES POSITVE END OF CAPACITOR.
C - INDICATES COLLECTOR LEAD OF TRANSISTOR.
B - BASE
E - EMITTER
C_A COLLECTOR
B_A BASE
E_A EMITTER
C_B COLLECTOR
B_B BASE
E_B EMITTER
MULTI STAGE TRANSISTOR.

13. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
14. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
15. TYPICAL SLEEVING FOR R3, R5, R6, R8 R9, R12, R13, R14, R15 AND R16
16. TYPICAL ~~SLEEVING AND~~ WIRE FOR FT1 THRU FT10.
17. VALUE OF R11 AND R17 TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007077 PARTS TO BE SELECTED FROM CHARTS, VALUE IS IN OHMS.
18. ASSEMBLE PER ND 1002136.
19. BOND ITEM NO. 35 TO ITEM NO. 29. CURE AT AIR TEMPERATURE BEFORE ASSEMBLY TO ITEM NO. 1
20. PROCURE PER PS 1007047.
21. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE, SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT 2.5, ½ WIDE
23. FILL PER ND 1002117
24. ~~BOND A .25 MIN WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
26. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.



MARKING VIEW
VIEW B-B

29. MOISTUREPROOF PER ND 1002292 AS REQUIRED BY ITEM NO. (47) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.

SELECTION CHART FOR R11

PART NUMBER	VALUE	PART NUMBER	VALUE
1010364-411	6810	1010364-325	2430
413	6980	329	2550
415	7150	337	2800
417	7320	343	3010
419	7500	351	3320
421	7680	355	3480
		361	3740
		367	4020
		371	4220
		375	4420
		377	4530
		381	4750
		385	4990
		387	5110
		391	5360
		395	5620
		399	5900
		403	6190
		405	6340
		409	6650

SELECTION CHART FOR R17

PART NUMBER	VALUE
1006750-84	150K
-56	10K
-49	5.1K
-44	3.3K
-41	2.4K
-38	1.8K
-36	1.5K
-34	1.2K
-32	1.0K
-30	820
-29	750
-27	620
-25	510
-23	430
-22	390
-20	330
-18	270
-16	220

27. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
28. AFTER ENCAPSULATION BUT PRIOR TO PAINTING, PROVIDE A 45° X APPROX. .06 CHAMFER IN THE FOAM ALONG THE ENTIRE FOAM TO HEATSINK EXTERNAL INTERFACES. FILL THE CHAMFERED AREA FLUSH TO WITHIN .016 BELOW SURFACE USING ND 1002187, TYPE II.

SEE NOTE 17 (item 44)
SEE NOTE 17 (item 19)

LIST OF PARTS AND MATERIALS

		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		AR	—		47	SEE NOTE 29	MOISTUREPROOFING
		☒	☒		REF	1009525	SCHEMATIC DIAGRAM ELECTRICAL
		AR	AR		46	1010848-2	WIRE, ELECTRICAL-NICKEL
		1	1		45	1010829-2	DIODE
		1	1		44	1006750-	RESISTOR, FIXED
		1	1		43	1008540-3	GASKET, CONNECTOR, MINAT.
		1	1		42	1008540-6	GASKET, CONNECTOR, MINAT.
			~~AR~~		41	~~1006757-8~~	~~WIRE, ELECTRICAL .020 DIA~~
		AR	AR		40	1006757-1	WIRE, ELECTRICAL .010 × .020
		AR	AR		39	1006757-9	WIRE, ELECTRICAL .032 DIA
			~~AR~~		38	~~-22~~	~~INSULATION SLEEVING, ELECTRICAL~~
		AR	AR		37	↑ -21	INSULATION SLEEVING, ELECTRICAL
		AR	AR		36	1006776-20	INSULATION SLEEVING, ELECTRICAL
		AR	AR		35	SEE NOTE 22	INSULATION TAPE, ELECTRICAL
		1	1		34	1010273-3	TRANSISTOR (MATCHED PAIR)
		1	1		33	1010324	TRANSFORMER
		1	1		32	1010307	TRANSFORMER
		1	1		31	1010431	TRANSISTOR
		1	1		30	1010345-2	TRANSISTOR (MATCHED PAIR)
			~~1~~		29	~~1010265-2~~	~~SEMICONDUCTOR DEVICE, DIODE~~
		1	1		28	1010372-15	SEMICONDUCTOR DEVICE, DIODE
		2	2		27	1010264-9	CAPACITOR, FIXED
		2	2		26	1010264-37	CAPACITOR, FIXED
		1	1		25	↑ -57	↑ ↑
		1	1		24	-56	
		2	2		23	-25	
		2	2		22	-12	
		4	4		21	1006750-1	
			~~2~~		~~20~~	~~1010369-1~~	
		1	1		19	1010364-	
		1	1		18	↑ -573	
		2	2		17	-327	
		1	1		16	-309	
		1	1		15	1010364-273	RESISTOR, FIXED
		2	2		14	1008025-2	INSULATOR, BUSHING
		2	2		13	1000093-13	SCREW
		2	2		12	1008024-4	WASHER, INSULATOR
		2	2		11	1008024-3	WASHER, INSULATOR
		2	2		10	1008021-2	BUSHING, INSULATOR
		2	2		9	1008071-5	WASHER, FLAT
		2	2		8	MS20341-416B	NUT
		8	8		7	1006775	INSULATOR
		8	8		6	1006782-5	CONTACT, WRAPOST-MALE
					5		
			~~1~~		~~4~~	~~1008308~~	↑
			~~1~~		~~3~~	~~1008307~~	~~INSULATOR~~
					2		
		1	1		1	1008306	HEATSINK
QUANTITY REQUIRED							

REVISIONS

	SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
(M)	A		REVISED PER TDRR 15496		FEB 65	JJ
(M)	B		REVISED PER TDRR 16638		24 FEB 65	WP
(M)	C		REVISED PER TDRR-17313		12 MAR 65	
(M)	D		REVISED PER TDRR 17610		24 MAR 65	
(M)	E		REVISED PER TDRR 17965		APR 65	JJ
(M)	F		REVISED PER TDRR 18514		65	
	G		REVISED PER TDRR 19399		4 JUN 65	
	H		REVISED PER TDRR 19441		3 JUN 65	
(M)	J		REVISED PER TDRR 19568		4 JUN 65	
(M)	K		REVISED PER TDRR 20143		19 JUN 65	KD
(M)	L		REVISED PER TDRR 20788		17 JULY 65	JR
(M)	M		REVISED PER TDRR 22930		12 OCT 65	JJ
	N		REVISED PER TDRR 23903		16 NOV 65	JJ
(M)	P		REVISED PER TDRR 23888		16 NOV 65	
	R		REVISED PER TDRR 26397		24 FEB 66	RP

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007572		
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ANGLES ±
.XX ±.02
.XXX ±.005
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

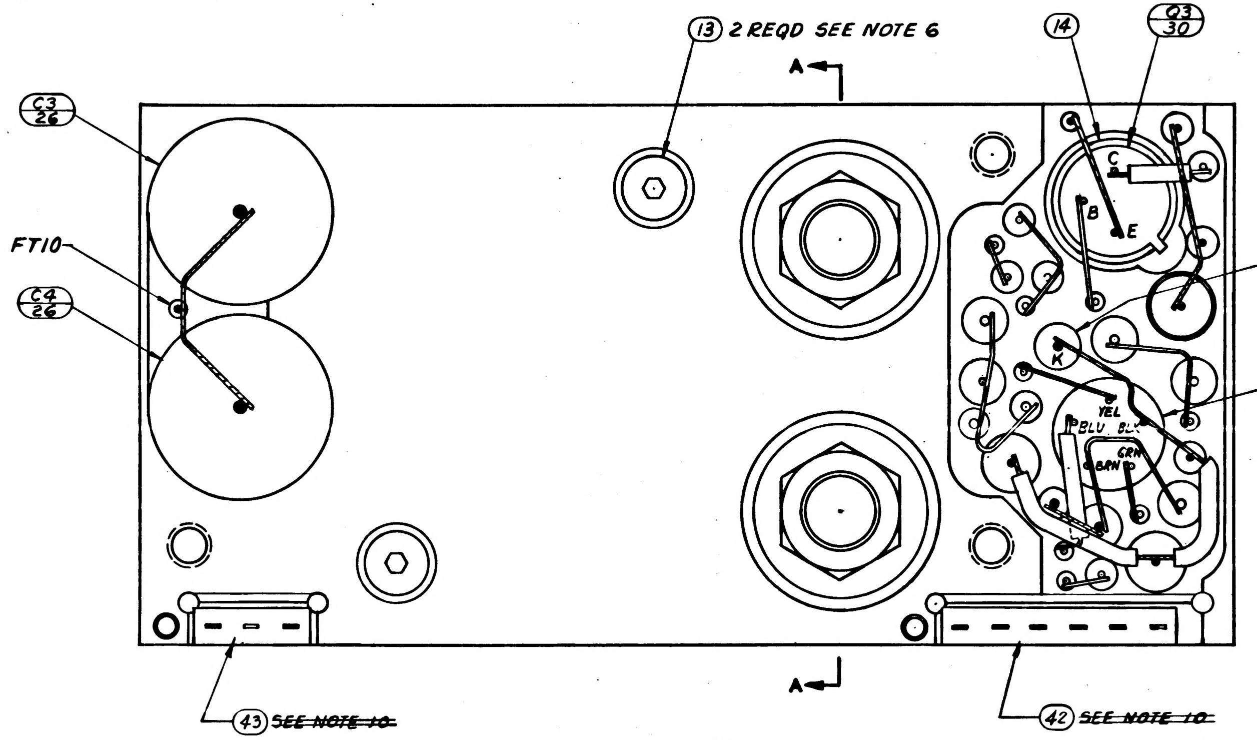
MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Ozel DATE 26 SEP 64
CHECKED A. Udovich 3 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1007547
SCALE 2/1
SHEET 1 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 15496		FEB 65	
B		REVISED PER TDRR 16_38		24 FEB 65	JWP
C		REVISED PER TDRR-17313		12-MAR-65	B.
D		REVISED PER TDRR 17610		24 MAR 65	HTQ
E		REVISED PER TDRR 17965		6 APR 65	JJJ
F		REVISED PER TDRR 18_4		27 APR 65	R.W.T.
G		REVISED PER TDRR _399		JUN 65	
H		REVISED PER TDRR _141		JUN 65	
J		REVISED PER TDRR _568		JUN 65	
K		REVISED PER TDRR 20_		19 JUL 65	
L		REVISION STATUS CHANGED PER TDRR 20788		19 JULY 65	
M		REVISED PER TDRR 229_0		OCT 65	
N		REVISION STATUS CHANGED		NOV 65	
P		REVISED PER TDRR 2388_		16 NOV 65	
R		REVISION STATUS CHANGED		24 FEB 66	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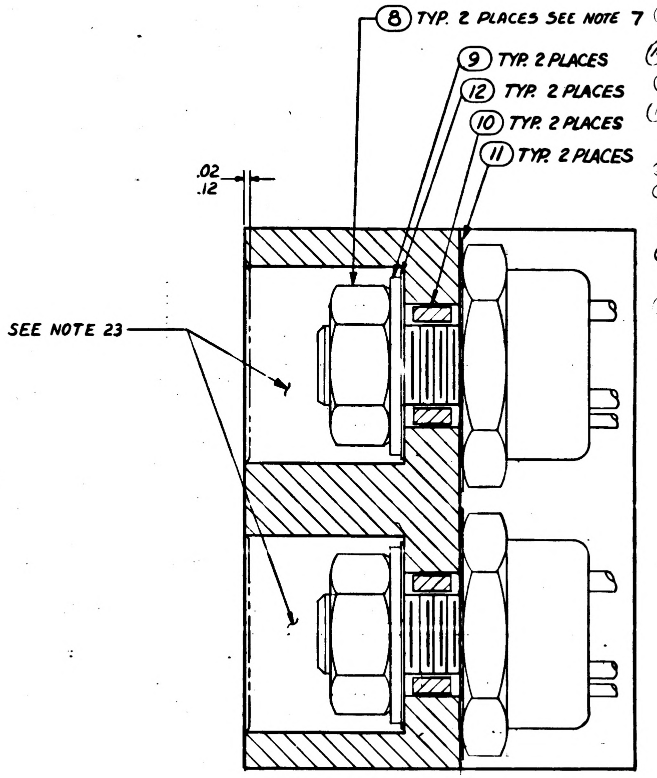
C3 26
FT10
C4 26
CR1 28
T1 33
C
B
E
K
YEL
BLU
BLK
GRN
BRN
43 ~~SEE NOTE 10~~
42 ~~SEE NOTE 10~~

VIEW A-A
BEFORE ENCAPSULATION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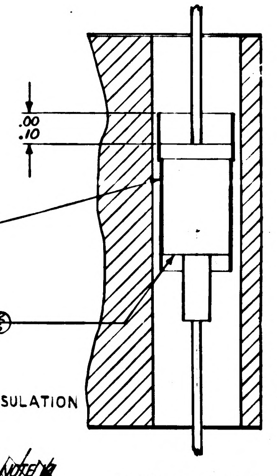
9 TYP. 2 PLACES
12 TYP. 2 PLACES
10 TYP. 2 PLACES
11 TYP. 2 PLACES
.02
.12
SEE NOTE 23

SECTION A-A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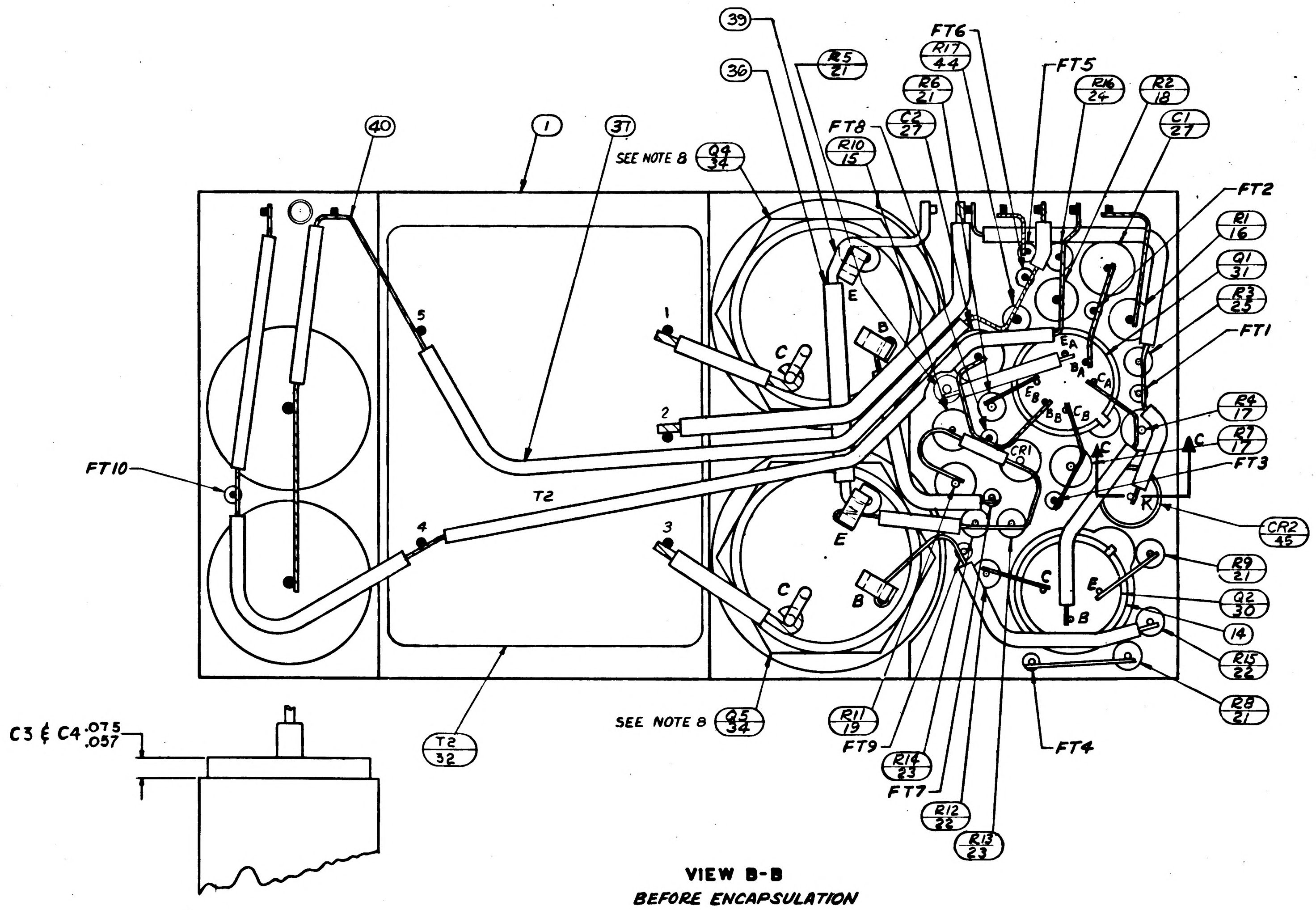
SEE NOTE 19 35
CR2 35

PARTIAL SECTION C-C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R5 21
FT6
R17 44
FT5
R26 21
R16 24
R2 18
C1 27
FT8
C2 27
R10 15
Q4 34
SEE NOTE 8
37
1
40
FT2
R1 16
Q1 31
R3 25
FT1
R4 17
R7 17
C
FT3
CR2 45
R9 21
Q2 30
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R15 22
R8 21
FT4
R13 23
R12 22
FT7
R14 23
FT9
R11 19
SEE NOTE 8
Q5 34
T2 32
T2
FT10
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EA
BA
CA
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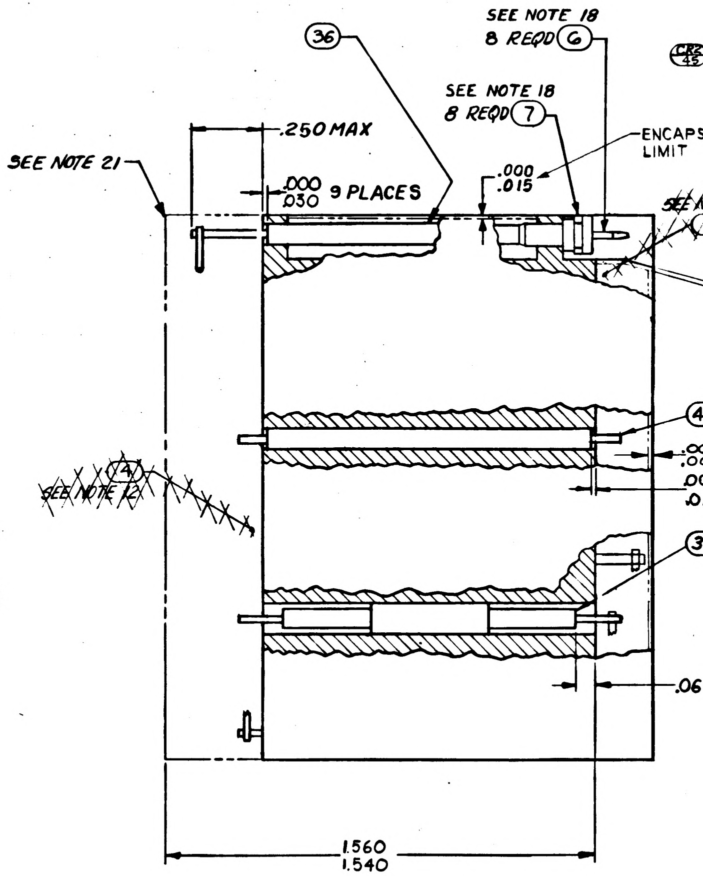
BB
CB
CR1
K
C3 & C4 .075 .057

VIEW B-B
BEFORE ENCAPSULATION


36
SEE NOTE 18 8 REQD 6
SEE NOTE 18 8 REQD 7
ENCAPSULATION LIMIT
.250 MAX
.000 .030 9 PLACES
.000 .015
SEE NOTE 21
~~SEE NOTE 12~~ 3
.000 .015
~~SEE NOTE 12~~ 4
46 SEE NOTE 16
.000 .005
.000 .015 TYP, 18 PLACES
37 SEE NOTE 15
.06 TYP, 18 PLACES
1.560
1.540

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orgel DATE 25 SEP 64
CHECKED Udovach 3 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1007547
SCALE 5/1
SHEET 2 OF 2

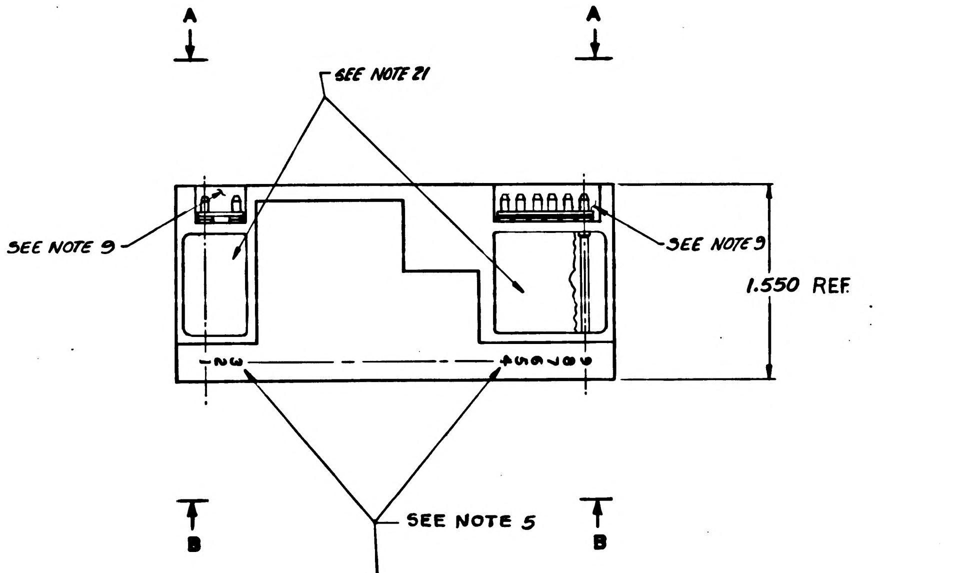
1007547

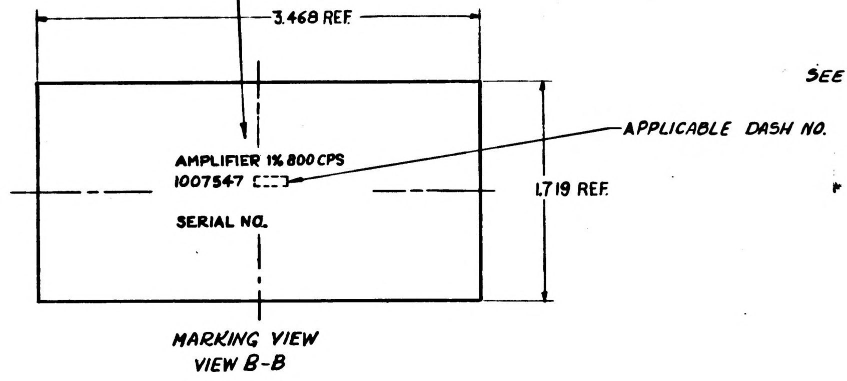
TABLE I

CONFIGURATION	BOND BETWEEN WAFER AND HEATSINK	TOP OF WAFER	HEATSINK-FOAM CONTACT SURFACE ADJACENT TO HEATSINK EXTERNAL SURFACE
WAFER & FLAT HEATSINK	100% OF AREA ½ FROM EXTERNAL HEATSINK SURFACE. 80% OF AREA .25 FROM EXTERNAL HEATSINK SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
WAFER AND ADJACENT VERTICAL HEATSINK SURFACE	CORNER FILLET AND VERTICAL SURFACE TO WITHIN .03 ±.03 OF EXTERNAL SURFACE	100% OF AREA .25 FROM EXTERNAL MODULE SURFACE	N/A
HEATSINK FOAM CONTACT SURFACE PERIMETER	N/A	N/A	.25 MIN WIDTH OR TOTAL AVAILABLE ON 90% OF PERIMETER TO WITHIN .03 ± .03 OF EXTERNAL EDGE

REVISIONS

	SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
(M)	A		REVISED PER TDRR 15496		FEB 65	J
(M)	B		REVISED PER TDRR 16638		24 FEB 65	JP
(M)	C		REVISED PER TDRR-17313		12 MAR 65	R.
(M)	D		REVISED PER TDRR 17610		24 MAR 65	
(M)	E		REVISED PER TDRR 17965		APR 65	J
(M)	F		REVISED PER TDRR 18514		27 APR 65	
	G		REVISED PER TDRR 19399		1 JUN 65	
	H		REVISED PER TDRR 19441		3 JUN 65	
(M)	J		REVISED PER TDRR 19568		4 JUN 65	
(M)	K		REVISED PER TDRR 20143		19 JUN 65	
(M)	L		REVISED PER TDRR 20788		17 JULY 65	JR
(M)	M		REVISED PER TDRR 22960		12 OCT 65	J
	N		REVISED PER TDRR 23903		16 NOV 65	
(M)	P		REVISED PER TDRR 23888		6 NOV 65	
(M)	R		REVISED PER TDRR 26397		24 FEB 66	
	S		REVISED PER TDRR 29752		JUN 6	





MARKING VIEW
VIEW B-B

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND 1002009 METHOD J.
3. UNLESS OTHERWISE SPECIFIED:
   WIRING SHALL MEET THE REQUIREMENTS OF ND 1002069.
4. ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005.
5. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN.
6. COAT THREADS AND ITEM 32 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
7. MOUNTING TORQUE FOR ITEM 8 24 IN-LBS ± 2 IN-LBS.
8. SOLDER PER ND 1002071
9. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. ~~BOND ITEM NUMBERS 42 AND 43 TO ITEM 1 PER ND 1002237.~~
11. AR DENOTES AS REQUIRED
12. ON ITEMS 3 AND 4:

    K INDICATES CATHODE END.
    FT ( ) INDICATES FEED THRU.
    PLUS (+) INDICATES POSITVE END OF CAPACITOR.
    C - INDICATES COLLECTOR LEAD OF TRANSISTOR.
    B - BASE
    E - EMITTER
    C_A COLLECTOR
    B_A BASE
    E_A EMITTER
    C_B COLLECTOR
    B_B BASE
    E_B EMITTER

    MULTI STAGE TRANSISTOR.
13. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
14. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
15. TYPICAL SLEEVING FOR R3, R5, R6, R8 R9, R12, R13, R14, R15 AND R16
16. TYPICAL ~~SLEEVING AND~~ WIRE FOR FT1 THRU FT10.
17. VALUE OF R11 AND R17 TO BE DETERMINED BY ELECTRICAL TEST PER ATP 1007047 PARTS TO BE SELECTED FROM CHARTS, VALUE IS IN OHMS.
18. ASSEMBLE PER ND 1002136.
19. BOND ITEM NO. 35 TO ITEM NO. 29. CURE AT AIR TEMPERATURE BEFORE ASSEMBLY TO ITEM NO. 1
20. PROCURE PER PS 1007047.
21. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE, SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT 2.5, ½ WIDE
23. FILL PER ND 1002117
24. ~~BOND A .25 MIN WIDE PERIMETER OF THE TOP AND BOTTOM INSULATORS TO THE HEATSINK AND COAT A .25 MIN. WIDE PERIMETER ON THE OUTSIDE SURFACE OF THE INSULATORS PER ND 1002187 TYPE I.~~
25. ~~CLEAN MODULE WHERE POSSIBLE PRIOR TO BONDING OF WAFER BOARDS AND APPLICATION OF COATING MATERIAL BY DEGREASING WITH FREON AND ISO PROPYL ALCOHOL. ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II. APPLY MATERIAL AND COATING AS INDICATED IN TABLE I.~~
26. EXCEPT FOR MODULE MOUNTING SURFACE, PAINT ALL SURFACES PER ND 1002279, USING 1010992 PRIMER AND 1008809-4 PAINT. CONNECTOR PIN BLADES AND INSULATORS TO BE FREE OF PAINT.
27. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL PRIOR TO ENCAPSULATION.
28. AFTER ENCAPSULATION BUT PRIOR TO PAINTING, PROVIDE A 45° X APPROX. .06 CHAMFER IN THE FOAM ALONG THE ENTIRE FOAM TO HEATSINK EXTERNAL INTERFACES. FILL THE CHAMFERED AREA FLUSH TO WITHIN .016 BELOW SURFACE USING ND 1002187, TYPE II.
29. MOISTUREPROOF PER ND 1002292 AS REQUIRED BY ITEM NO. (47) USING INSULATION TAPE IN ACCORDANCE WITH SCD 1008866 AND POLYURETHANE COATING PER SCD 1008867 AFTER PAINTING AND STENCILLING.

SELECTION CHART FOR R11

PART NUMBER	VALUE	PART NUMBER	VALUE
1010364-411	6810	1010364-325	2430
413	6980	329	2550
415	7150	337	2800
417	7320	343	3010
419	7500	351	3320
421	7680	355	3480
		361	3740
		367	4020
		371	4220
		375	4420
		377	4530
		381	4750
		385	4990
		387	5110
		391	5360
		395	5620
		399	5900
		403	6190
		405	6340
		409	6650

SELECTION CHART FOR R17

PART NUMBER	VALUE
1006750-84	150K
-56	10K
-49	5.1K
-44	3.3K
-41	2.4K
-38	1.8K
-36	1.5K
-34	1.2K
-32	1.0K
-30	820
-29	750
-27	620
-25	510
-23	430
-22	390
-20	330
-18	270
-16	220

LIST OF PARTS AND MATERIALS

	QUANTITY REQUIRED		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			AR	—		47	SEE NOTE 29	MOISTUREPROOFING
			X	X		REF	1009525	SCHEMATIC DIAGRAM ELECTRICAL
			AR	AR		46	1010848-2	WIRE, ELECTRICAL - NICKEL
			1	1		45	1010829-2	DIODE
SEE NOTE 17			1	1		44	1006750-	RESISTOR, FIXED
			1	1		43	1008540-3	GASKET, CONNECTOR, MINAT.
			1	1		42	1008540-6	GASKET, CONNECTOR, MINAT.
				~~AR~~		~~41~~	~~1006757-8~~	~~WIRE, ELECTRICAL .020 DIA~~
			AR	AR		40	1006757-1	WIRE, ELECTRICAL .010 × .020
			AR	AR		39	1006757-9	WIRE, ELECTRICAL .032 DIA
				~~AR~~		~~38~~	~~-22~~	~~INSULATION SLEEVING, ELECTRICAL~~
			AR	AR		37	-21	INSULATION SLEEVING, ELECTRICAL
			AR	AR		36	1006776-20	INSULATION SLEEVING, ELECTRICAL
			AR	AR		35	SEE NOTE 22	INSULATION TAPE, ELECTRICAL
			1	1		34	1010273-3	TRANSISTOR (MATCHED PAIR)
			1	1		33	1010324	TRANSFORMER
			1	1		32	1010307	TRANSFORMER
			1	1		31	1010431	TRANSISTOR
			1	1		30	1008813-3	TRANSISTOR (MATCHED PAIR)
				~~1~~		~~29~~	~~1010265-2~~	~~SEMICONDUCTOR DEVICE DIODE~~
			1	1		28	1010372-15	SEMICONDUCTOR DEVICE, DIODE
			2	2		27	1010264-9	CAPACITOR, FIXED
			2	2		26	1010264-37	CAPACITOR, FIXED
			1	1		25	-57	
			1	1		24	-56	
			2	2		23	-25	
			2	2		22	-12	
			4	4		21	1006750-1	
				~~2~~		~~20~~	~~1010369-1~~	
SEE NOTE 17			1	1		19	1010364-	
			1	1		18	-573	
			2	2		17	-327	
			1	1		16	-309	
			1	1		15	1010364-273	RESISTOR, FIXED
			2	2		14	1008025-2	INSULATOR, BUSHING
			2	2		13	1000093-13	SCREW
			2	2		12	1008024-4	WASHER, INSULATOR
			2	2		11	1008024-3	WASHER, INSULATOR
			2	2		10	1008021-2	BUSHING, INSULATOR
			2	2		9	1008071-5	WASHER, FLAT
			2	2		8	MS20341-416B	NUT
			8	8		7	1006775	INSULATOR
			8	8		6	1006782-5	CONTACT, WRAPOST-MALE
						5		
				~~1~~		~~4~~	~~1008308~~	
				~~1~~		~~3~~	~~1008307~~	~~INSULATOR~~
						2		
			1	1		1	1008306	HEATSINK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007572		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± .XX ±.02 ±
.XXX ±.005
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

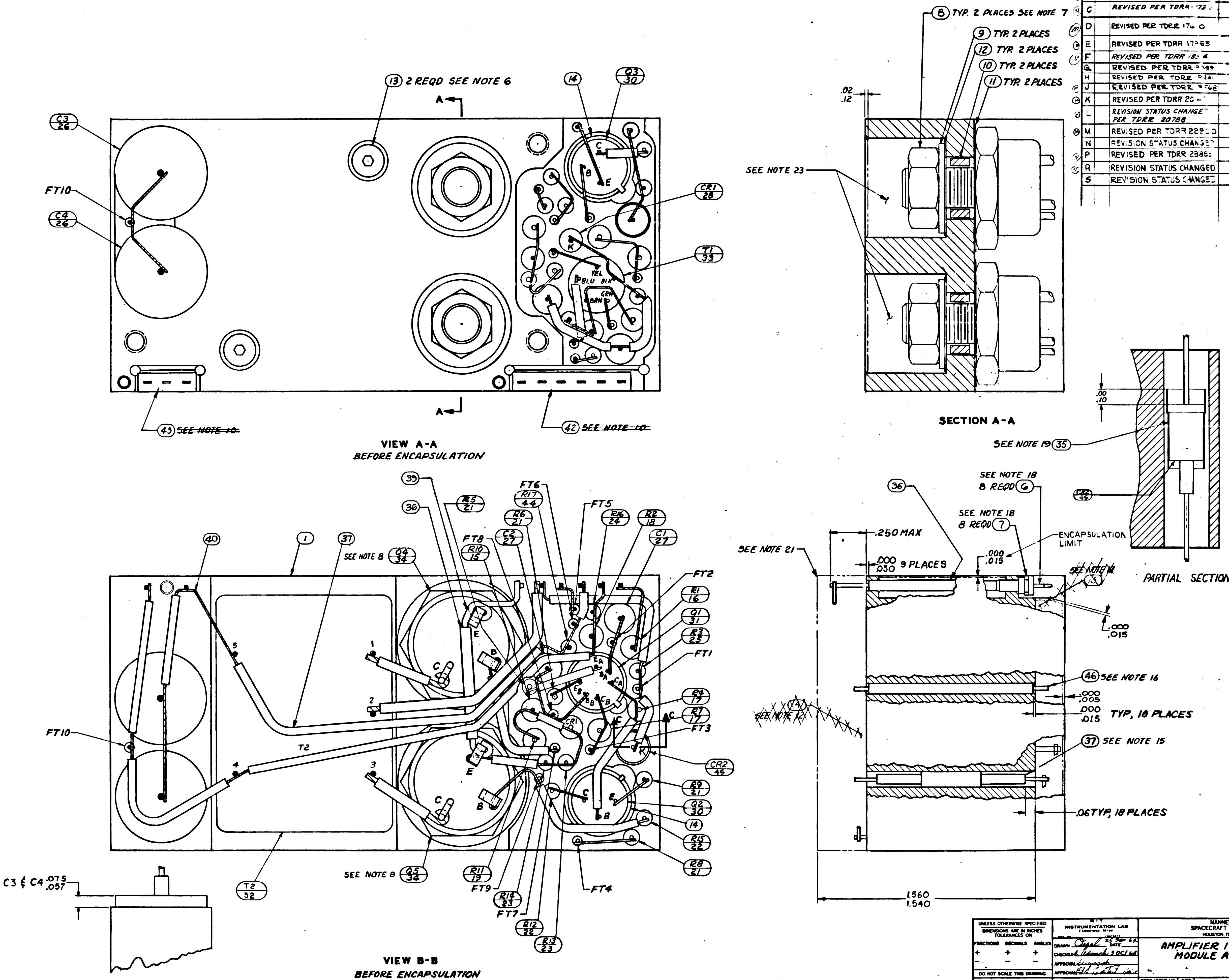
MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN Ouzel DATE 26 SEP 64
CHECKED Udwod 3 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1007547
SCALE 2/1
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		~~REVISED~~ PER TDRR 154[illegible]		[illegible] 65	
B		REVISED PER TDRR 16[illegible]38		24 FEB 65	JW?
C		REVISED PER TDRR-173[illegible]		12-MAR-65	B.
D		REVISED PER TDRR 176[illegible]0		24 MAR 65	HTO
E		REVISED PER TDRR 17[illegible]65		6 APR 65	JJJ
F		REVISED PER TDRR 18[illegible]4		[illegible] APR 65	R.W.T.
G		REVISED PER TDRR [illegible]99		[illegible]	
H		REVISED PER TDRR [illegible]41		[illegible] JUNE 65	
J		REVISED PER TDRR [illegible]68		[illegible] JUNE	
K		REVISED PER TDRR 2[illegible]		19 JUN 65	
L		REVISION STATUS CHANGED PER TDRR 20788		17 JULY 65	JJR
M		REVISED PER TDRR 229[illegible]		12 OCT 65	
N		REVISION STATUS CHANGED		16 NOV 65	
P		REVISED PER TDRR 2388[illegible]		16 NOV 65	
R		REVISION STATUS CHANGED		24 FEB 66	
S		REVISION STATUS CHANGED		28 JUN 66	


13 2 REQD SEE NOTE 6
A
14
Q3 30
C3 26
FT10
C4 26
CR1 28
T1 33
C
B
E
K
YEL
BLU
BLK
GRN
BRN
43 ~~SEE NOTE 10~~
42 ~~SEE NOTE 10~~
8 TYP. 2 PLACES SEE NOTE 7
9 TYP. 2 PLACES
12 TYP. 2 PLACES
10 TYP. 2 PLACES
11 TYP. 2 PLACES
.02
.12
SEE NOTE 23
.00
.10
SEE NOTE 19 35
CR2 45
39
36
R5 21
R17 44
FT6
FT5
R6 21
R16 24
R2 18
C2 27
C1 27
FT8
R10 15
40
1
37
SEE NOTE 8 Q4 34
FT2
E1 16
Q1 31
R3 25
FT1
R4 17
R7 17
FT3
CR2 45
R9 21
Q2 30
14
R15 22
R8 21
FT4
T2
T2 32
SEE NOTE 8 Q5 34
R11 19
FT9
R14 23
FT7
R12 22
R13 23
1
2
3
4
5
CR1
C3 & C4 .075 .057
SEE NOTE 18 8 REQD 6
SEE NOTE 18 8 REQD 7
ENCAPSULATION LIMIT
.250 MAX
.000 .030 9 PLACES
.000 .015
SEE NOTE 21
~~SEE NOTE 12~~ 3
.000 .015
46 SEE NOTE 16
.000 .005
.000 .015 TYP, 18 PLACES
37 SEE NOTE 15
~~SEE NOTE 12~~ 14
.06 TYP, 18 PLACES
1.560 1.540

VIEW A-A
BEFORE ENCAPSULATION

SECTION A-A

PARTIAL SECTION C-C

VIEW B-B
BEFORE ENCAPSULATION

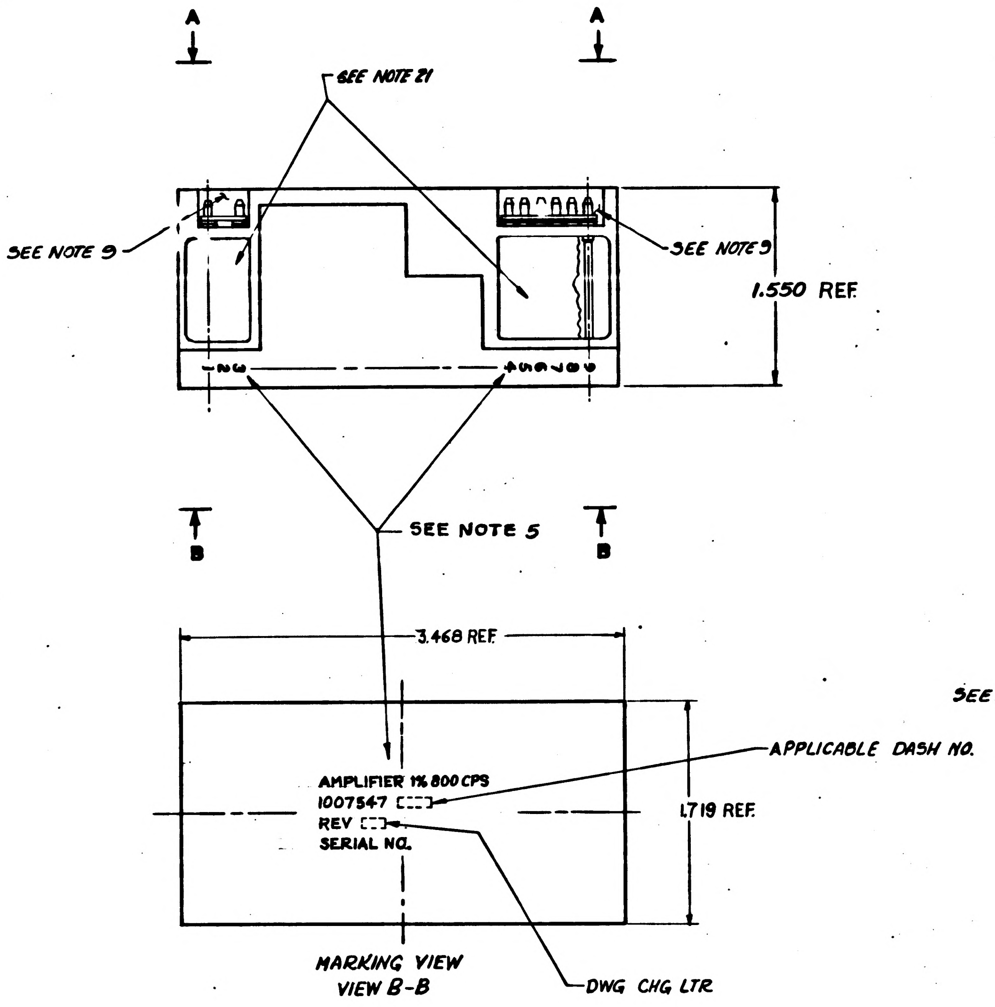
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	M I T INSTRUMENTATION LAB CAMBRIDGE MASS	MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DO NOT SCALE THIS DRAWING	DRAWN Orgel DATE 25 Sep 64 CHECKED A. Udonach 3 OCT 64 APPROVAL APPROVAL	AMPLIFIER 1%-800CPS MODULE ASSEMBLY		
MATERIAL	NASA APPROVAL	CODE IDENT NO. 80230	SIZE E	1007547
CONTRACT NAS 9-497	MIT APPROVAL	SCALE 5/1		SHEET 2 OF 2

SYM	ZONE	REVISIONS DESCRIPTION	DATE	APPD.
		CHG NO.		

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. COMPONENTS TO BE CENTRALIZED AND CEMENTED IN PLACE PER ND1002009 METHOD C
3. UNLESS OTHERWISE SPECIFIED: WIRING SHALL MEET THE REQUIREMENTS OF ND1002069.
4. ALL WELDED CONNECTIONS TO BE MADE PER ND1002005.
5. MARK PIN NUMBERS .100/.060 HIGH (WHITE) AND ALL OTHER CHARACTERS .140/.100 HIGH (WHITE) PER ND 1002019 AND SERIALIZE PER ND1002023. CENTRALIZE AS SHOWN.
6. COAT THREADS AND ITEM 32 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
7. MOUNTING TORQUE FOR ITEM 8 24 IN-LBS ± 2 IN-LBS.
8. SOLDER PER ND 1002071
9. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
10. BOND ITEM NUMBERS 42 AND 43 TO ITEM 1 PER ND1002237.
11. AR DENOTES AS REQUIRED
12. ON ITEMS 3 AND 4:

    K INDICATES CATHODE END.
    FT ( ) INDICATES FEED THRU.
    PLUS (+) INDICATES POSITVE END OF CAPACITOR.
    C - INDICATES COLLECTOR LEAD OF TRANSISTOR.
    B - BASE
    E - EMITTER
    C_A COLLECTOR
    B_A BASE
    E_A EMITTER
    C_B COLLECTOR
    B_B BASE
    E_B EMITTER
    MULTI STAGE TRANSISTOR.
13. WHITE DOT AND CLEAR WIRING INDICATES LOWER LEVEL WIRING.
14. BLACK DOT AND CROSS HATCHED WIRING INDICATES UPPER LEVEL WIRING.
15. TYPICAL SLEEVING FOR R3, R5, R6, R8 R9, R12, R13, R14, R15 AND R16
16. TYPICAL SLEEVING AND WIRE FOR FT1 THRU FT10.
17. VALUE OF R11 AND R17 TO BE DETERMINED BY ELECTRICAL TEST PER ATP1007547 PARTS TO BE SELECTED FROM CHARTS, VALUE IS IN OHMS.
18. ASSEMBLE PER ND 1002136.
19. BOND ITEM NO.35 TO ITEM NO.29. CURE AT AIR TEMPERATURE BEFORE ASSEMBLY TO ITEM NO.1
20. PROCURE PER PS 1007047.
21. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED: PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005 WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE, SHALL NOT EXCEED .015. REMOVE ALL FLASHING.
22. INSULATION TAPE PER MIL-I-15126 TYPE MFT 2.5, ½ WIDE
23. FILL PER ND 1002117



MARKING VIEW
VIEW B-B

SELECTION CHART FOR R11	
PART NUMBER	VALUE
1010364-325	2430
329	2550
337	2800
343	3010
351	3320
355	3480
361	3740
367	4020
371	4220
375	4420
377	4530
381	4750
385	4990
387	5110
391	5360
395	5620
399	5900
403	6190
405	6340
409	6650

SELECTION CHART FOR R17	
PART NUMBER	VALUE
1006750-84	150K
-56	10K
-49	5.1K
-44	3.3K
-41	2.4K
-38	1.8K
-36	1.5K
-34	1.2K
-32	1.0K
-30	820
-29	750
-27	620
-25	510
-23	430
-22	390
-20	330
-18	270
-16	220

SEE NOTE 17 (item 44)

SEE NOTE 17 (item 19)

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
☒		REF	1009525	SCHEMATIC DIAGRAM ELECTRICAL
1		44	1006750-	RESISTOR, FIXED
1		43	1008540-3	GASKET, CONNECTOR, MINAT.
		42	1008540-6	GASKET, CONNECTOR, MINAT.
AR		41	1006757-8	WIRE, ELECTRICAL .020 DIA
AR		40	1006757-1	WIRE, ELECTRICAL .010-.020
AR		39	1006757-9	WIRE, ELECTRICAL .032 DIA
AR		38	-22	INSULATION SLEEVING, ELECTRICAL
AR		37	-21	INSULATION SLEEVING, ELECTRICAL
AR		36	1006776-20	INSULATION SLEEVING, ELECTRICAL
AR		35	SEE NOTE 22	INSULATION TAPE, ELECTRICAL
1		34	1010273-2	TRANSISTOR (MATCHED PAIR)
1		33	1010324	TRANSFORMER
1		32	1010307	TRANSFORMER
1		31	1010431	TRANSISTOR
1		30	1010345-2	TRANSISTOR (MATCHED PAIR)
1		29	1010265-2	SEMICONDUCTOR DEVICE, DIODE
1		28	1010372-15	SEMICONDUCTOR DEVICE, DIODE
2		27	1010264-9	CAPACITOR, FIXED
2		26	1010264-37	CAPACITOR, FIXED
1		25	-57	
1		24	-56	
2		23	-25	
2		22	-12	
2		21	1006750-1	
2		20	1010369-1	
1		19	1010364-	
1		18	-573	
2		17	-327	
1		16	-309	
1		15	1010364-273	RESISTOR, FIXED
2		14	1008025-2	INSULATOR, BUSHING
2		13	1000093-13	SCREW
2		12	1008024-4	WASHER, INSULATOR
2		11	1008024-3	WASHER, INSULATOR
2		10	1008021-2	BUSHING, INSULATOR
2		9	1008071-5	WASHER, FLAT
2		8	MS20341-416B	NUT
8		7	1006775	INSULATOR
8		6	1006782-5	CONTACT, WRAPOST-MALE
		5		
1		4	1015712	
1		3	1015711	INSULATOR
		2		
1		1	1015709	HEATSINK

LIST OF PARTS AND MATERIALS

MASTER

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1007572		

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

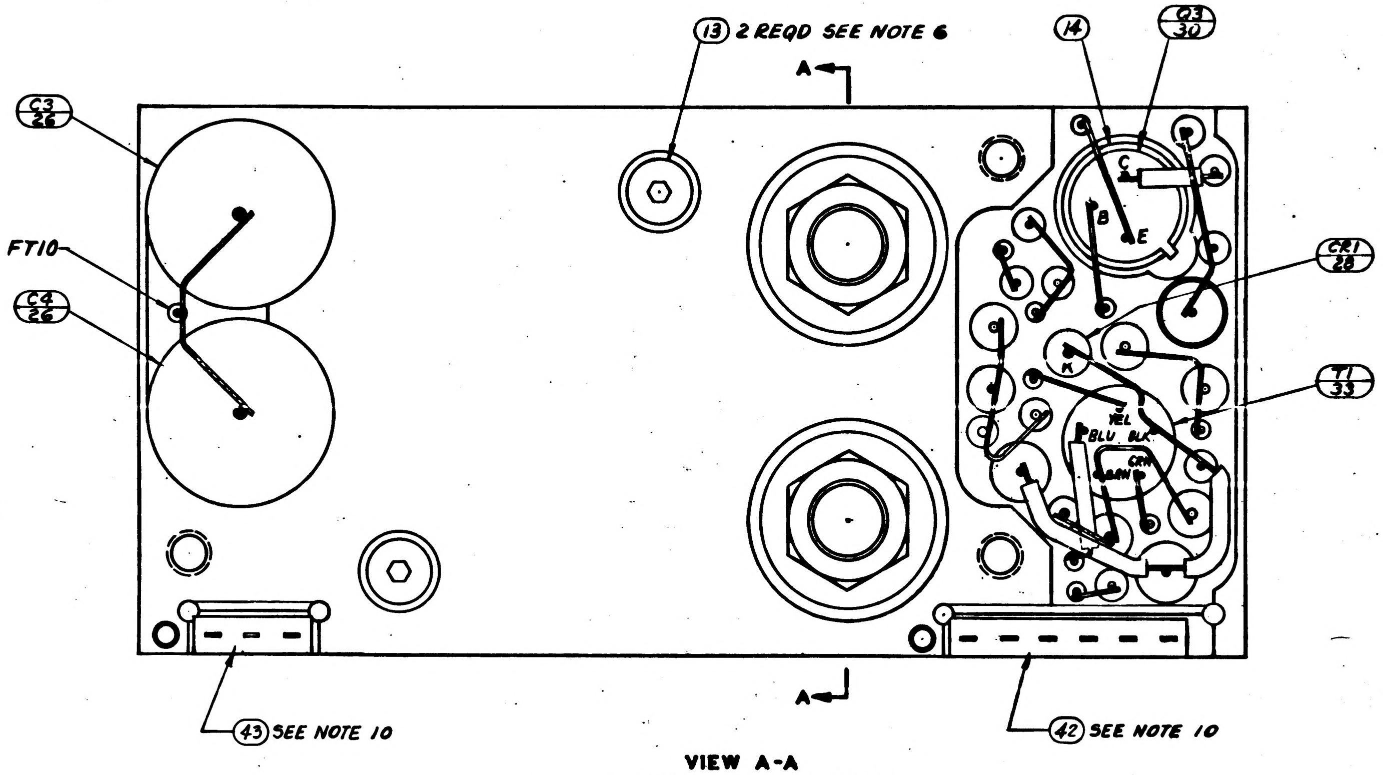
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ .XX ±.02 +
- .XXX ±.005 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Oegel DATE 26 SEP 64
CHECKED 3 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

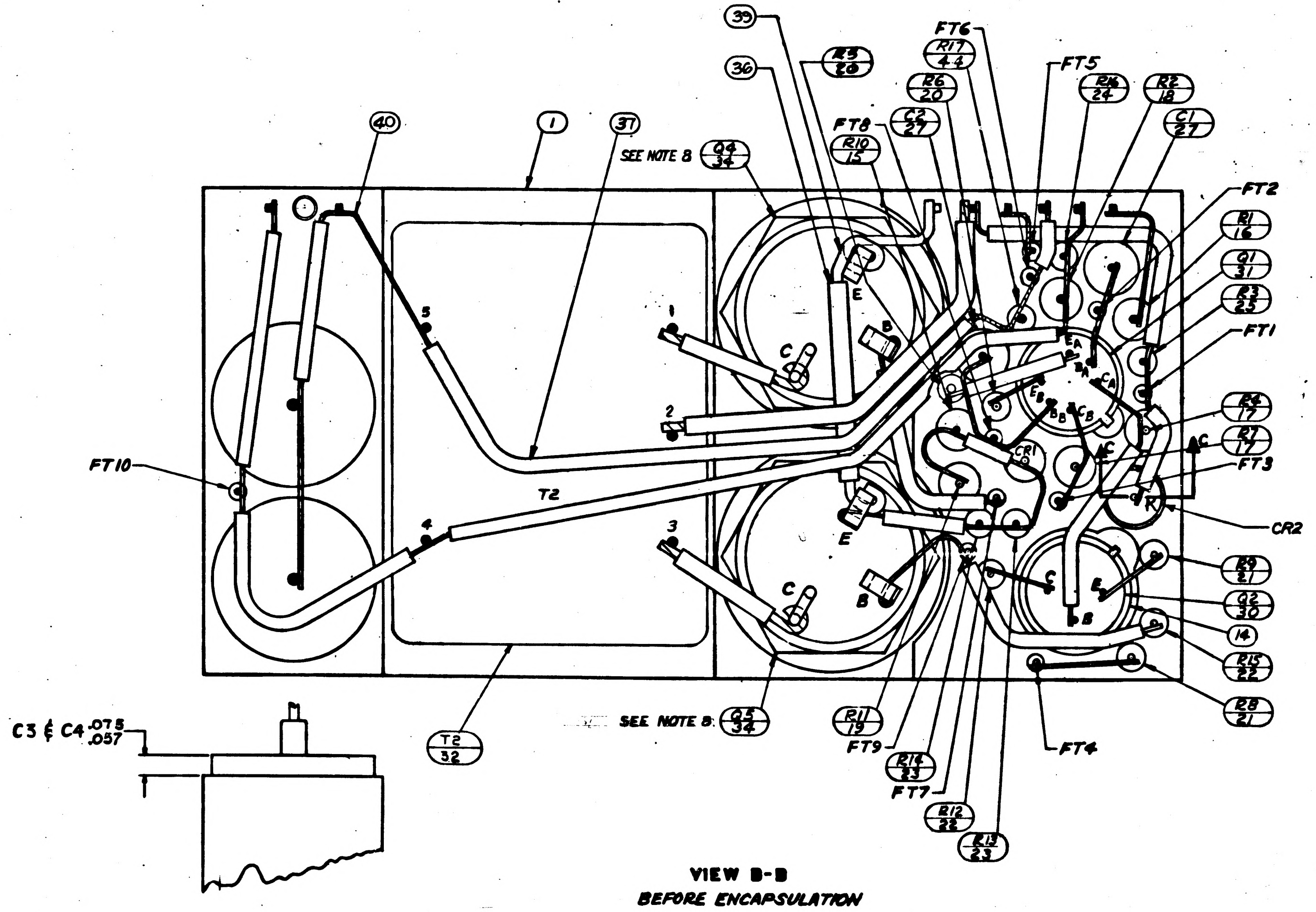
AMPLIFIER 1%-800 CPS
MODULE ASSEMBLY

CODE IDENT NO. | SIZE E | 1007547
SCALE 2/1 | SHEET 1 OF 2



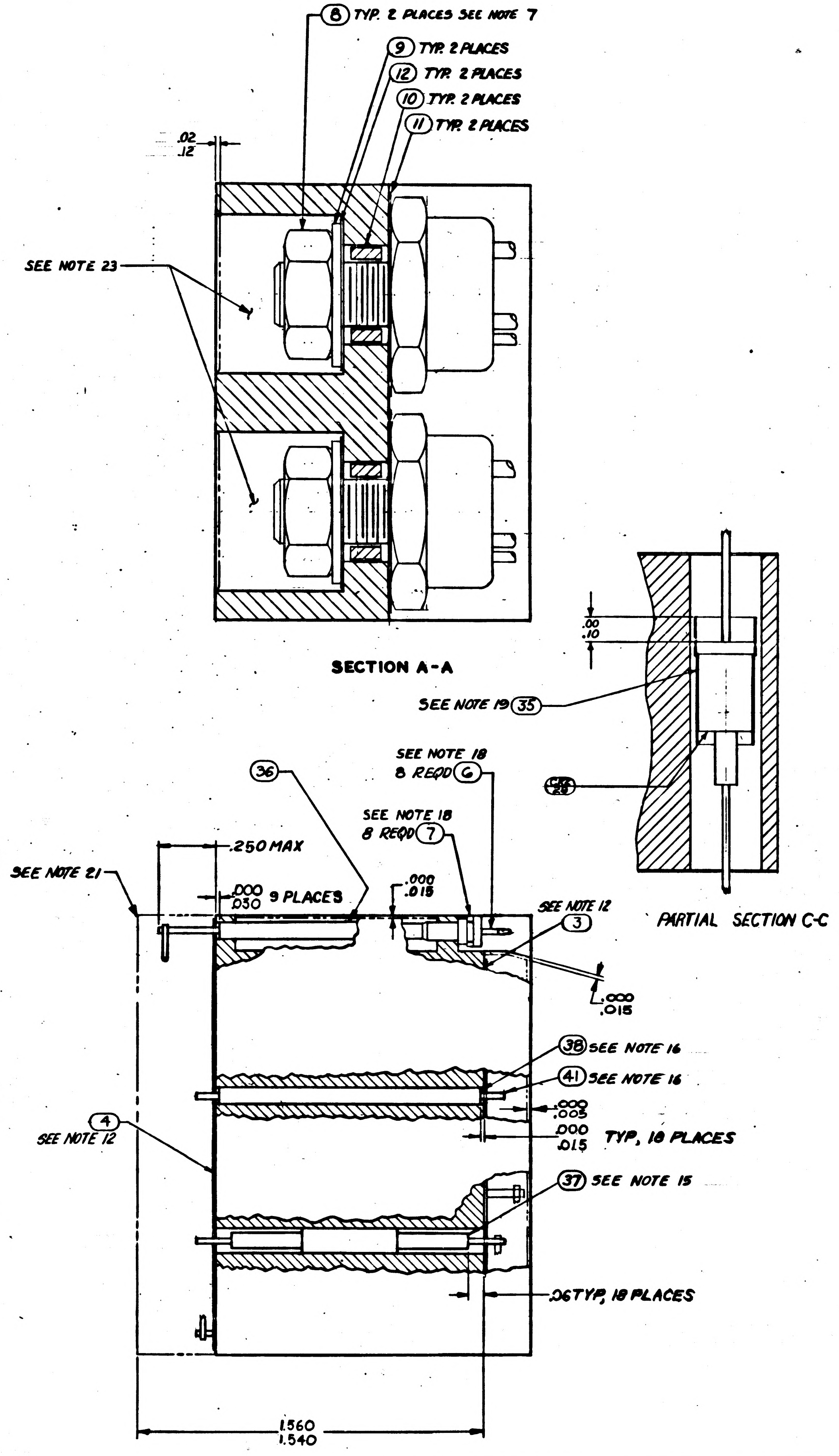
(13) 2 REQD SEE NOTE 6
A
(14)
Q3/30
C3/26
FT10
C4/26
CR1/28
T1/33
C
B
E
K
YEL
BLU
BLK
GRN
(43) SEE NOTE 10
(42) SEE NOTE 10

VIEW A-A
BEFORE ENCAPSULATION



(39)
(36)
R5/20
FT6
R17/44
FT5
R6/20
R16/24
R2/18
FT8
C2/27
C1/27
R10/15
(40)
(1)
(37)
SEE NOTE 8
Q4/34
FT2
R1/16
Q1/31
R3/25
FT1
R4/17
R7/17
FT3
CR2
R9/21
Q2/30
(14)
R15/22
R8/21
FT4
R13/23
R12/22
FT7
R14/23
FT9
R11/19
SEE NOTE 8
Q3/34
T2/32
T2
FT10
1
2
3
4
5
C
B
E
EA
BA
CA
EB
BB
CB
CR1
K
C3 & C4 .075/.057

VIEW B-B
BEFORE ENCAPSULATION



(8) TYP. 2 PLACES SEE NOTE 7
(9) TYP. 2 PLACES
(12) TYP. 2 PLACES
(10) TYP. 2 PLACES
(11) TYP. 2 PLACES
.02/.12
SEE NOTE 23
SECTION A-A
.00/.10
SEE NOTE 19 (35)
C28/28
PARTIAL SECTION C-C
(36)
SEE NOTE 18 8 REQD (6)
SEE NOTE 18 8 REQD (7)
.250 MAX
SEE NOTE 21
.000/.030 9 PLACES
.000/.015
SEE NOTE 12 (3)
.000/.015
(38) SEE NOTE 16
(41) SEE NOTE 16
.000/.005
.000/.015 TYP, 18 PLACES
(4) SEE NOTE 12
(37) SEE NOTE 15
.06 TYP, 18 PLACES
1.560/1.540

REVISIONS 13911

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.

MASTER

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL -
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Cryal DATE 25 SEP 62
CHECKED Adamick 3 OCT 62
APPROVAL
APPROVAL
NASA APPROVAL 11-2-62
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER 1%-800CPS
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1007547
SCALE 5/1
SHEET 2 OF 2

1007547